

## **Section 4.5**

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## **4.5 CULTURAL AND PALEONTOLOGICAL RESOURCES**

This section describes existing conditions and the potential cultural and paleontological resource impacts associated with the construction and operation of the Proposed Project and alternatives.

### **4.5.1 Cultural Resources**

In support of the PEA and in compliance with CEQA and Section 106 of the National Historic Preservation Act of 1966 (as amended) (NHPA), a cultural resource study was conducted to identify and evaluate cultural resources within the cultural resources study area, including the area of potential effect (APE), from June 2006 to October 2007 (Eckhart and Jordan 2007a, b, c). The cultural resources assessment included a records search, archival research, pedestrian surveys, and evaluations of the built environment for the Proposed Project and alternatives. This section is adapted from the cultural resource technical studies (Eckhardt and Jordan 2007a, b, and c) and describes the results of that study, potential impacts, APMs, and mitigation measures. While most of the Proposed Project is located on private land, a short segment (approximately 750 feet by 30 feet) of the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1) extends across land managed by the BLM Palm Springs Field Office. The short segment that crosses land managed by the BLM is the only portion of the project subject to Section 106 of the NHPA. The inventory identified four cultural resources. None of the cultural resources are located on land administered by the BLM (Eckhardt and Jordan 2007b). A second study was conducted in October 2007 that included the Proposed Devers-Coachella Valley 220 kV Transmission Line Loop-In (Eckhardt 2007c). This study did not identify any previously recorded or newly recorded resources within the APE.

Research conducted for the Proposed Project included formal records searches at the California Historical Resources Information System (CHRIS), correspondence with the California Native American Heritage Commission, and performance of an intensive pedestrian survey and light reconnaissance of the cultural resources study area.

#### **4.5.1.1 Applicable Laws, Regulations, and Standards**

##### **Federal**

##### **National Historic Preservation Act**

Since a segment of the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1) crosses land managed by the BLM and because this route has the potential to affect cultural resources, the segment of the project that crosses BLM land is an undertaking pursuant to 36 CFR 800.16y and is subject to Section 106 of the NHPA. Section 106 of the NHPA requires that a federal agency take into account the effects of an undertaking on historic properties and afford the Advisory Council on Historic Preservation (ACHP) and other interested parties the opportunity to comment on project actions prior to the beginning of the undertaking.

In accordance with Section 106, cultural resource significance is evaluated in terms of eligibility for listing in the National Register of Historic Places (NRHP) and properties that are determined eligible for listing or that are already listed in the NRHP are considered Historic Properties. 36 CFR 60.4 defines the significance criteria as:

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

- a) [Criterion A] That are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) [Criterion B] That are associated with the lives of persons significant in our past; or
- c) [Criterion C] That embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) [Criterion D] That have yielded or may be likely to yield, information important in prehistory or history.”

## **State**

### California Register of Historic Resources

Cultural resources include archaeological and historic objects, sites and districts, historic buildings and structures, and sites and resources of concern to local Native Americans and other ethnic groups. Cultural resources which meet the criteria of eligibility to the California Register of Historic Places (CRHP) are termed “historic resources.” Archaeological resources that do not meet CRHP criteria also may be evaluated as “unique;” impacts to such resources could be considered significant, as described below.

Before impacts or mitigation of impacts can be addressed, a site must first be determined to be an historic resource or a unique resource. For archaeological resources, subsurface testing will be necessary to determine if a subsurface component is present, whether the areal extent of surface and/or subsurface materials will be affected by the proposed action, and to determine if the resource(s) in question have the potential to answer local and regional questions. If a resource is determined to be an historic resource or unique resource, a program to mitigate anticipated impacts must be implemented. Sites not determined to be historic resources or unique resources need not be addressed as to mitigation of impacts.

A site meets the criteria for inclusion on the CRHP if:

Criterion 1 - It is associated with events that have made a significant contribution to the broad patterns of California’s History and Cultural Heritage

Criterion 2 - It is associated with the life or lives of a person or people important to California’s past

Criterion 3 - It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

Criterion 4 - It has yielded, or may be likely to yield, information important to prehistory or history

## Unique Archaeological Resources

Impacts to “unique archaeological resources” are considered under CEQA, and are described under PRC 21083.2. A unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets one of the following criteria:

- Contains information needed to answer important scientific questions and there is a demonstrable public interest in that information
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

A non-unique resource is one that does not fit the above criteria.

### **4.5.1.2 Significance Criteria**

Under CEQA and local laws, impacts to cultural resources may occur if a project:

- Causes a substantial, adverse change in the significance of a cultural resource that is listed or eligible for listing in the California Register of Historic Resources (CRHR) or local registers (a historic resource).
- Causes a substantial change in the significance of, or destroy, a unique archaeological resource, or disturb human remains. In addition, if human remains are discovered and are determined to be of Native American origin, then the Native American Graves Protection and Repatriation Act (NAGPRA) may come into effect.

### **4.5.1.3 Applicant Proposed Measures**

To the extent possible, all construction activity associated with the Proposed Project should avoid impacts to cultural resource sites in this inventory. Where it can be reasonably assured, through combinations of adjustments of project components and/or where minimal protective measures can be taken, avoidance of project impacts to cultural resources is the preferred treatment measure. Avoidance of effects to the resources identified in this inventory may be facilitated by (1) minor revisions to engineering design (e.g., micro-siting of transmission line structures and access roadways), (2) engineering design adjustments to short lengths of transmission line alignment, and (3) implementation of a rigorous construction-monitoring program. In all cases where this is feasible, avoidance is preferred. SCE proposes the following APMs for cultural resources.

**CUL-1. Native American Consultations.** Continued consultation and communication with interested Native American community to understand the concerns of the Native American members in identifying measures that would prevent direct and indirect impacts. One such measure may include the following: if previously unidentified archaeological resources are unearthed during construction activities, construction will be halted in that area and directed

away from the discovery, until a qualified archaeologist assesses the significance of the resource. The archaeologist would recommend appropriate measures to record, preserve, or recover the resources.

**CUL-2. Discovery of Human Remains.** If human remains are encountered during construction or any other phase of development, work in the area of the discovery must be halted in that area and directed away from the discovery. No further disturbance would occur until the county coroner makes the necessary findings as to origin, pursuant to Public Resources Code 5097.98-99, Health and Safety Code 7050.5. If the remains are determined to be Native American, then the NAHC would be notified within 24 hours, as required by Public Resources Code 5097. The Native American Heritage Commission (NAHC) would notify the designated Most Likely Descendants, who would provide recommendations for the treatment of the remains within 24 hours. The NAHC mediates any disputes regarding the treatment of remains.

**CUL-3. Construction Monitoring.** All ground-disturbing activities occurring along the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line Alternative (Route 4) would be monitored by a qualified archaeologist. The route is highly sensitive for cultural resources.

The APMs to avoid and/or minimize impacts to cultural resources have been included as part of the Proposed Project and are included in SCE standard construction and operation protocols. With the implementation of these APMs, impacts to cultural resources would be less than significant.

#### **4.5.1.4 Environmental Setting**

The Proposed Project is located within the northern Peninsular Ranges Province. This province consists of major linear geological structures (faults and folds) and the resulting geographic features (mountains and valleys) trench in a dominantly northwesterly direction (Jahns 1954; Rogers 1965). Most of the surface composition consists of stream channel deposits instead of younger alluvium, and the deposits at the mouths of the major canyons on the other side of the San Jacinto Mountains have been mapped as alluvial fan deposits instead of younger alluvium (Dibblee 2004). Major rock units within the area consist of the Imperial Formation Pleistocene non-marine sedimentary deposits, including the Cabazone Fanglomerate and the Ocotillo Conglomerate. The area of Garnet Hill is exclusively made of exposed folded deposits of the Imperial Formation. Mapping by Rodgers (1965) indicates two underlain rock units, including, in ascending stratigraphic order, Holocene alluvium and Holocene dune sands.

#### **Cultural Setting**

The cultural setting described below is based, in large part, on the cultural sequences set forth in previous research conducted for the Devers to Palo Verde high-voltage transmission line corridor (Carrico et al. 1982; Eckhardt et al. 2005). The current study has been updated to reflect more recent research and findings.

#### Prehistoric

There are two major prehistoric cultural sequence periods: the San Dieguito/Mojave (10,000 BC to 1200 BC) and the Amargosa (1200 BC to AD 1200). The San Dieguito Complex (Paleoindian

Horizon) is subsumed within the Mojave I Period, a period lasting between 10,000 BC to 4000 BC. During this period, populations adapted to the cooler and moister conditions of the sub-Pleistocene environment. Populations are characterized as small, mobile groups, subsisting through a multiple foraging strategies with either an emphasis on a floral/faunal mixed strategy or primary faunal resources.

The San Dieguito complex is divided into three distinct phases. San Dieguito I sites are typically located high above existing water sources and are characterized by tool assemblages that include ovate bifaces, spokeshaves, bilateral notched pebbles, scraper planes, and chopping tools (Rogers 1939). San Dieguito II tool assemblages are similar to San Dieguito I; however, the artifacts are more finely worked blades, somewhat smaller and lighter points, and a larger variety of scrapers and choppers. Lastly, the San Dieguito III phase represents morphological and typological changes, as indicated by an altered technology. A wider and more complex variety of tools types, including pressure-flaked blades and points and a refinement in tool manufacture, characterize this phase.

The Mojave II Period, between 4000 and 1200 BC, is often placed within the Milling Stone Horizon. Environmental conditions fluctuated from warm and dry to cool and wet, to warm and wet, to warm and dry during this period (Moratto et al. 1978). Settlement patterns were similar to earlier phases and related to the procurement of fluctuating and widely dispersed resources. Pinto series projectile points characterize this period, along with blade knives, flake knives, drills, scrapers, graters, stemmed flakes, serrated objects, chipped discs, cores, and utilized flakes. In addition, milling-stone tools (manos) and metates appear, possibly indicative of the "collection and processing of seeds and other vegetal materials in contrast to the postulated dominant hunting pattern of the earlier periods" (Warren and Crabtree 1979).

The artifact assemblage associated with both of the Amargosan periods can be generalized as possessing well-made corner notched points, milling stones, manos, ground slate pendants, and flake scrapers (Kowta 1969; Rogers 1939). The Amargosa I occurred between 1200 BC and AD 600. A wide range of floral and faunal resources were exploited during this period by regionally specialized hunters and gatherers, who used a more scheduled movement across various environmental zones. Food sources included small game, nuts, seeds, and berries. Diagnostic artifacts include the Elko and Gypsum series projectile points, scraper planes, sidescrapers, bifaces, and milling equipment. The decrease in projectile point size at the end of this period suggests the introduction of the bow and arrow. The Amargosa II Period occurred between AD 600 and AD 1200 and is characterized by the increased presence of small diagnostic projectile points, possibly correlating to an increased use of the bow and arrow. Further, milling implements continue to be present and ceramics appear, possibly indicating contact with Southwestern cultures. Diagnostic points include the Rose Spring, Eastgate, Desert Side-notched, and Cottonwood types. Sites are typically situated near boulder clusters, water holes, springs, and rock shelters.

## Ethnohistory

The Proposed Project is located within the ethnographic territory of the Cahuilla people (Bean 1972). The Cahuilla are a Shoshonean-speaking group who inhabit the region of eastern central Riverside County. Their territory included some 2,400 square miles of modern southern California between AD 900 and AD 1500 (Bean 1978). The territory ranged from the San Bernardino Mountains in the north, to Borrego Springs and the Chocolate Mountains in the

south, and east, from a portion of the Colorado Desert west of Orocopia Mountain to the San Jacinto Plain near Riverside, ending near the eastern slopes of Palomar Mountain. Cahuilla territory was bisected by the Cocomaricopa Trail, one element in the Pacific Coast-Great Plains trading routes used by native people beginning in pre-Columbian times (Bean 1978). Similarly, the territory was at the periphery of two other trail systems, the Santa Fe and the Yuman (Bean 1978:575). Subsequently, the Cahuilla regularly interacted with neighboring tribes, including the Gabrielino and Serrano (Bean 1978:575).

The Cahuilla are composed of three subdivisions, as determined by linguistic variation and geography: the Pass Cahuilla, Desert Cahuilla, and Mountain Cahuilla. Cahuilla society was organized into patrilineal, totemic, and exogamous moieties: the Coyote (Istam) and the Wildcats (Tuktum) (Kroeber 1925; Strong 1929). These moieties were further organized into clans and lineages associated with local places (Bean et al. 1981, 1991).

Cahuilla habitation coincided with the filling of Lake Cahuilla, a freshwater lake that provided them with numerous resources (Carrico et al. 1982). As the lake began to dry out, approximately 400 to 500 years ago, the Cahuilla moved into the nearby mountains and upper Coachella Valley, around springs and water seeps.

Villages were situated in canyons or on alluvial fans; areas that provided adequate water and food sources, as well as protection from strong winds (Bean 1978). Group members left the permanent villages for specific purposes, including trade, hunting, or gathering (Bean 1978). The Cahuilla relied on hunting and gathering as a primary subsistence method, hunting rabbit and other small game and gathering acorns, mesquite and screw beans, piñon nuts, and cactus bulbs (Bean 1978). In addition, the Cahuilla practiced proto-agriculture where corn, beans, squash, and melon were harvested (Bean 1978). Cahuilla used stone mortars and pestles, manos and metates, wooden mortars, baskets, pottery (small-mouthed jars, cooking pots, open bowls, dishes, and pipes), soapstone arrow straighteners, willow and mesquite bows and arrows, and numerous ceremonial instruments (Bean 1978).

### Historic Period

Until the post-World War II era of off-road vehicle use and easier access to desert recreation, mining, dry farming, cattle grazing, and transportation across the desert lands were the focus of settlement and land use during the Historic Period. In general, these broad themes of mining, farming, livestock, transportation, and in the post-1940 era, military activities, formed the major historical and cultural framework for understanding the history of the region (Warren and Roske 1978).

The first substantial Spanish exploration began with the *entradas* of Father Jacobo Sedelmayr in 1744, when he traversed the area near what is now Blythe, controlled at that time by the Halchidoma. Almost 30 years passed before Francisco Garces and his party, in 1771, crossed portions of the area; he then returned in 1776.

Spanish Army Captain Juan Bautista de Anza passed through Coyote Canyon and the Santa Rosa Mountains while crossing from the desert into the coastal plains of Alta California in the San Francisco expeditions of 1774-1776 (Bolton 1930; Eckhardt 2006).



While the Spanish established trails and roads that served the San Diego area and the Los Angeles Basin by way of a southern route out of Yuma, Arizona, this region was rarely traversed until after the Mexican independence in 1821. Unlike the coastal areas and the foothills of southern California, there were no Spanish- or Mexican-period ranchos or large-scale land grants established. Jose Romero and Juan Maria Estudillo crossed the area via Indio and the Colorado River (Bean and Mason 1962). As was the case with many early Spanish, Mexican, and American overland routes, the famed Cocomaricopa Trail began as an Indian trail and later served as a mail route between Sonora, Mexico, and Alta, California, and later as the so-called Bradshaw Trail. Spanish and Mexican travelers left no record of permanent settlements or outposts.

The Mexican-American War led to the takeover of Alta, California, by the United States and began a gradual increase in travel and commerce in the region. The California Gold Rush of 1849 affected the northern regions of the state but had little effect on inland areas of the south. Men with gold-fueled wanderlust poured into the gold regions of northern California by a variety of routes, but very few attempted the dry and inhospitable passage across the Mojave and Colorado deserts. Nonetheless, some small-scale, limited mining took place within the area in the 1860 to 1890 era, as a result of strikes near Blythe. Individuals, rather than formal mining companies, eked out a living working claims in the La Paz and Castle Dome areas (Vredenburg et al. 1981). One of these prospectors, William Bradshaw, established an overland stage route that linked the mining boomtown of Las Paz, Arizona, with San Bernardino, California. Known as the Bradshaw Trail, the route followed the ancient Cahuilla and Maricopa trails that linked wells and springs. A portion of the Bradshaw Trail crosses the Mule Mountains and Palo Verde Mesa, near Blythe.

The coming of the railroads to the deserts would change the face of the region (Fickewirth 1992). In the early 1880s, the Atlantic and Pacific Railroad (now the BNSF) completed its track system across the California desert (Myrick 1962). The rail system included railroad sidings, water tanks, and section houses. These sidings and stations were given alphabetical names, including Amboy, Bristol, Cadiz. Until the coming of paved roads and automobiles in the 1930s, the railroad served as the major transportation artery across the deserts.

The occasional small strike of gold and silver raised hopes that somewhere in the vast reach of the desert a mother load awaited (Miller 1968). The first major strike occurred in the Old Woman Mountains in 1898 and led to a boomlet that lasted until 1901. Tungsten, gold, and silver were coaxed from the soils in the Old Woman Mountains and the Chuckwallas (Bateman and Irwin 1954). Some found riches in salt mining at Bristol and Danby lakes, in the first decades of the 1900s. Salt and gypsum mines, coupled with iron deposits in the Eagle Mountains after World War I, have been the most successful and enduring mining activities in the desert (Lomax 1941). The Eagle Mountain Railroad was built between 1945 and 1947 and opened in 1948 to serve the Eagle Mountain Mine (Kaiser Steel), by linking it to the Southern Pacific Railroad at Duramid.

The advent of the automobile and trucks allowed for expansion of settlement and land use beyond the limited reach of the rail systems. By the 1930s, washboard roads and hard-packed trails supported hard rubber tires of gasoline- and steam-driven trucks and automobiles. Paved roads spread uncertainly from towns on the Colorado River, such as Needles and Yuma, towards their larger cousins in the inland valleys, such as Riverside and San Bernardino. Notable settlements included Desert Center and Chanbless; others sprang up in the arid desert,

only to fade away when major roads bypassed them or automobiles became more dependable and less likely to need a quick stop at a local service station.

The construction of the Metropolitan Water District (MWD) aqueduct, between 1934 and 1941, fueled the economy in the midst of the Great Depression. Desert Center and Rice became boomtowns, and the roads rumbled with the sounds of trucks carrying supplies, food, and construction material. The MWD established company towns at several of their pumping plants, further changing the desert landscape. With the construction of Boulder Dam in the 1930s, and development of the hydroelectric facilities there, the stage was set for the first of many trans-desert transmission lines. Small settlements, such as the one at Camino, rose to service the budding electrical industry.

Although of short duration (1942 to 1944), the development and use of General George Patton's Desert Training Center (DTC) had a significant effect on both the economy of the time and on the desert landscape. As is well documented by Bischoff (2000), the DTC served as the training grounds for soldiers and equipment that were bound for the deserts of Africa and decisive victories over German forces there. The DTC spread over many square miles and included not only the semi-permanent operations facilities, but also outlying tank training grounds, infantry camps, and outposts. Radiating from the central command area, which is still marked with aligned and painted rocks, structural ruins and airfields were carved from the desert pavement. The archaeological record on the ground rapidly diminishes until it is represented by tank tracks, piles of rusting cans, and foxholes, futilely resisting the desert sands.

## **Native American Consultation**

In addition to archival research and field investigations, the NAHC was contacted via letters in June 2006, May 2007, and October 2007. The NAHC response identified one significant resource during the archival research—Garnet Hill—and provided a list of Native American contacts that may have knowledge of additional resources in the project area. Potential interested parties recommended by the NAHC were contacted via letter in October 2006. Two contacts provided recommendations and comments. Detailed information regarding research methods may be found in the technical studies. The Agua Caliente Band of Cahuilla Indian community responded with concern for potential impacts to cultural resources.

### **4.5.1.5 Proposed Project**

#### **Transmission**

No previously recorded or newly recorded resources were identified during the survey of the Proposed Devers-Coachella Valley 220kV Transmission Line Loop-In.

#### **Subtransmission**

##### Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1)

There is one Native American cultural resource identified by the Native American Heritage Commission that is located within the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1) route.

## Previously Recorded Resources

**Garnet Hill** The resource is *Hoon wit ten ca va* (Garnet Hill), a place of cultural significance to the Cahuilla Indian Tribe. This landform is significant to the Cahuilla because it was named by the Cahuilla culture's hero *Ca wis ke on ca* in his delineation of the territory of the *Kauiskitum* lineage. The traditional territory of the *Kauiskitum* encompasses the City of Palm Springs and much of the surrounding area. Although the site is recorded in the Sacred Lands File, maintained by the California NAHC, it has not been formally recorded or entered into the CHRIS. Its listing in the NAHC Sacred Lands File indicates potential Native American cultural resource significance as a Traditional Cultural Property (TCP). Traditional cultural significance is derived from the role a property plays in a community's historically rooted beliefs, customs, and practices. Properties may have significance under Criterion A if they are associated with events, or a series of events, significant to the cultural traditions of a community. Since the Garnet Hills appear eligible for listing in the NRHP and CRHR under Criterion A, consultation with the Cahuilla Indian Tribe has been initiated and will be on-going throughout the duration of the project.

## Newly Recorded Resources

No newly recorded resources were recorded during the cultural studies conducted for the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1).

## Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4)

One previously recorded resource, two newly recorded resources, and one isolated artifact are associated with the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4).

## Previously Recorded Resources

**CA-RIV-785** This resource is a prehistoric temporary encampment, originally recorded in 1974 by John Craib. Features recorded at the site include hearths and two rock cairns. Artifacts initially observed at the site included lithics, manos, ceramics, fire-cracked rock, hammerstones, and a cottonwood projectile point. Also noted were burnt animal bone and cremated remains. Testing in 1992 confirmed that the site consisted largely of surface deposits, however, three features were recognized—a hearth, cremation burial, and possible house floor. A recent site visit confirmed the presence of existing features and matches general site description. Given the presence of possible additional burials and the research potential of the site, the site is treated as eligible for listing in the NRHP and CRHR, for its potential to yield important information in prehistory.

## Newly Recorded Resources

A total of three newly recorded resources were identified during the cultural resource survey for this portion of the project.

**33-15429** This resource includes a lithic and ceramic scatter. The majority of the resource consisted of brown ware ceramics that represent at least two vessels. In addition to the ceramics, two milling tools were also observed. The resource is located approximately 30 meters north of the previously recorded resource CA-RIV-785 and may be associated. 33-

15429 is assumed eligible for listing on the NRHP and CRHR for its potential to yield important information in prehistory, and its potential association with CA-RIV-785.

**33-15430** This resource consists of a small discrete scatter of pottery sherds most likely associated with a single pot drop. Site 33-15430 is located 100 meters northwest of Site 33-15429 and more than 200 meters northwest of CA-RIV-785. In the absence of detailed recording, testing, and analysis, this resource does not appear to qualify for inclusion on the NRHP or CRHR. However, since this resource is located in close proximity to two potentially significant cultural resources, it is assumed eligible for inclusion into the NRHP and CRHR for the purpose of this project.

**33-15431** This resource is a single, isolated mano identified during the survey. The item was located along the margins of an access road. The object does not qualify for listing on either the NRHP or CRHR.

### **Subtransmission Line Reconfigurations**

#### Intersection of Bob Hope Drive and Dinah Shore Drive

No cultural resources were recorded within or adjacent to the intersection, and no cultural resources were identified during the survey of this area.

#### Intersection of Date Palm Drive and Varner Road

No cultural resources were recorded within or adjacent to the intersection, and no cultural resources were identified during the survey of this area.

#### Intersection of Portola Road and Gerald Ford Drive

No cultural resources were recorded within or adjacent to the intersection, and no cultural resources were identified during the survey of this area.

### **Substations**

The installation of new equipment and the reconfiguration or improvement to existing facilities or components would be implemented at the following substations: Devers, Mirage, Concho, Indian Wells, Santa Rosa, Eisenhower, Farrell, Garnet, Thornhill, and Tamarisk. No cultural resources were recorded within or adjacent to the substations, and no cultural resources were identified within or adjacent to these substations.

#### **4.5.1.6 Impact Analysis**

##### **Construction Impacts**

###### Proposed Devers-Coachella Valley 220 kV Loop-In

Since no cultural resources were identified in this area, there would be no construction impacts to cultural resources for this segment of the project. The Devers-Coachella Valley 220 kV Loop-In would have no impact on historical resources.

###### Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1)

Garnet Hill has been identified as a Native American cultural resource. It has not been determined if construction of the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1) would affect this resource. While it is unlikely that the site would be directly impacted by the proposed route, the resource might be indirectly impacted. However, the implementation of APM CUL-1, CUL-2, and CUL-3, and mitigation measure CUL-MIT-3 would reduce the potential impacts to less than significant.

###### Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4)

Implementation of the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4) could impact three cultural resources. None have been officially evaluated for the NRHP but, for the purposes of this report, each is treated as eligible for listing on the NRHP and the CRHR. The sites include CA-RIV-785, 33-15429, and 33-15430. The replacement of existing 115 kV subtransmission poles and the access road alteration and management would potentially impact sites 33-15429, CA-RIV-785, and 33-15430. Previous investigations at CA-RIV-785 identified buried features as well as human remains. Given the potential for additional buried features and possible human remains at these three sites, APM CUL-1, CUL-2, and CUL-3 shall be employed during construction activities. The implementation of mitigation measures CUL-MIT-1 and CUL-MIT-2 would reduce the potential impacts to less than significant.

No cultural resources were identified on the BLM land associated with this project. Therefore, no historic properties will be affected, and the segment would have no impact on historic resources.

No cultural resources were identified along the subtransmission line reconfiguration or within or adjacent to the substation. The reconfiguration of the subtransmission line and substations would have no impact on historic resources.

##### **Operational Impacts**

Operation of the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4) Project might result in direct or indirect impacts if the replaced subtransmission poles are located within the existing historic resources. Implementation of CUL-MIT-2 would reduce potential impacts to the historic resources to less than significant.

There would be no operational impacts to cultural resources along the proposed 220 kV transmission loop-in, Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1), or at the

subtransmission line reconfiguration sites and substation properties associated with this project. These segments would have no impact to historic resources.

In summary, impacts to cultural resources due to the construction and operation of the subtransmission line alternative routes would be less than significant with the implementation of APMs CUL-1, CUL-2, and CUL-3, and mitigation measures CUL-MIT-1, CUL-MIT-2, and CUL-MIT-3.

#### **4.5.1.7 Mitigation Measures**

In addition to the APMs listed above, specific measures will be implemented to reduce potential impacts to a less than significant level. The following cultural resource mitigation measures are proposed to minimize potential impacts.

**CUL-MIT-1. Data Recovery Plan.** An evaluation and data recovery plan shall be developed to address impacts to CA-RIV-785, 33-15429, and 33-15430.

**CUL-MIT-2. Cultural Resources Plan.** A cultural resource management plan shall be developed to prevent operational impacts to the cultural resource located between the Mirage Substation and I-10.

**CUL-MIT-3. Garnet Hills Native American Cultural Resource.** Appropriate measures, if deemed necessary, would be developed in consultation with Native American community members, as recommended by the NAHC, to address potential impacts to the Garnet Hills Native American cultural resource.

#### **4.5.1.8 Alternatives**

##### **Construction Impacts**

##### Farrell-Garnet 115 kV Subtransmission Line Alternative Route 2

The Farrell-Garnet 115 kV Subtransmission Line Alternative Route 2 extends through one previously recorded resource—Garnet Hill. As previously stated, the resource appears significant to the oral histories of the Cahuilla Indian Tribe and may be considered a TCP. Consultation with the Cahuilla Indian Tribe is on-going. No newly recorded resources were identified during the survey.

Construction of the Farrell-Garnet 115 kV Subtransmission Line Alternative Route 2 would result in impacts to the Garnet Hill cultural resource. Potential impacts to the resource would be mitigated to a less than significant level through the implementation of mitigation measure CUL-MIT-3 and APMs CUL-1, CUL-2, and CUL-3.

##### Farrell-Garnet 115 kV Subtransmission Line Alternative Route 3

One previously recorded resource, Garnet Hill, is located adjacent to the Farrell-Garnet 115 kV Subtransmission Line Alternative Route 3. As previously stated, the resource appears significant to the oral histories of the Cahuilla Indian Tribe and may be considered a TCP. It has

not been determined if construction of the Alternative Farrell-Garnet 115 kV Subtransmission Line (Route 3) would affect this resource. While it is unlikely that the site would be directly impacted by Route 3, the resource might be indirectly impacted. However, the implementation of mitigation measure CUL-MIT-3 and APMs CUL-1, CUL-2, and CUL-3 would reduce the potential impacts to less than significant.

Construction of the Farrell-Garnet 115 kV Subtransmission Line Alternative Route 3 would have a less than significant impact on cultural resources.

### Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5

No cultural resources were previously recorded, and no cultural resources were identified during the survey of the Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5.

Construction of the Mirage-Santa Rosa 115 kV Subtransmission Line Alternative (Route 5) would have no impact on cultural resources.

### **Operational Impacts**

Operation of the Farrell-Garnet 115 kV Subtransmission Line Alternative Route 2 has the potential to impact historical resources. Implementation of CUL-MIT-3 would reduce the impacts to less than significant.

Operation of the Farrell-Garnet 115 kV Subtransmission Line Alternative Route 3 would not significantly impact cultural resources.

Operation of the Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5 would not significantly impact cultural resources.

In summary, impacts to cultural resources due to the construction and operation of the subtransmission line alternative routes would be less than significant with the implementation of APMs CUL-1, CUL-2, and CUL-3, and mitigation measure CUL-MIT-3.

### **4.5.2 Paleontological Resources**

Paleontological resources include fossil remains and their respective fossils sites, associated fossil specimen data and corresponding geological and geographic site data, and the fossil-bearing rock units that immediately underlie the surface. Fossils are the remains of ancient organisms that are preserved in sedimentary strata of the earth's crust. Fossils are considered an important scientific resource because of their use in: (1) documenting the evolution of particular groups of organisms, (2) reconstructing the environments in which they lived, and (3) in determining the ages of the rock units in which they occur and of the geological events that resulted in the deposition of the sediments constituting these rock units. Paleontological analysis was conducted in order to determine the sensitivity and potential presence of such resources, in accordance with CEQA (13 PRC, 2100 et seq.), and the Public Resources Code, Section 5097.5 (Stats, 1965, c1136, P. 2,792). This analysis also complies with the guidelines and significance criteria specified by the Society for Vertebrate Paleontology (SVP).

Research was conducted for the Proposed Project to determine whether sensitive paleontological resources could be affected by the Proposed Project. A literature review was conducted by E. Bruce Lander, PhD, of Paleo-Environmental Associates (Lander 2007). The literature review included the published documents and maps relevant to the region. The results of the literature review indicated that sections of the survey area had been previously studied and that paleontological resources sites have been recorded in the area. Three geological formations, the Imperial Formation, the Ocotillo Conglomerate, and the Cabazon Fanglomerate, occur within the project area. Most of the previously recorded paleontological resources were observed within the Imperial Formation.

Additionally, a review of the Paleontological Sensitivity Map of Riverside County indicates that only the Imperial Formation is considered to have a high potential to contain significant non-renewable paleontological resources.

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the rock unit producing significant fossils, and fossil localities that are recorded from that unit. Paleontological sensitivity is derived from fossil data collected from the entire geologic unit, not just from a specific survey.

A three-tiered classification system for paleontological sensitivity, recommended by the SVP and recognized in California, is listed below:

- High sensitivity – Indicates fossils are currently observed onsite, localities are recorded within the study area, and/or the unit has a history of producing numerous significant fossil remains.
- Low sensitivity – Indicates significant fossils are not likely to be found because of a random fossil distribution pattern, extreme youth of the rock unit, and/or the method of rock formation, such as alteration by heat and pressure.
- Indeterminate sensitivity – Unknown or undetermined sensitivity indicates that the rock unit has not been sufficiently studied or lacks good exposures to warrant a definitive rating. This rating is treated initially as having a high sensitivity or potential. After study or monitoring, this unit may be placed into one of the other categories.

Fossils are considered to be scientifically valuable if they meet or potentially meet any one or more of the following criteria:

- Taxonomy – fossils that are scientifically judged to be important for representing rare or unknown taxa, such as defining a new species.
- Evolution – fossils that are scientifically judged to represent important stages or links in evolutionary relationships, or fill gaps or enhance under-represented intervals in the stratigraphic record.
- Biostratigraphy – fossils that are scientifically judged to be important for determining or constraining relative geological (stratigraphic) age, or for use in regional to interregional stratigraphic correlation problems.



- Paleocology – fossils that are scientifically judged to be important for reconstructing ancient organism community structure and interpretation of ancient sedimentary environments.
- Taphonomy – fossils that are scientifically judged to be exceptionally well or unusually or uniquely preserved, or are relatively rare in the stratigraphy.

#### 4.5.2.1 Significance Criteria

Under CEQA, impacts to palaeontological resources may occur if a project:

- Directly or indirectly destroys a unique palaeontological resource or site or a unique geologic feature

#### 4.5.2.2 Applicant Proposed Measures

The following APMs would be implemented prior to and during construction, in association with the development of the Proposed Project, in areas of potential paleontological sensitivity. Where paleontological resources are found, these APMs would effectively mitigate potentially adverse impacts to paleontological resources to less than significant levels. These APMs are subject to review and may be amended.

**PA-1. Paleontological Field Assessment.** Conduct a paleontological field assessment of the finalized ROWs for the Proposed Project, as needed.

**PA-2. Paleontological Resources.** Prior to construction, a paleontologist would salvage known, exposed paleontological resources. This would consist of collecting standard samples of fossiliferous sediments.

**PA-3. Paleontological Monitoring.** A paleontological monitor would be present during ground-disturbing activities within areas designated as having a high possibility for the presence of paleontological resources. The monitor would be empowered to temporarily halt or redirected construction activities to ensure avoidance of adverse impacts.

**PA-4. Salvage and Recovery of Paleontological Resources.** Upon encountering a large deposit of bone, salvage of all bone in the area would be conducted in accordance with modern paleontological techniques.

**PA-5. Transfer of Fossils to Museum.** All fossils collected would be prepared to a reasonable point of identification. Itemized catalogs of all material collected and identified would be provided to a museum repository along with the specimens. A specimen repository would be arranged, in writing, with a museum prior to initiation of construction excavation.

**PA-6. Paleontological Reporting.** A report documenting the results of the monitoring and salvage activities and the significance of the fossils would be prepared.

### **4.5.2.3 Environmental Setting**

#### **Imperial Formation**

The Imperial Formation is exposed at Garnet Hill, at the southeast corner of the intersection of Indian and Garnet avenues, where the formation is crossed by the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1). Within this area, the formation has yielded fossilized remains representing a taxonomic diversity of late Miocene marine invertebrate taxa, including bivalvia, gastropoda, cirripedia, echinoidea, and echinoids (Dibblee 2004; Powell 1995; Proctor 1968). The formation has yielded the fossilized bones of whales on the divide between Whitewater Canyon and the northwestern end of the Coachella Valley (Thomas and Barnes 1993). In the Coyote Mountains of Imperial County, the Imperial Formation (also known as the Imperial Group) has yielded the fossilized bones of Pinnepedia, Cetacea, Sirenia, and a Camelid (Deméré 1993).

#### **Ocotillo Conglomerate**

No fossil site is recorded within the project area and vicinity where it is underlain by the Ocotillo Conglomerate (also known as the Ocotillo Formation), which underlies the northeastern margin of the project area (Remika and Jefferson 1993, 1995).

#### **Cabazon Fanglomerate**

No fossil site is recorded within the project area and vicinity where it is underlain by the Cabazon Fanglomerate, which underlies the northwestern margin of the project area, including Garnet Hill. Moreover, this formation, which consists of cobble to boulder conglomerate (Dibblee 2004), probably is too coarse-grained to contain any fossil remains.

### **4.5.2.4 Impact Analysis**

Based on the fossil occurrences, the Imperial Formation is classified as being of high paleontological importance because of its demonstrated high potential for containing scientifically important fossil remains that might be exposed by earth-moving activities. Both the Ocotillo Conglomerate and the Cabazon Fanglomerate are classified as being of low paleontological importance because of their probable low potential for containing scientifically important fossil remains that might be exposed by earth-moving activities.

Due to this analysis, only the areas that will impact the Imperial Formation need to be monitored.

In summary, impacts to paleontological resources, of the Imperial Formation, due to the construction and operation of the Proposed Project and alternatives would be less than significant with the implementation of APMs.

## **Construction and Operational Impacts**

### Proposed Devers-Coachella Valley 220 kV Loop-In

No paleontological resources were identified in this area; there would be no construction or operational impacts to paleontological resources for this segment of the project. The Devers-Coachella Valley 220 kV Loop-In would have no impact on paleontological resources.

### Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1)

One paleontological resource was identified along the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1) in the Garnet Hills. The Imperial formation that is located in the Garnet Hills contains significant vertebrate fossils. Implementation of APMs PA-1 through PA-6 would reduce construction and operational impacts to less than significant.

### Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4)

No paleontological resources were identified in this area; there would be no construction or operational impacts to paleontological resources for this segment of the project. The Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4) would have no impact on paleontological resources.

## **4.5.2.5 Alternatives**

### **Construction Impacts**

#### Farrell-Garnet 115 kV Subtransmission Line Alternative Route 2

The Imperial formation is a paleontological resource that is located in the Garnet Hills that is known to contain significant vertebrate fossils. Alternative Route 2 would require the acquisition of additional ROWs and would cross from the north side to the south side of the Garnet Hills, which would potentially impact the resource. Implementation of APMs PA-1 through PA-6 would reduce the potential paleontological resource impact to less than significant.

#### Farrell-Garnet 115 kV Subtransmission Line Alternative Route 3

The Imperial formation is a paleontological resource that is located in the Garnet Hills that is known to contain significant vertebrate fossils. Alternative Route 3 would require the acquisition of additional ROWs and would cross a small portion of the Garnet Hills along Indian Canyon Drive. Implementation of APMs PA-1 through PA-6 would reduce the potential paleontological resource impact to less than significant.

#### Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5

No paleontological resources were identified in the Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5. There would be no construction impacts to paleontological resources for this segment of the project. The Mirage-Santa Rosa 115 kV Subtransmission Line Route 5 would have no impact on paleontological resources.

## Operational Impacts

With implementation of APMs, operation of the 115 kV subtransmission line alternative routes would result in a less than significant impact to paleontological resources.

In summary, impacts to paleontological resources due to the construction and operation of the subtransmission line alternative routes would be less than significant with the implementation of APMs PA-1 through PA-6.

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