

## 3.2 CULTURAL RESOURCES

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This section presents an assessment of potential cultural resources impacts of the Proposed Project and alternatives. The information presented herein is primarily based upon a report entitled *A Class II Cultural Resources Assessment for the Desert-Southwest Transmission Line, Colorado Desert, Riverside and Imperial Counties, California*.

### 3.2.1 Affected Environment

This section provides an overview of cultural resources within the project area that may be affected by the Proposed Project or alternatives. Definitions of cultural resources and various categories of such resources are provided first, followed by a brief overview of the project area, a discussion of the data collection methods used for determining the presence and potential presence of cultural resources within the project area, a summary of the findings, and a comparison of sites and site significance along the Proposed Project and each of the alternative transmission line alignments.

#### 3.2.1.1 Definition of Cultural Resources

A cultural resource is any definite location or object of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral evidence. Cultural resources can be divided into archaeological, building and structural, and traditional resources, as described below.

##### 3.2.1.1.1 Archaeological Resources

Archaeological resources can include prehistoric and historic remains of human activity. Prehistoric resources in the Colorado Desert region can be divided into general categories for discussion. Categories include lithic scatters, quarries, ceramic scatters, temporary camps/rock rings, habitation sites, trails, and ceremonial sites. Lithic scatters represent areas where stone tools were produced and the resulting flakes of stone from tool production were left behind. Quarries represent sites where the focus was on collecting rocks to produce stone tools. Ceramic scatters or “pot drops” represent concentrations of fragments of broken pottery or ceramics. Places where prehistoric Native Americans lived are often called habitation sites or temporary camps, depending on the length of occupation. Rock rings, which are often encountered at temporary camps, are cleared circles surrounded by a line of rocks that mark the location of temporary shelters. Other prehistoric Native American sites can include trails, trail markers, and areas of rock art (petroglyphs or pictographs). Petroglyphs are images pecked or incised onto a stone surface in a patterned manner for a purpose other than material processing. Designs painted onto a rock surface are referred to as pictographs.

Archaeological resources can also include historic objects (i.e., bottles and cans), structures (i.e., remains of adobe walls, cement foundations), and sites (i.e., buried trash dumps, missions). Historic archaeological sites in the project area may include military camps, mining sites, house locations, Colorado River Aqueduct construction camps, and other historic sites related to early settlement of the area. Much of the region was used as a desert training area during World War II (WWII) and numerous military camps and training positions have been left behind.

### **3.2.1.1.2 Building and Structural Resources**

Building and structural sites can range from historic buildings to ditches, bridges, and cemeteries. Structural sites within the region include some of the transmission lines that are paralleled by the Proposed Project and alternatives. Other structural resources in the region are associated with agricultural development of the area and are represented by canals and associated features. Additional resources in the project area include historic roads and trails.

### **3.2.1.1.3 Traditional Resources**

Another type of resource is called a traditional cultural resource or traditional cultural property (TCP). Some of the most familiar examples of these resources are Native American sacred sites such as mountains or unique geologic features with traditional history or rock art sites. These resources can also include ethnic communities or traditional resources important for maintaining the cultural traditions of any group.

### **3.2.1.2 Historical Overview**

The Proposed Project and alternative transmission line alignments traverse the diverse terrain of the Colorado Desert, a subregion of the Lower Sonoran Life Zone. These areas have a long cultural history extending back over 10,000 years by archaeological reckoning and to early creation and migrations from a Native American perspective. Five Native American groups are principally associated with this area by occupation, resource use, and oral history: the Cahuilla, Chemehuevi, Mohave, Halchidhoma, and Quechan. Since the advent of Euro-American occupation, the cultural landscape has been altered through processes of travel, settlement, mining, and military preparedness.

Environmental factors that contribute to the distribution of prehistoric habitation sites include proximity to water: widely dispersed springs, oases, seasonal pans, and the Colorado River. Many of the most significant sites are located along a network of long-distance trails that lead from one water source to another, several of which were also the focus of ceremonial activities. The trail system along the Colorado River was especially significant for travel to ceremonial locations in addition to long distance travel involving trade, social interaction, and warfare. The distribution of prehistoric lithic procurement sites (quarries) and lithic scatters correlates with outcrops of rock suitable for flaked stone tool production (e.g. Alligator Rock) and milling tool production (e.g. Palo Verde Mountains). Pleistocene alluvial terraces on Palo Verde Mesa and Pilot Knob Mesa were also sources of fine-grained silicates for stone tool production. The distribution of historic sites relates to several historical patterns associated with the Colorado Desert. They include mining and roads to mining areas, homesteading, development of the Southern Pacific Railroad (SPRR), and the World War II Desert Training Center/California-Arizona Maneuver Area.

#### **3.2.1.2.1 Cultural Periods and Patterns**

Six successive periods, each with distinctive cultural patterns, may be defined for the Colorado Desert, extending back in time over a period of at least 12,000 years. They are: (1) Early Man (Malpais); (2) Paleoindian (San Dieguito); (3) Archaic (Pinto and Amargosa); (4) Late Prehistoric (Patayan); (5) Ethnohistoric and Historic Native American occupation; and (6) Historic Euro-American occupation.

### **3.2.1.2.2 Early Man (Malpais) Period (50,000-12,000 years B.P.)**

The Malpais Pattern is represented by a complex of archaeological material hypothesized to date from 50,000 to 12,000 years B.P. (Begole 1973, 1976; Davis et al. 1980; Hayden 1976). The term was originally used by Malcolm Rogers (1939, 1966) for ancient-looking cleared circles, tools, and rock alignments that he later classified as San Dieguito I. The term continued to be applied to heavily varnished choppers and scrapers found on desert pavements of the Colorado, Mojave, and Sonoran Deserts that were thought to predate the Paleoindian period of projectile point makers. Although few would refute that most of the artifacts are culturally derived, dating methods remain extremely subjective and have been assailed on numerous grounds (McGuire and Schiffer 1982). Arguments for early settlement of the Colorado Desert are further eroded by the redating of the “Yuha Man.” Originally dated to over 20,000 years B.P. based on radiocarbon analysis of caliche deposits, more reliable dates of actual bone fragments based on the accelerator mass spectrometer (AMS) method now place the burial at about 5,000 years B.P. (Taylor et al. 1985).

### **3.2.1.2.3 Paleoindian Period (San Dieguito) (12,000-7,000 years B.P.)**

Most of the aceramic lithic assemblages, rock features, and cleared circles in the general region have been assigned to the San Dieguito complex, Phase III. Most of the sites in the entire Colorado Desert are assumed to be San Dieguito. Malcolm Rogers first defined the San Dieguito complex based on surface surveys in the Colorado and Sonoran Deserts, but later refined his constructs with excavated material from the C. W. Harris site, a few kilometers up the San Dieguito River from the Pacific Coast (Rogers 1939, 1966). Rogers saw three phases of the San Dieguito complex in the Central Aspect, the area of the Colorado and Mojave Deserts, and the western Great Basin. Each phase was characterized by the addition of new, more sophisticated tool types to the pre-existing tool kit.

Current concepts concerning the lithic technology of the San Dieguito complex are based on percussion-flaked cores and the resulting debitage, but little or no pressure flaking during the first two phases. San Dieguito I and II phase tools include bifacially- and unifacially-reduced choppers and chopping tools, concave-edged scrapers (spokeshaves), bilaterally-notched pebbles, and scraper planes. Appearing in the San Dieguito II phase are finely-made blades, smaller bifacial points, and a larger variety of scraper and chopper types. It appears that the San Dieguito III phase tool kit is appreciably more diverse with the introduction of fine pressure flaking. Tools include pressure-flaked blades, leaf-shaped projectile points, scraper planes, plano-convex scrapers, crescentics (amulets), and elongated bifacial knives (Rogers 1939, 1958, 1966; Warren and True 1961; Warren 1967). Various attempts have also been made to seriate cleared circles into phases but a convincing chronological scheme has yet to emerge (Pendleton 1984).

Because of surficial nature of desert sites and the lack of chronological indicators, it has been difficult to substantiate the validity of Rogers’ phase designations as temporal indicators, that is, chronologically successive changes in the tool kit of a long-lived culture. It is conceivable that some of the variations developed contemporaneously in response to ecological or aesthetic requirements. Subsequent excavations at Rogers’ C. W. Harris site in coastal San Diego County also failed to confirm his original observation of a stratigraphic separation of Phase II and Phase III assemblages (Warren 1967). In an unstratified context, “phase” distinction may as likely be

due to economic specialization at a specific site or to sampling error, rather than to technological development. Rogers (1966) also identified different settlement patterns for each phase but as Vaughan (1982) has argued, these distinctions are inadequately defined and inconsistently applied. For these reasons, phase distinctions are difficult to make for the San Dieguito period.

The San Dieguito “culture,” as reconstructed from known complex and site associations, is a hunter-gatherer adaption consisting of small mobile bands exploiting small and large game and collecting seasonally available wild plants. The absence of milling tools from any complex has been seen as reflecting a lack of hard nuts and seeds in the diet, and as a cultural marker separating the San Dieguito culture from the later Desert Archaic culture (Moratto 1984; Rogers 1966; Warren 1967). Portable manos and metates are now being increasingly recognized at coastal sites radiocarbon dated in excess of 8,000 B.P. and in association with late San Dieguito (III) adaptation. Arguments have also been made for the presence of a developed grinding tool assemblage in earlier periods, based on finds from the Trans-Pecos area of Texas (Ezell 1984). In regard to the Colorado Desert, Pendleton (1984) remarked that most ethnographically documented pounding equipment for processing hard seeds and wild mesquite and screwbeans was made out of wood and does not preserve in the archaeological record. If milling and pounding tools from earlier time periods were also made from wood, they would seldom be preserved at open sites.

Site distributions also indicate some basic elements of San Dieguito culture settlement patterns. Sites are characteristically located on any flat area but the largest aggregations occur on mesas and terraces overlooking larger washes, or the margins of lakes. These are areas where a variety of plant and animal resources could be located and where water would be at least seasonally available.

Pendleton (1984) made a strong case, based on ethnographic analogy from Colorado River-based tribes, that San Dieguito occupation in the eastern Colorado Desert was focused on the river floodplain. She tested her model with the large array of sites and data sets in the Picacho Basin, and argued that surrounding desert areas were used only to a limited degree for special resource utilization within a foraging radius of logistically organized collecting groups.

#### **3.2.1.2.4 Archaic Period (Pinto and Amargosa) (7,000-1,500 years B.P.)**

The Pinto Complex and the Amargosa Complex are considered regional specializations within the existent hunting and gathering adaptations characterizing the Archaic period. These complexes occur more frequently in the northern Great Basin, Mojave Desert, and in the Sonoran Desert east of the Colorado River. Few Pinto or Amargosa (Elko series) projectile points have been identified on the desert pavements of the Colorado Desert. It has been suggested that the environment in the California deserts was unstable during these time periods, particularly during the so-called Altithermal period between 7,000 and 4,000 years B.P. which forced the mobile hunter-gatherers into more hospitable regions (Crabtree 1981; Schaefer 1994; Weide 1974). Some late Archaic sites are known, however, indicating occupations along the boundary between the low desert and Peninsular Ranges and at more favored habitats at springs and tanks. The most substantial Colorado Desert site is Indian Hill Rockshelter in Anza-Borrego Desert State Park where 5 feet of Archaic period deposits were excavated below a late prehistoric component (McDonald 1992). Most significant were 11 rock-lined cache pits and numerous hearths indicative of either a residential base or temporary camp in which food storage was integral to

the hunting and gathering settlement-subsistence strategy. Also recovered were numerous Elko Eared dart points, flaked and milling stone tools, and three inhumations, one of which was radiocarbon dated to 4,070 ± 100 years B.P. Two similar rock-lined pits were excavated at a small rockshelter in Tahquitz Canyon near Palm Springs (Bean et al. 1995). The small quantity of artifacts at that site suggested strategically stored food and seed processing equipment that was used by small mobile groups. More recently, a late Archaic period campsite was also identified in 26 ½ feet deep dune deposits adjacent to the north Lake Cahuilla shoreline (Love 1996). Radiocarbon dates of almost 3,000 years B.P. and associated bird and fish bone confirm a late Archaic period Lake Cahuilla occupational horizon. Additional Archaic sites certainly lie buried under alluvial fans and wash deposits, sand dunes, and Lake Cahuilla sediments, as they must under Colorado River Valley alluvium.

### **3.2.1.2.5 Late Prehistoric Period (Patayan) (1,500-100 years B.P.)**

The Late Prehistoric period is divided into four phases, including a pre-ceramic transitional phase from 1,500 to 1,200 years B.P. The major innovations of this period are the introduction of pottery making by the paddle-and-anvil technique and bow-and-arrow technology around 1,200 years B.P. and the introduction of floodplain agriculture about the same time (Rogers 1945). Exact dating of early domesticates is lacking (Schroeder 1979). Both these technological advancements were introduced from either Mexico or through the Hohokam culture of the Gila River (McGuire and Schiffer 1982; Rogers 1945; Schroeder 1975, 1979). The flooding of Lake Cahuilla, referred to above, corresponds to Patayan II, 950-300 years B.P. Previous studies suggested that the final recession of Lake Cahuilla occurred around A.D. 1500 but recent research demonstrates that a fifth in-filling occurred between A.D. 1600 and 1700 (Laylander 1997; Schaefer 1994).

Between A.D. 1000 and 1700, desert people of this region shifted focus somewhat from the Colorado River floodplains to a more mobile, diversified resource procurement pattern with increased travel between the Colorado River and Lake Cahuilla (Pendleton 1984). Long-range travel to special resource collecting zones and ceremonial locales, trading expeditions, and possibly some warfare are reflected by the numerous trail systems throughout the Colorado Desert. Pot drops, trail-side shrines, and other evidence of transitory activities are associated with these trails (McCarthy 1982, 1993). In fact, all the alternative alignments parallel important transportation corridors, either between the Colorado River and the desert interior (Proposed Project and Alternatives A and C) or along the Colorado River (Alternative B).

Several pottery types appeared during the same time period (Waters 1982a, 1982b). Many of the pictographs, petroglyphs, and bedrock grinding surfaces in the Colorado Desert have also been associated with the Patayan pattern, although direct dating and cultural affiliation of such features is difficult to determine. It was also in this period, and possibly in the Archaic period, that specific volcanic and sandstone rock outcrops along the Colorado and Gila Rivers were exploited for the manufacture of stone pestles and portable milling slabs (Schneider 1993, 1994). With the recession of Lake Cahuilla, the Patayan III phase emerged, with a returned reliance on the Colorado River floodplain and some floodplain agriculture along the New and Alamo rivers, in a mixed horticulture/hunter-gatherer economy.

### **3.2.1.2.6 Native American Ethnohistoric and Historic Occupation (450-100 years B.P.)**

Among the ethnohistorically documented tribes, syntheses have been prepared for the Quechan (Bee 1981, 1983, 1989; Forbes 1965; Forde 1931), the Maricopa and Halchidhoma (Harwell and Kelly 1983; Spier 1933), the Mohave (Kroeber 1925; Stewart 1983), and the Chemehuevi (Kelly and Fowler 1986; Laird 1976, 1984). An important and detailed discussion of Yuman ethnobotany, agriculture, and land use patterns has been compiled by Castetter and Bell (1951), with additional summaries by Pendleton (1984) and Woods (1982), and a summary of Colorado Desert ethnographies by Knack (1981). Quechan oral history also establishes their residence in this location since a migration after the beginning of creation.

### **3.2.1.2.7 The Colorado River Peoples: The Quechan, Halchidhoma, and Mohave**

The first historic accounts of the traditional inhabitants of the Lower Colorado River were made by Spanish and, later, American explorers. The first professional anthropological account of the lower Colorado Yuman groups was prepared by Kroeber (1920, 1925), who conducted extensive fieldwork, particularly among the Mohave in the Needles area between 1900 and 1910. Because these groups were so successful in keeping Spanish missionaries out of their territory and because of their relative spatial and cultural isolation from Euro-Americans for a long period, the Colorado River Yumans maintained their language, religion, and cultural practices to a much greater degree than most coastal California groups. Early ethnographers in the period between 1900 and 1950 were able to record a rich oral literature and reconstruct pre-contact lifeways to a considerable degree. Many aspects of traditional technology such as ceramics, flaked and ground stone tool production, etc., have been lost, however, due to the rapid adoption of western material culture. Yuman emphasis on spiritual concerns over material things and a preoccupation with warfare meant that a rich oral tradition of myths, epic stories, and battle narratives were still extant at the beginning of this century and continue to the present.

The Lower Colorado River area was one of shifting tribal territory and tribal boundaries in ethnohistoric times due to inter-tribal warfare (Forbes 1965). When Díaz and Alarcón sailed up the lower Colorado River in 1540 he described a situation of incessant warfare. The Quiquima (Quicoma) and Koxwan or Ciana (*koxkha'n*) that he mentioned cannot be identified but may be the Quechan or Kouanas. During Oñate's 1605 expedition, he found the Halchidhoma living south of the Gila River confluence, along with the Kouanas and Halyikwamais. Oñate traveled up the east side of the river and encountered the Ocaras (Ozares or Oseres) just north of the Cogwana (probably the Kouanas). They were described as people of a different language who made cotton mantas. These may have been the Opas, a Piman group, who like so many others, moved east to assimilate into the Maricopas on the middle Gila River. Oñate failed to mention the Quechan who presumably lived exclusively on the west side of the river at this time. Quechan territory may have extended from just south of the Gila River-Colorado River confluence north to at least Palo Verde and Cibola Valleys and probably as far north as the Big Maria and Riverside Mountains where they abutted Mohave territory. Oñate did encounter the Mohave near the juncture of the Colorado River and the Bill Williams River, and at points to the south.

Almost a century passed until Jesuit missionary Eusebio Francisco Kino's 1700 and 1701 visits to the juncture of the Gila and Colorado Rivers. The Yuma crossing area was again visited by the 1774 Anza expedition bringing settlers from Sonora to California. During the second Anza Expedition of 1775-1776, Franciscan missionary Francisco Garcés left the expedition at Yuma and explored the Colorado River as far north and east as the Hopi mesas. Garcés was the first to be guided along the so-called Mojave trail that proceeds north from Pilot Knob on the western side of the Cargo Muchacho Mountains and the Big Maria Mountains, within the southern half of the project area, as well as routes along the river. His are some of the first detailed descriptions of the Halchidhoma and Mohave.

But by the time of the Anza Expeditions in 1774-1776, the Halchidhoma were found to have moved north between the Quechan and Mohave territories from the Palo Verde Valley to the area just below Parker. North of the Halchidhoma were the Mohave with their major population center in the Mohave Valley. It appears from historical accounts and Yuman oral histories that the Halchidhoma were in an almost constant state of war with the Quechan and Mohave who were united in an alliance against them, presumably with the ultimate goal to drive them off the Colorado River and the territory that they had relinquished to them. The Halchidhoma, in turn, established alliances with the Delta Yumans, Maricopa, and Cahuilla, among others, in their efforts to maintain their territory. Eventually the Halchidhoma could no longer withstand the two-pronged attacks from the north and south. They gradually moved off the river to join their kindred Yuman groups in Maricopa territory on the Gila River by way of a temporary stay in northern Sonora. By around 1825-1830 they had mostly left the Colorado River, with the last families leaving by 1840. The Quechan then proceeded to move up and the Mohave moved down into the vacated territory. Warriors of the Quechan-Mohave alliance, however, met a defeat in 1857 from which they never recovered. They traveled up the Gila River in what was supposed to be a surprise attack on the Maricopa, who received advance warning and solicited the aid of mounted Pima warriors (Dobyns et al. 1963). The Quechan suffered the greatest casualties in that encounter, which hastened the end of their military power on the river (Dobyns et al. 1963; C. Kroeber 1980; C. Kroeber and Fontana 1986).

No complete ethnography of the Halchidhoma as they lived on the Colorado River exists because they left to be assimilated into the Maricopa more than a half century before any detailed study could be prepared. Today the Halchidhoma are most closely associated with the Laveen community on the Salt River Reservation in Arizona, although descendants are distributed over several reservations (Harwell and Kelly 1983). Spier (1933) was fortunate to have had a Halchidhoma elder as the principal informant for his landmark study of Gila River Yumans. By this time, however, many elements of Piman and Maricopa culture had been adopted, but some valuable information could be derived concerning oral traditions. It can be assumed, however, they were very much like the Quechan and other Hokan-speaking neighboring groups when they occupied the Colorado River. Many of these general characteristics apply also to the Mohave. The following description of "Yuman" society would apply in principle to all the Hokan-speaking lower Colorado River groups.

Spanish-Quechan interactions increased after Fr. Eusebio Kino's first visit in 1700 until two settlements with attached missions were established around 1799 north of the Gila River confluence. These efforts results from Spanish knowledge that the Colorado River crossing there was of strategic importance and Quechan goodwill needed to be cultivated. Conflicts with the

settlers over natural resources, however, led to an 1801 uprising during which both settlements were destroyed. Except for a few military and civilian interactions, alien influence among the Quechan ceased until the American period.

Euro-American settlers confronted the Yumans for the first time with the advent of the Gold Rush in the 1850s. Hostilities ensued, resulting in the U. S. Government establishing Fort Yuma in 1852. Fort Mohave was built in 1859 after an attack on the Beale's Road immigrant trail that was established through Mohave territory two years earlier. In 1860, the much better armed U. S. Army defeated the Mohave, who had been substantially weakened by the previous defeat against the Maricopa in 1857 as well as by extended famine periods on the river. This episode proved to be the last major conflict between Indian and Anglo in the region (Sherer 1994). The Quechan were restricted to a small reservation near Yuma, and the Mohave returned to their traditional lands in the Mohave Valley. In 1865, the government established the Colorado River Indian Reservation for the Mohave, as well as the upland Yuman groups, the Yavapai and Hualapai. Other Mohave were relocated to the Fort Mohave Reservation in 1870 under extremely poor conditions.

The focus on riverine subsistence resources encouraged a mixed foraging way of life for the river Yumans; small-scale agricultural practices supplemented foods procured by seasonal rounds of hunting, fishing, and gathering. According to Bee (1983), the Mohave relied more heavily on agriculture than did the Cocopa or the Quechan. In their study of Yuman agricultural strategies, Castetter and Bell (1951) estimated that about half of the Mohave diet derived from farming. They estimated that the Cocopa, by contrast, derived only about 30 percent of their diet from agriculture because of greater access to a diversity of habitats; the Quechan (and presumably Halchidhoma) diet was somewhere between the two groups (Bee 1983).

It appears that agricultural strategies were designed to optimize use of floodwaters to bring the necessary moisture to the fields, which tended to be quite small in size (two to three acres). Cultivated crops included maize, beans, squash, melon, and various semi-wild grasses. Seeds were planted in newly deposited sediments after the floodwaters had receded. The river Yumans used more than 75 wild plant foods as food sources, the most important being mesquite and screwbean. The primary source of dietary protein came from fish caught in the Colorado River. Among the more important species were the humpbacked sucker and Colorado pike minnow. Regularly hunted game included small mammals such as rabbits, squirrels, and pack rats. Larger game that figured in the diet included deer and bighorn sheep, which were probably hunted with less frequency and were less abundant than small game. Their meat was, however, highly regarded by the river Yumans, particularly in winter, when reliable sources of dietary fat were in especially short supply.

Swarthout and Drover's (1981) Model II characterizes the Quechan and Halchidhoma settlement and subsistence strategy on the Colorado River below Topoc. This model presumes a much lower reliance on cultigens, accounting for no more than 30 to 40 percent of the annual dietary intake (Castetter and Bell 1951). Residential bases were also centered on the Colorado River but conform to a bimodal pattern. Spring and summer houses were located near each field, but on the mesas, safe from floods (Kelly n.d.), while open-air ramadas were constructed on the floodplains adjacent to the fields.

During this time, small parties sought out wild vegetal resources along the floodplain and adjacent washes. Mesquite and screwbean were also important staples that were relied upon as stored staples during the winter months, especially if domestic crop harvests were inadequate. The winter season was a time to relocate to residential bases on upper Colorado River terraces, lower bajadas, and lower mountain slopes. Winter homes were more substantial earth-covered lodges (Kelly n.d.). The population subsisted on stored domestic and wild foods, in addition to what wild game could be had. Additional temporary camps would be established in outlying areas for extracting specific animal, vegetal, or lithic resources. The population would then resume their lower terrace residences as soon as the spring floods had subsided.

Yuman groups were organized into patrilineal, exogamous, totemic clans (referred to as sibs in the early literature). Each clan or *cimul* was named after a plant, animal, or natural object and this name was borne only by female members (Gifford 1918). There were no clan leaders and the clan did not have special ceremonial or socio-political functions. Clans also were not localized at specific rancherias which contained members of several clans. Each localized rancheria or band recognized a leader (*pi'pa taxa'n*) who was called on to settle disputes, be responsible for the social and economic welfare of his people, decide on seasonal moves, and to determine when to move the entire rancheria if necessary. His power was quite restricted and he had limited influence. His position was achieved through dreaming, force of character, and demonstrated ability. Each tribal group also recognized a paramount chief (*kwoxot*) who might rise from the ranks of the rancheria leaders. This position may have become more important in historical times as a result of contact with Euro-American political and military institutions. Prowess in warfare was not required and indeed he was expected to remain in the village or refrain from battle. Special war leaders (*kwanami*) were recognized for that task.

Unlike other southern California groups where the primary political allegiance and identity was to the localized and territory-based band, members of each tribal group (Quechan, Halchidhoma, Mohave, etc.) on the Colorado River thought of themselves as belonging to a consolidated people who lived as a true nation within their entire territorial limits. Steward (1955) postulated that Yuman clans evolved from localized patrilineal lineages (like those found among the Cahuilla) which became dislocated and clustered into larger settlements. This resulted from higher population densities afforded by the introduction of horticulture. Growing population size in other areas of southern California brought about increased localization of bands, but instead of increased band size there was shrinking of band territories. This was not so on the river where people moved freely from one settlement to another. Entire settlements also shifted within the confines of the Colorado River floodplain depending on the location of arable land after each flood season. Steward identified warfare as a factor inhibiting the localization of clans and promoting increases in band size. This afforded greater protection against raids and ensured a unified military response to enemy attacks.

The apparent emphasis on warfare in Colorado River Yuman culture has led to considerable discussion of its cause. White (1974) emphasized the ecological reasons for warfare due to environmental circumscription, high population densities, and periodic environmental perturbations. Gifford (1931), Kroeber (1980), and Kroeber and Fontana (1986) stressed the deeply ingrained ideological and cultural values attached to personal battle in Yuman culture. They argue that fighting was seen by its participants as a necessary means to enhance the spiritual power of the entire tribe without regard to material benefits. In fact, probably both

aspects operated to shape the Yuman warrior tradition over time. Both ecological and cultural/ideological factors are intertwined in a complex and dynamic system, much as demonstrated for the role of warfare among New Guinea tribes people.

It is difficult to faithfully portray the complexity and esoteric nature of Yuman spirituality because it is a dynamic belief system in which dreaming, adherence to traditional learning, personal experiences, and varying patterns of acculturation effect its expression. This world view stresses the interconnection of daily life with religion, unlike western industrial society where the sacred and secular are more clearly segregated. The secular world exists concurrently with the spiritual world for traditional Yumans, and the latter can be experienced through dreams, vision quests, song cycles, the telling of the creation narrative, and many other oral traditions (Hinton and Watahomigie 1984; Kroeber 1925, 1948). The primacy of dreaming for the Mohave and Yumans was well stated by Kroeber:

The Mohave validate what happens in their lives by referring it to their dreams. Success in life, the fortunes of a person or of a career, are believed to be the result of what one has dreamed. A Mohave dreams among other things--or perhaps above other things--of the beginnings of the world in the far distant past.

He dreams of being present at the creation and witnessing its events. Thereby he participates in them and gets certain knowledge: powers for war, for curing, for success in love and gambling. Such mystically dreamed powers are what really count in human life, the Mohave firmly believed. Over most of native North American the acquisition of power by dreams or visions of spirits is the basis of shamanism. The Yuman tribes, however, have evolved the special belief that the visions are not of the spirits of now, but of the spirits and great gods of the beginning of the world. This group of tribes in their philosophy transcend time and project their souls back to the origins of things. This act they call dreaming. The basic and most significant dreams are not those of last night or of one's adolescence, but those which one had before birth--while still in the mother's belly, they say. It is these prenatal dreams which the newly born baby and the child may forget, but which come back to the growing boy and to the man when he hears other singing or telling similar experiences. As they see it, the tribal mythology is thus first learned by personal participation in it as an unborn soul. Secondly, it is strengthened, clarified, and perhaps adjusted by what one learns from others (Kroeber 1948).

So too does the prehistoric and historic past exist as a continuum with the present, as all things harken back to the creation. Most of the groups identify *Avikwami* in the Newberry Mountains near Needles as the emerging point of the creator, *Kikummat*. Second in importance was *Akikwalal*, Pilot Knob near Yuma. A symbolic journey with four major stops between these locations was undertaken in a special *keruk* or memorial ceremony that was held in remembrance of the first cremation that was given by the culture-giver, *Kumastamxo*, for his father (Ezzo and Altschul 1993). This great epic is told in the creation narrative over several nights. This profound and intricate account explains the origin of all things, practices, and peoples.

### 3.2.1.2.8 The Cahuilla

The western portions of the Proposed Project and Alternatives A and C are located within the ethnographic boundaries of the Cahuilla Indians. Ethnographic and ethnohistoric studies of the Cahuilla have been documented by Barrows (1900), Bean (1972), Bean and Saubel (1972), Curtis (1926), Drucker (1937), Heizer (1974), Hooper (1920), Kroeber (1908), Patencio (1943), and Strong (1929). Bean (1978) has summarized much of the information on the Cahuilla.

Cahuilla and related Takic (“Shoshonean”) speakers of the Uto-Aztecan linguistic stock such as the Luiseño, Serrano, and Gabrieleño, migrated from the southern Great Basin into California to displace the groups who had been occupying those territories. Those displaced groups are presumed to be the ancestors of the modern Hokan speakers who now occupy the areas to the south (the Kumeyaay) and the north (the Chumash). The specific time, duration, and process of this migration remains unclear (Koerper 1979; Moratto 1984). Some estimates based on glottochronology and distribution of archaeological assemblages put the transition somewhere between 1,000 to 2,000 years B.P., mostly likely around 1500 B.P. (Kroeber 1925) but possibly as early as 2500 B.P. (Bull 1977). What role these Takic speakers had in the development of the Patayan pattern in the Colorado Desert remains unclear. The ancestors of the Colorado River Yumans are most often identified as the source of ceramic, cremation practices, agriculture, some architectural forms, and some stylistic and symbolic representations. The Takic migrations may coincide with the introduction of bow-and-arrow technology but no direct association can be made. They may have contributed specific hunter and gatherer techniques as well as cosmological and symbolic elements to the Patayan cultural system.

The Santa Rosa and San Jacinto Mountains and the Coachella Valley are at the center of Cahuilla territory. Some dozen or more independent, politically autonomous land holding clans owned territory within the area. Each of these territories ranged from the desert or valley floor to mountain areas within which several biotic zones existed. Clans included one or more lineages, each of which had an independent community area which it owned within the larger clan area. Cahuilla oral histories also indicate that some clans replaced others, often by force, and also that new lineages would bud off from clans to establish new territories. Cahuilla mythology and oral tradition also indicate that when Lake Cahuilla dried up, it was the mountain people who resettled the desert floor. By 1850, at least 17 rancherias are known in the Coachella Valley, most associated with hand-dug wells, springs, or palm oases. Reservoirs, irrigation ditches, and agricultural fields are documented at least as far back as the early 19<sup>th</sup> century (Wilke and Lawton 1975).

In addition to residence areas of each lineage, and locations within a clan territory which it owned in common with other clan members, each lineage had ownership rights to various food collecting, hunting, and other areas. Individuals also owned specific areas or resources, e.g., plant foods, hunting areas, mineral collecting places, and sacred spots used only by shamans, healers, and ritual practitioners.

While villages were occupied year-round, a large number of inhabitants would leave at specific times to exploit seasonally ripening foods in different environmental zones. Temporary camps would be established in these food collecting areas and surpluses would be transported back to the main village. Mountain Cahuilla would move to the upper desert areas and establish

temporary camps to process agave in late winter-early spring and then move to lower desert areas to harvest mesquite beans in the late spring. Conversely, the Desert Cahuilla ascended the mountains in the fall for the pinyon and acorn harvests. Other springtime resources included yucca, wild onion, barrel cactus and other cactus fruits, goosefoot, and grass seeds. Other major upper desert resources collected in summer included berries, manzanita and wild plum. Fall was also the occasion to gather grass seeds, chia, saltbush seeds, palm tree fruit, thimbleberry, wild raspberry, juniper berry, and choke berry. Any number of animal resources were also hunted, with bighorn sheep and deer hunts often coinciding with the pinyon harvest. Rabbits were the most common game animal throughout the year.

Bean and Saubel (1972) estimate that no village was located more than 16 miles from all food gathering areas within its territory and that 80 percent of all food resources could be found within a 50-mile optimal foraging radius of the village. Such ideal proximity to diverse habitats was made possible by the steep gradient on the eastern side of the San Jacinto and Santa Rosa Mountains.

These clans varied in population size from one hundred to several thousand people. They were arranged so that each community was placed in an area near significant water and food resources. Within each community, generally several miles from each other, houses and structures were spatially placed at some distance from each other. Often a community would spread over a mile or two in distance. Each nuclear and extended family had houses and associated structures for storage of food, and shaded work places for tool manufacture and food processing. Each community contained a house of the lineage or clan leader: the *net*. The position was often hereditary within families of high social status. The *paxa* was another hereditary position with responsibilities for managing ritual events. Other important ceremonial positions included the shaman (*púØ*), singer (*háwaynik*), and diviner (*tetŞayawiš*). There were also a number of non-official ritual practitioners.

A ceremonial house (*kišŞimnawet*) was placed within each community. Most major religious ceremonies of the clan were held in them. These were held with considerable frequency. The most significant ceremonies focused upon the proper care of the deceased members of the lineage or clan. In addition to house and ceremonial structures, storage granaries, sweat houses, and song houses (for recreational music) were present. Close to each community were many food resources, building materials, minerals, and medicines. Usually an area within one to three miles contained the bulk of materials needed for daily subsistence, although territories of a given clan might be larger, and longer distances were traveled to get precious or necessary resources, usually at higher elevations. While most daily secular and religious activities took place within the community, there were places at some distance from the community where people stayed for extended periods of time (e.g. acorn or pinyon groves). Throughout the area there were sacred places used primarily for rituals, intergroup inter-clan meetings, caches for sacred materials, and locations for use by shamans. Generally in hilly, rocky areas, cave sites or walled cave sites were used for temporary camping, storage of foods, fasting by shamans and as hunting blinds.

The Desert Cahuilla became familiar with Europeans as early as 1797. Often their relatives in western Cahuilla areas were baptized and worked among the Spanish. In addition, runaway neophytes sought refuge among the desert tribes. The impact of the Spanish mission system and colonization along the coast was much less immediate and profound to the isolated desert and mountain groups. More direct influence was not felt until after the establishment of the San

Bernardino *estancia* in 1819 and thereafter, a cattle ranch at San Gorgonio. When the Romero Expedition passed through the area in 1823-1824, it was clear that the Cahuilla were used to seeing vaqueros employed by the rancho driving cattle through the area. Certainly by 1823 they were not only familiar with Hispanic ways but were comfortable in dealing with them, as evidenced by their reaction to the members of the Romero Expedition in 1823 (Bean and Mason 1962). The Romero expedition also reported that the Cahuilla at Toro were engaged in agricultural pursuits (growing corn and melons) and were already familiar with the use of horses and cattle.

Political leadership became more centralized in the Spanish and Mexican periods as high ranking or charismatic clan leaders were recognized by Europeans as representing entire tribal areas (Strong 1929). Emerging as central figures were Juan Antonio among the Mountain Cahuilla and Chief Cabazon in the desert. As early as 1844, Juan Antonio led several mountain clans to the San Gorgonio pass area to provide security for San Bernardino Rancho. His group played a significant role during the Mexican-American War, siding with the Mexicans against the Luiseño who supported the American invasion (Philips 1975).

The 1848 Treaty of Hidalgo obligated the Americans to preserve the liberty and property of the inhabitants of California. The U.S. government in 1850 appointed three commissioners to conduct negotiations with tribal leaders across California to settle all land rights issues. One of the 18 treaties to be drafted covered the Cahuilla, Serrano, and Luiseño and was signed in Temecula on January 5, 1852. The tribal leaders were promised supplies, food, and technical training in return for accepting specified reservation lands. But as was so often repeated throughout the west, local Euro-Americans lobbied against the treaty and it was never ratified by Congress. The effect was to further alienate the traditional territorial base of the Cahuilla as whites flooded into the area to claim the best farming and grazing lands.

European diseases were probably beginning to take their toll on the Cahuilla in the early 1800s but became particularly severe in the 1860s. The most dramatic was the great smallpox epidemic of 1863 that killed Juan Antonio as well as many bearers of tribal wisdom and culture. Survivors of previously autonomous clans assembled into the remaining villages or founded new settlements in an accelerated process of population aggregation and reorganization. This process continued through the following decades.

The Cahuilla land base was substantially reduced in the 1860s and 1870s as the federal government ceded every other section within ten miles of the new transcontinental railroad to the railroad companies. Sections 16 and 36 of every township were also removed from federal control as a school tax base. Any defacto control of larger territorial bases was completely eliminated in 1876 when President Grant by Executive Order set aside small reservations for all groups classified as "Mission Indians". This included the sections or parcels in which they had aggregated in the previous decades and in which they had made improvements for farming, etc. The following year, another Executive Order by President Hayes set aside every even numbered section and certain other unsurveyed portions of townships for Indian reservations. The result was a checkerboard of Indian-controlled land, encompassing 48 sections, spread across the eastern edge of the Santa Rosa and San Jacinto mountains and the Coachella Valley (CSRI 1983). With various additions and withdrawals over time, this has remained the permanent home of the Cahuilla to the present. (The Proposed Project and Alternatives A and C routes crosses two sections of land on the Agua Caliente Indian Reservation.)

As traditional lifeways became more difficult to pursue, the Cahuilla adapted to their new geographical and political environment by taking jobs in American ranches, towns, and cities. The 1860s through 1880s was a time of increased acculturation as new technologies, material goods, and practices were incorporated into the traditional lifeways of the reservation. Ceremonial practices remained particularly strong despite Catholic and Protestant influences on the reservations. Ceremonial houses still existed through the 1950s, 60s and early 70s and many cultural traditions remain part of westernized lifestyles. The Cahuilla still retain an acute interest in the cultural heritage and cultural resources of their traditional territories.

#### **3.2.1.2.9 The Chemehuevi**

The western and central portions of the Proposed Project and Alternatives A and C fall within Chemehuevi use areas (Laird 1976, 1984). East of the Cahuilla, north of the Quechan, and south of the Mohave were the Chemehuevi. They are southern Paiutes (Numic branch of Uto-Aztecan language family) who entered the Basin-and-Range province west of the Colorado River Valley from Blythe to Needles and as far west as Bristol Dry Lake near Twenty-nine Palms. Although the time of their entry into the Colorado and Mojave Deserts remains unclear, it was probably in the period between A.D. 1200 and A.D. 1500 when their brown ware ceramics and twined basketry become apparent in archaeological sites (Kelly and Fowler 1986). The Chemehuevi lived in smaller and more mobile groups than the Cahuilla or Yumans to adapt to the sparser and more widely distributed resources of the desert. They subsisted primarily on small game and a wide variety of seasonally available wild plants. Seed plants were especially important. They were part of the Mohave-Quechan alliance and were allowed plots of land to cultivate crops in Mohave territory. One of Isabel Kelly's consultants related that most Chemehuevi did not begin to move down to the river until after 1833 and before the founding of Fort Mojave in 1859 (Kelly n.d.). This would have been the time that the Halchidhoma left the river. As a result of their close association, the Chemehuevi share some elements of material culture with the Mohave, such as ceramic styles, square metates, some earth-covered house forms, storage platforms, song series, dream emphasis, warfare patterns, and personal adornment. Other aspects are distinctively Great Basin, such as their extremely fine basketry. The Chemehuevi also distinguish themselves from their Yuman neighbors by their much different mythology and world view, religious practices, kinship system, and political organization. Like the Yumans, the Chemehuevi were great travelers and visited regularly with the Kawaiisu, Serrano, Vanyume, Cahuilla, Quechan, and Kumeyaay. They might have even visited the coast to trade. They also occasionally joined the Quechan and Mohave in battles against the Halchidhoma. When the Halchidhoma finally left the river by 1840, the Chemehuevi also made use of some of the vacated river valley, particular the Parker and Chemehuevi valleys. But hostilities broke out between the Chemehuevi and Mohave between 1865 and 1871 when the Mohave began moving south to inhabit the newly created Colorado River Reservation. The Chemehuevi retreated westward into the desert where they took refuge with the Cahuilla near Banning and in the Coachella Valley, and with the Serrano at Twenty-Nine Palms. Additional land was added to the Colorado River Reservation in 1874 to encourage the Chemehuevi to move there from preferred residential areas near Blythe, Needles, Beaver Lake, and Chemehuevi Valley. Both peaceful and forceful efforts by the U.S. Government to move the Chemehuevi onto the reservation were met with mixed results and it was not until the early 1900s that they agreed to move.

### **3.2.1.2.10 Historic Euro-American Periods**

The following discussion of the last two centuries of Euro-American history focuses extensively on those periods for which cultural resources are represented in the project area or which are likely to be found in the project area. This includes mining sites and transportation routes leading to the mines, and World War II era military training sites.

#### **3.2.1.2.11 Mining**

The first mining efforts took place in the Cargo Muchacho Mountains (hardrock) and Potholes (placer) areas in 1780-1781, contemporary with the first short-lived missionary efforts at the confluence of the Gila and Colorado Rivers. Extensive mineral exploration began in the early 1860s with miners looking for new discoveries as the Mother Load Country in the Sierra Nevada Mountains was played out. One of the first and largest mining booms was in the La Paz and Castle Dome districts on the Arizona side of the river opposite Blythe. Miners from California and Sonora, Mexico, poured into the area in the early 1860s and 1870s. The greatest period of activity was in the 1870s through 1890s and was facilitated by the SPRR reaching Yuma in 1877 and links north on the river provided by commercial river boat traffic (Vredenburg et al. 1981).

Construction of Laguna Dam in 1908 put an end to the steamboat connection with Yuma but prospects and mines continued to develop through the early 20th century as the growing railway network and the automobile provided access to more remote areas and made for more economical transport of supplies and partially processed ores. Large and small operations were particularly numerous during the depression years. Most gold and silver mining ceased at the end of 1942 because of the World War II ban on non-strategic mineral mining (Limitation Order L-208). Mines that extracted iron, zinc, manganese, and gypsum flourished during this period. When mining of precious metals began again after the war, it was on a larger industrial scale and with the application of improved chemical extraction methods. Some of the older major hardrock and dry placering operations were transformed into heavily capitalized open pit operations with vast cyanide leaching fields. Examples can be found at Mesquite Mine, Tumco/Hedges, and the American Girl mines that replaced late Victorian era mining towns. Major archaeological studies derived from the environmental assessments at these sites demonstrate the historical and research values of such cultural resources (Burney and Van Wormer 1993; Hector 1988).

Specific to the project area (Proposed Project and Alternatives A and C), early prospects are known from Mule Mountains in 1861 and in the Big Maria Mountains and neighboring McCoy Mountains as early as 1862 when they were part of the Ironwood Mining District (Vredenburg et al. 1981; E. Warren et al. 1981). The Big Marias, originally called the Half-Way Mountains by the 1858 Ives expedition, were referred to as the Chemehuevi Mountains on maps from the 1860s (Gunther 1984). It was probably in this period that portions of the Big Marias, the McCoy Mountains (named after prospector William McCoy), and the Palen Mountains (named after prospector Matt Palen) were included in the Chemehuevi Mining District (Vredenburg et al. 1981; C. Warren et al. 1981). By 1909, the so-called Chemehuevi Mountains were christened the Santa Marias and divided into the Big Maria (east) and Little Maria (west) mountains. Mineral deposits include gold, silver, fluorite, manganese, copper, gypsum, and uranium (E. Warren et al. 1981).

In the Southeastern Chocolate Mountains Area (Alternative B), placer mining of gold, silver, lead, and copper goes back to the Spanish and Mexican periods but almost all physical traces date to the late 19<sup>th</sup> and 20<sup>th</sup> centuries when the SPRR and then the automobile improved accessibility. It was in this period that hard rock mining was initiated on larger scales in the Cargo Muchacho and Chocolate mountains (Vredenburg et al 1981). Many of the small placer mine claims on Pilot Knob Mesa (Mesquite Mining District) were worked at the turn of the 20<sup>th</sup> century by residents of the mining town of Hedges on the eastern side of the Cargo Muchacho Mountains. Water was piped from Glamis for wet placering. Remnants of some of these operations, dating between 1910 and 1917, were excavated by Shackley and Van Wormer (1989) in the vicinity of Alternative B along SR-78. Mining ceased between 1917 and 1938, when the Desert Gold and Aluminum Company initiated large scale placer mining using well water for gravity separation. Small scale dry placering was also undertaken with minimal success. Beginning in the 1980s, the Gold Field Mining Corporation started the large Mesquite Mine, a hard rock cyanide heap leach operation.

#### **3.2.1.2.12 Transportation: The Bradshaw Trail and the Southern Pacific Railroad**

Among the two most important routes of travel within the study area are the Bradshaw Trail and the SPRR. They are representative of nexus between transportation and the opening of the American West for capitalist ventures and settlement (Warren and Roske 1981). Some of the 49'ers followed the Southern Immigrant Trail that parallels the Spanish Anza Expedition route, itself a Native American trail. Other native trail systems and new routes were developed for Euro-American access into the Colorado Desert as the lure of mineral resources overcame general perceptions of the desert as a hostile and barren place to cross, not inhabit. Many of these earliest routes were mapped by the U. S. Government Land Office surveys of townships in the most accessible areas, beginning in 1853.

Alternative B crosses the Bradshaw Trail between Mileposts 8 and 9 (Mileposts for the Proposed Project and Alternatives are identified on the maps included in Appendix J, Map Volume). Unlike the SPRR that stimulated mining in the desert, it was a gold rush on the Colorado River that caused the development of the Bradshaw Trail (Gunther 1984; Johnston 1972, 1987). After the Mother Lode in the central Sierra Nevadas had begun to play out, prospectors spread south in the hope of finding new strikes. One such important discovery was made by Powell Weaver on January 12, 1862, on the eastern bank of the Colorado River north of what is now Ehrenberg, Arizona. A gold rush ensued that created the boom town of La Paz (previously Potholes). No good overland route to the gold field from the Pacific Coast existed at the time and William D. Bradshaw, another 49'er working in San Bernardino County, took it upon himself to find a reliable route in the Spring of 1862. Relying on information provided to him by the leader of the Desert Cahuilla, Chief Cabazon, and an unnamed Maricopa Indian who had joined Cabazon, Bradshaw mapped a route that followed an ancient Indian trail across the Colorado Desert, from one water hole to the next. From the San Gorgonio Pass the route passed through Palm Springs, Cathedral City, Indian Wells, south through Toro and Martinez, across the north side of the Salton Sink to Dos Palmas, and then through passes between the Oropocia Mountains to the North and the Chocolate Mountains to the South. Following the south side of the Little Chuckwalla Mountains, past Chuckwalla Well and Mule Spring, the route crossed through the Mule Mountains and up Palo Verde Mesa near Blythe to the Colorado River.

Bradshaw published his report in the *Los Angeles Star* on June 14, 1862. Late that year, Hubert Howe Bancroft published a map of the route in his *A Guide to the Colorado Mines* and dubbed the eastern half past Dos Palmas “The Bradshaw Trail”. Within two weeks of Bradshaw’s 1862 report, a succession of pack trains were following the trail and regular stage coach service was also in place that same year. Smallpox and/or measles epidemics were already claiming many Cahuilla lives by the time the Bradshaw Trail opened, but it may well have exacerbated the problem by bringing so many Euro-Americans in direct contact.

A stage line continued to operate along the Bradshaw Trail until the end of 1879, several years after service began on the SPRR. The Bradshaw Trail remained an important east-west route across the desert until 1908 when the road that would become I-10 was constructed. It continues today as a graded road maintained by Riverside County and the BLM. It is popular with campers and 4-wheeler enthusiasts who are interested in desert history.

The southernmost portion of Alternative B between Mileposts 52 and 78 parallels the right-of-way of the SPRR line while the western portion of the Proposed Project and Alternatives A and C also parallel the line, but at a greater distance. The SPRR was part of the transcontinental railroad system. The transcendent historical significance of the railroad in western American history can not be overstated (Bancroft 1890; Fickewirth 1992; Myrick 1992). Congress authorized Southern Pacific to establish a western link in 1866, the same year the railroad was incorporated. Work began in 1870 within an environment of scandalous political maneuvering and competition by the railroad monopolies. Beginning in the Los Angeles area and progressing through the San Geronio Pass, construction crews reached Whitewater on New Year’s Day, 1876. The line veered southeast just 1.5 miles west of the project area where they tapped Snow Creek for water that was piped to the new Cabazon and Palm Springs railroad stations. They also quarried nearby gravel beds for road ballast. Continuing through the Coachella Valley and skirting the western side of the Algodones Dunes, the railroad finally reached Yuma in May 1877.

The railroad spurred a population and land boom throughout Southern California that lasted more than a decade. Locally, numerous communities sprang up along the route, including the town of Banning. Anglo settlement soon began in what would become Palm Springs due to the reasonably short wagon ride between the railroad station and the Cahuilla village of *Sec he* (Agua Caliente). Lumber and mining activities in the nearby desert and mountains became much more feasible with the railroad, including the Cargo Muchacho, Southeastern Chocolate Mountains, Picacho and Paymaster mining districts which the southern portion of Alternative B either passes through or adjoins (Vredenburg 1981). On a regional basis, the competing railroads offered incredibly cheap fares from the East to entice new immigrants to western cities and towns. Phenomenal growth ensued within urban centers and the hinterlands. The federal government had awarded the railroad every other section of land within twenty miles of their routes in compensation for building the lines. The railroads needed people to buy and develop these holdings. Throughout the region, the burgeoning economies created a demand for consumer goods shipped west on the railroads. At the same time, local agricultural produce was shipped east. The railroad continues to have a major impact on southern California through periodic boom-and-bust cycles to the present day. The UPRR purchased the Southern Pacific in 1996 and continues to operate on the same route. The rail line adjacent to the project area, however, has been replaced and improved over the years and little evidence of the original ballast or construction activities remain.

### **3.2.1.2.13 World War II Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA)**

The southern California and western Arizona desert regions became the focus of historically important training exercises during World War II, leaving abundant physical remains, especially along the Proposed Project and alternatives. The Desert Training Center (DTC) was opened on April 30, 1942. The normally serene desert gave way to the rumble of tanks and staccato of machine guns for almost two years until 1944. The largest military training installation ever to have existed (approximately 21 square miles), the facility had none other than General George S. Patton, Jr., as its first commanding officer (Bischoff 2000; Meller 1946; Henley 1989). General Patton had proclaimed the DTC “probably the largest and best training ground in the United States” (Meller 1946). It served the vital purpose of conditioning troops to desert warfare conditions and tactics in preparation for the North African Campaign. The center was also used to field test numerous pieces of equipment and supplies. The original facility extended from the Colorado River on the east; to a point slightly west of Desert Center, California, on the west; and from Searchlight, Nevada, on the north; to Yuma, Arizona, on the south. This Basin-and-Range Province was ideal in that it contained a variety of terrain types and no large population centers (Howard 1985).

Patton left with his troops for North Africa in 1942, but the facility continued throughout the war processing several million troops. Following the success in North Africa an emphasis on desert warfare was no longer necessary. The name of the Desert Training Center was changed to the California-Arizona Maneuver Area (C-AMA or CAMA) on October 20, 1943, and its purpose expanded to a simulated theater of operations emphasizing other large-scale logistics and not exclusively desert warfare tactics. This included solving complex communications and supply problems, and Army Air Force support of ground troops (Howard 1985). The facility then provided maximum training of combat troops, service units, and staff under conditions similar to a combat theater of operations. Under Major General Charles H. White, the training area was enlarged by another 13 square miles to extend from Gila Bend, Arizona, on the east; to a point 350 miles from Pomona, California, on the west; and from Yuma, Arizona, on the south; to Boulder City, Nevada, on the north (Howard 1985). Command would change three more times before C-AMA closed.

Headquarters for the DTC/C-AMA were at a post called Camp Young near Indio, California. In all there were 11 major camps, with 7 in California and 4 in Arizona. Camp Rice, home to the 5th Armored Division, and Rice Army Airfield was one of the smaller bases strategically located on the Atchison, Topeka and Santa Fe Railroad line (Lynch et al. 1982). Larger divisional camps that may have deployed troops to the project area include Camp Iron Mountain, Camp Granite, and Camp Coxcomb located north of Desert Center. The divisional camps and depots were all connected by a network of railroad lines and major roads. Further out across the desert landscape were the smaller camps and bivouacs from specific field exercises. For example, a platoon might built rock blinds from which they could practice the defense of a mountain pass (Vredenburg 1981).

During the DTC period, exercises emphasized operating with restricted water supply, sustaining operations remote from railheads, navigating and resupplying under cover of darkness, and combined training with the Army Air Force (Howard 1985). A four-phase training program was developed that would not exceed six weeks in duration. First phase training emphasized the

individual, crew, squad, section, and platoon. The second phase concentrated on the company and battery. The third phase consisted of battalion training, and the fourth emphasized the combat team whereby armored units, air, and ground forces were all coordinated. The training program ended with an exercise lasting several days and covering about 300 miles. Advanced supply bases were established along projected routes, tactical maneuvers were conducted in darkness, and tactical bivouacs were established in the presence of hostile air and mechanized threats (Howard 1985; Meller 1946).

The training resulted in development of tactics specifically designed for desert terrain. Methods of advance were established in which men and equipment were dispersed so that they would not present an effective target from the air. In addition, a method of going into bivouac was developed through limited and controlled dispersion that provided a poor air target, good defense against ground attacks, and a means of rapidly resuming march and combat formation. Even in open places where sparse vegetation did not exceed two and a half feet, a whole combat team of armored vehicles and trucks could be arranged so that it was practically invisible to observers in aircraft above 2,000 feet (Patton 1942).

Training during the C-AMA period consisted of a 13-week program. Firing ranges of all types were constructed and troops trained with pistols, machine guns, rifles, and artillery. They also took courses in infantry tactics using live ammunition. Emphasis was placed on development of platoon efficiency. Platoons of 40 to 45 men were sent out on six-day field problems involving directional skills and coordination with supply units. The three final weeks consisted of maneuvers. The first exercise involved a defensive force establishing a position for the purpose of protecting a vital area or installation. The second exercise consisted of field maneuvers that simulated a campaign of approximately 11 days and 10 nights designed to test the endurance of units and their ability to fight and resupply over great distances while providing daily maintenance of equipment and recovery and evacuation of disabled vehicles (Meller 1946). Following action in Libya, American troops trained at DTC/C-AMA went on to fight at the Normandy invasion, throughout western Europe, Italy, Guam, and the Philippines (Meller 1946).

Spartan camp conditions were deliberately maintained to provide soldiers with a realistic, battle-ready experience. Through the history of C-AMA, orders were periodically given to prevent any center from lapsing into more comfortable conditions. (Camp Young appears to have been the exception.) No units were allowed to stay too long at any center. The most mobile were supplied with B-rations and C-rations and no screened eating areas would be provided. The Ground Surgeon was well aware that during the warmer seasons, flies would cause near-epidemics of dysentery. Screened eating areas were therefore advised for service units that had to remain in certain areas, such as base camps, for longer periods. However, orders were subsequently given that no new screened areas were to be built and old ones would not be maintained. Iced fresh food was also prohibited. Lowered morale from the monotony of B-rations, disease outbreaks, and even some reported deaths and public protest eventually led to some relaxation of these severe conditions. Shortly before C-AMA was closed all units were allowed to enjoy A-rations (Meller 1946).

Patton (1942) personally wrote a field manual based on his experiences at DTC that included everything from advice on desert survival to the principles of tank warfare. In his "Notes on

Tactics and Technique of Desert Warfare (Provisional),” he sought to transmit the aggressive spirit that would lead to victory:

Formation and material are of very secondary importance compared to discipline, the ability to shoot rapidly and accurately with the proper weapon at the proper target and the irresistible desire to close with the enemy with the purpose of killing and destroying him.

It is my opinion that the force commander can exercise command from the air in a liaison plane by the use of two-way radio. He should remain in the plane until contact is gained, after which one of his staff officers should be in the plane and he himself on the ground to lead the attack.

Sitting on a tank watching the show is fatuous – killing wins wars (Meller 1946).

### **3.2.1.3 Data Collection and Findings**

The cultural resources inventory and sensitivity analysis is based on elements of both Class I and Class II investigations. Because all of the alternatives are located in existing, previously inventoried utility corridors, a review of existing literature (Class I investigation), particularly archaeological and ethnographic survey reports, was used to predict the number of sites that might be encountered, their distribution, and areas of high sensitivity.

“Sensitivity” is defined here as the potential for the presence of significant cultural resources to sustain either direct or indirect impacts from the Proposed Project. Significant cultural resources are those resources that are eligible for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (see Section 3.2.2). Areas with high sensitivity include existing NRHP districts or sites. High sensitivity also applied to zones of high site density or large sites with high artifact and feature concentrations where avoidance through project design may be difficult. Other potentially sensitive areas include Traditional Cultural Properties or Cultural Landscapes where entire topographic features are recognized to have ritual or symbolic significance.

Most of the previous surveys have been conducted in the last 23 years by reputable firms, and therefore constitute a reliable data source. In the few areas where surveys were conducted before 1980, and in corridors that were surveyed but never developed, a 25 percent random sample survey (Class II investigation) was conducted in order to evaluate the earlier results. No sites had been recorded in most of these areas and therefore our confidence in the results of these early studies was not high. However, new surveys were also negative, confirming earlier studies. New surveys were also conducted in the small segments of the Proposed Project and alternatives rights-of-way that had never been inventoried.

Several assumptions had to be made for this analysis. First, it is assumed that site densities and the distribution of site types in the Proposed Project and alternatives rights-of-way will correspond to the previously inventoried rights-of-way that they parallel.

The right-of-way centerlines of the Proposed Project and alternatives are generally located 150 to 400 feet from existing transmission line centerlines and therefore few previous impacts are anticipated within the proposed rights-of-way from the existing lines. However, some

cumulative indirect impacts may have occurred since the previous surveys due to increased access or activity. This may be especially true along the I-10 corridor. Few or no previous impacts are anticipated in the easternmost 24 miles of the Proposed Project and Alternative A and site densities are extremely low in this region.

The resulting site inventory can therefore be used to predict the potential for the occurrence of and impacts to significant cultural resources and to compare the sensitivity of each of the transmission line alternatives. Additional record search data, extending to a mile from the alternative corridor centerlines, were also used to identify areas of potentially higher site densities and site types that are more likely to be eligible for the NRHP. All of the NRHP listings along the alternatives are of districts and this provides a good index of large areas of sensitivity. Finally, the BLM has established several ACECs for which cultural resources are the principal sensitive element. All of these districts are treated in the sensitivity analysis below.

Also of importance was the identification of TCPs, especially aspects of the cultural landscape that may be significant for Native American groups but upon which there are no discernable physical traces. A prime example is the Indio Hills complex. Identification of TCPs is based on existing literature and inquiries with the Native American Heritage Commission (NAHC). The most seminal works that synthesize the existing ethnographic literature and contain project-specific Native American interviews are *Persistence and Power* (Bean et al. 1978) that was prepared for the Devers-Palo Verde Project along the Proposed Project and Alternatives A and C routes, *Cahuilla Landscape* (Bean et al. 1991) that includes the Coachella Valley, and Clyde Woods' (2001) study for the NBP Project that covers the Alternative B corridor.

A total of 16.5 miles of new pedestrian survey was undertaken to collect data on the number, density, and distribution of cultural resources along previously unsurveyed alternative segments or segments for which previous surveys were too old or minimally documented. New surveys include 5.5 miles of previously unexamined options in the Proposed Project and Alternatives A and C corridors. The results of the surveys conducted for this study were negative.

A total of 194 archaeological sites have been previously recorded within or in close proximity to the four project alternatives and two optional routes. In addition, there are 38 sites or locations within 1 to 2 miles of the alternative routes that have been identified by previous studies or the California State NAHC as either TCPs or areas of special Native American concern. Most of these are previously recorded archaeological sites but four locations along the western end of the Proposed Project and Alternatives A and C are topographic features within the Indio Hills Complex. One other important topographic feature is Palo Verde Peak, located near the Alternative B alignment.

A provisional significance evaluation was undertaken of the previously recorded sites in close proximity to each alignment in order to estimate and compare the number of potential NRHP eligible sites that might be expected on each alignment. These evaluations combine actual previous significance assessments and when not available, evaluations of similar types of sites throughout the Colorado Desert. Efforts were also made to consistently and explicitly apply the same significance criteria to each site type. For example, some previous investigators were apt to classify most lithic scatters as significant while others only identify larger scatters with diagnostic or preserved cores as significant. In the absence of subsurface testing, some analysts

will classify sites as potentially significant, whether they can be proven to meet Federal criteria or not. Many inconsistencies also occur in the same report where sites of very similar characteristics are evaluated differently.

The criteria for determining eligibility for the NRHP revolve around evaluating the “significance” of the property (National Park Service 1991; Hardesty and Turner 2000), stated in Federal regulations as:

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

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) that are associated with the lives of persons significant in our past; or
- (c) that embody the distinctive characteristics of a 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) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Other considerations that effect NRHP eligibility include Native American heritage and religious values, and potential for public interpretation.

With regard to CEQA compliance, the criteria for significance and listing on the CRHR (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) are extremely similar to the Federal criteria:

- (a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- (b) Is associated with the lives of persons important in our past;
- (c) 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; or
- (d) Has yielded, or may be likely to yield, information important in prehistory or history.

Sites already on the NRHP or within BLM ACECs are evaluated here as de facto significant as they are already listed or have BLM recognition as sensitive.

The evaluations for all other sites presented here are therefore theoretical, based on Federal guidelines (National Park Service 1991) and the expected outcome of a formal testing or evaluation program, historical research, and/or Native American Consultation. As such they are applied only to compare relative potential sensitivities and effects on cultural resources from each of the proposed transmission line alternatives. Formal evaluations will be conducted during Class III inventories and evaluations, once a preferred alternative is approved.

Two sites near the Proposed Project are listed on the NRHP as archaeological districts: CA-RIV-1814, the North Chuckwalla Mountains Quarry District (National Register No. 81000165) and CA-RIV-1383, the North Chuckwalla Mountains Petroglyph District (National Register No. 81000166). These two NRHP districts are located within the larger Alligator Rock ACEC. The Proposed Project alignment is designed to avoid these districts: the alignment follows the northern boundary of the ACEC. Alternative B traverses the corner of another ACEC, the Singer Geoglyphs. A third district along Alternative B, Palo Verde Point, is undergoing nomination.

### **3.2.1.4 Comparison of Alternatives**

A total of 22 site types are represented, including 12 prehistoric site types, 1 mixed prehistoric/historic site type, and 9 historic site types. Of the 194 sites, 64 percent are located in Alternative B. Of these, 42 percent are lithic scatters and 29 percent are historic trash scatters. These two site categories, however, have very low frequencies of significant sites. Even excluding lithic and trash scatters from Alternative B, it still contains more sites than any other alternative, a total of 37, and the greatest variability of site types. Following Alternative B in descending order of site type variability are Alternative C, the Proposed Project, Alternative A, and Option B-1. Option B-1 contains the least variability due to its short length, but a high number of these sites are trails with potentially high significance as TCPs and a number of habitation sites with rock art. The Proposed Project contains the least number of sites relative to its length, as well as the lowest variability of site types.

#### **3.2.1.4.1 Archaeological Sites**

Table 3.2.1 indicates the number of existing sites in or near each alignment with actual or potentially high significance and potential for listing on the NRHP and the California Register of Historical Resources. The Proposed Project right-of-way contains the least number of potentially eligible sites. Alternatives A and C contain the second smallest number of potentially significant sites. The large number of temporary camps in Alternative C is due to its proximity to Ford Dry Lake. Alternative B and Option B-1 contain the highest number of potentially significant sites, more than triple the number in the Proposed Project right-of-way. Most of the lithic scatters or lithic scatters with features are too small and limited in artifact quantity or variability to be significant, but Alternative B still contains seven lithic scatters that are large and complex enough to have research potential. The large number of trails in Alternative B and Option B-1 account for a substantial number of these significant sites, as do other sites in the Palo Verde and Palo Verde Point complexes. Three geoglyph sites in Alternative B and two habitation sites with rock art in Alternative B add to the sensitivities of these routes. The Reed Family cemetery in Option B-1 is indicated by a question mark as its historical significance has not been established. The comparatively high number of significant sites in Option B-1 is also notable because of its short length.

#### **3.2.1.4.2 Sensitivity Zones**

In addition to, but in some instances inclusive of, the sites discussed above, ten sensitivity zones have been defined along the Proposed Project and Alternative alignments (as shown in Figure 3.2-1). Such determinations are based on one or more of the following attributes: the number and density of potentially significant sites, NRHP or local register status, BLM recognition as ACECs, and Native American heritage values. These zones are the most likely areas to have higher potentials for impacts and a variety of mitigation measures may be needed, including

project design, data recovery, and Native American consultation. Identification of these zones does not preclude the fact that other significant sites may also be located elsewhere within each alternative.

<b>Table 3.2-1 Comparison of Significant Cultural Resources by Alternative</b>					
Site Type	Alternative				Total <sup>b</sup>
	Proposed Project	A	B ( B-1 <sup>a</sup> )	C	
Lithic scatter			7		7
Lithic scatter with features			4		4
Quarry/lithic procurement		1	1		2
Trail (one site shared by the Proposed Project and Alternative C)	2	2	3 (8)	2	9
Trail with features and/or artifacts		1	3 (9)		4
Temporary camp (multiple artifact categories and features)			0 (1)	4	4
Geoglyphs (with trails, features, and artifacts in Alternative B, B-1)			3 (1)	2	5
Rock art with features and artifacts (residential or temporary camp setting) (one site shared by the Proposed Project and Alternatives A and C)	1	2	0 (2)		3
Ceramic scatter	1	2	0 (1)		3
Bedrock milling with ceramics		1			1
Mixed prehistoric/historic site			2 (1)		2
Historic road			1		1
Historic cemetery (Alternative A-1 alignment contains an historic pet cemetery)			1 (? <sup>c</sup> )		1
Historic town site or homestead	1		2	1	4
WWII DTC/C-AMA site (two sites shared by the Proposed Project and Alternative C)	3	3		3	9
East Highline Canal			1		1
<b>TOTAL</b>	<b>8</b>	<b>12</b>	<b>28 (23)</b>	<b>12</b>	<b>60</b>

<sup>a</sup>. Route Option B-1 numbers shown indicate the number of site types located along the optional routes only, and not the entire Proposed Project or Alternative B alignments.

<sup>b</sup>. Does not include Route Option B-1 sites.

<sup>c</sup>. The Reed Family Cemetery in Route Option B-1 is indicated by a question mark as historical significance of this site has not been established.

**Figure 3.2-1 Location of Sensitivity Zones**

*Back page of figure.*

Table 3.2-2 summarizes archaeological information discussed above and provides other numerical values of potential sensitivity. The Proposed Project and Alternatives A and C transmission line alignments avoid the two sites that are currently listed on the NRHP. They are CA-RIV-1814, the North Chuckwalla Mountains Quarry District (National Register No. 81000165); and CA-RIV-1383, the North Chuckwalla Mountains Petroglyph District (National Register No. 81000166). Both of these sites are included within the Alligator Rock ACEC, adjacent to the Proposed Project. Alternative B crosses the other ACEC, the Singer Geoglyphs.

<b>Table 3.2-2 Cultural Resources Sensitivity Comparison</b>					
Attribute	Alternative				
Transmission Line Alternative	Proposed Project	A	C	B	B-1 <sup>a</sup>
Length (miles)	118	119	117	79	14
Recorded sites within 100 feet of C/L	14	14	20	126	30
Potential NR eligible sites within 100 feet of C/L	8	12	12	28	23
Number of BLM ACECs	1	1	1	1	
Number of high sensitivity zones	3	3	4	4	1
Total length of high sensitivity zones <sup>b</sup> (miles)	3.5+	9+	8.5+	12+	5+
Traditional Cultural Properties (TCPs) in or near APE	3	3	3	2	2

<sup>a</sup>. Information listed for route Option B-1 applies only to route option segment, and not the entire Alternative B alignment.

<sup>b</sup>. Zones are difficult to describe with regard to length and distances are approximated.

The total number of zones is included in Table 3.2-2, including the total length of the Proposed Project and alternative transmission line alignments located within each zone.

For the Proposed Project, sensitivity zones include Alligator Rock (avoided), the Indio Hills Complex (2 miles), and Camp Young (1.5 miles). For Alternative A, Alligator Rock (avoided), Camp Young (7 miles), and the Indio Hills (2 miles). For Alternative C, the McCoy Mountains Complex (2 miles) and the south side of Ford Dry Lake (3 miles) are added to the sensitivity zones. The Indio Hills Complex actually consists of about 21 miles of geological formation that the Proposed Project and Alternative C generally parallel. Only near the eastern end, at the base of Edom Hill, do the alignments actually cross the formation. Another caveat concerning the length of sensitivity zones must be made with regard to Camp Young (CA-RIV-1117H). Although the site record defines the site boundaries as 7 miles long and up to a mile wide, features and loci are concentrated at the eastern end and much of the site can be characterized as a low-density historic artifact scatter. Sensitivities may therefore be diminished because direct impacts may be readily avoided through project design or limited to a very small part of the site.

Sensitivity zones in Alternative B include the Palo Verde Complex (9 miles), the Singer Geoglyphs ACEC (1 mile), the two town sites along the SPRR (2 miles), and the *Xam Kwatcan* trail network (indeterminate length). (The major sensitivity zone in Option B-1 is around Palo Verde Point (5 miles), but an indefinite additional portion may also include the *Xam Kwatcan* trail system outside of this sensitivity zone.)

### **3.2.1.4.3 Traditional Cultural Properties**

Table 3.2-2 also lists the number of TCPs that are located directly within the project area of potential effects for each alternative. A total of 38 localities are identified within the general vicinity from the literature review and NAHC consultation. Of these, 29 are located near or within the Proposed Project and Alternatives A and C alignments, and 7 are located along Alternative B, and 2 located along Option B-1. The two ceremonial trails best described as general routes (Woods 2001) may intersect all four (4) alternatives. Sixteen sites have confirmed TCP status from Native American elders, including Quechan, Halchidhoma, and Cahuilla. Two ceremonial trails, two archaeologically documented trails, one general cultural landscape (spirit wandering area), the Palo Verde Peak archaeological complex, the Mule Mountains complex (also near the Proposed Project and Alternatives A and C alignments), the Palo Verde Point rock art complex, Palo Verde Peak, and the Singer Geoglyphs are along the Alternative B alignment (and Option B-1). Included in the trails along Alternative B (and Option B-1) is the *Xam Kwatcan* trail system that may include a number of the archaeologically documented trails along these routes. Along the Proposed Project and Alternatives A and C alignments are eight trails (one with an associated geoglyph), two rock art complexes, six archaeological sites with recorded habitation and/or human remains, six palm oases, and five topographic or natural areas that can be described as cultural landscape features.

Additional consultation with concerned Native American groups is recommended to determine if the archaeological sites have additional sensitivities as TCPs. The localities and sites identified thus far should not be considered exhaustive, and additional sites may also possess properties with special concerns. These include any habitation sites with the potential for human remains, sites with rock art, cultural landscapes, and certain trails. Quechan trails and ceremonial routes along the Colorado River and certain branches to the west are particularly sensitive.

## **3.2.2 Regulatory Setting**

This section reviews the most relevant federal, state, and local (county) laws, ordinances, and regulations for the protection of cultural resources and for which this information provides initial baseline data for agency assessments of impacts to cultural resources.

### **3.2.2.1 Federal**

#### **3.2.2.1.1 The National Historic Preservation Act (NHPA)**

Section 106 of the NHPA (Title 16 U.S. Code, Sections 470w-6) requires federal agencies to take into account the effects of their undertakings (projects), licensed or executed by the agency, on historic properties listed or eligible for listing in the NRHP, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (16 U.S.C. 470f). The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the Agency Official and other parties with an interest in the effects of the undertaking on historic properties, commencing

at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. This investigation provides the information to evaluate the potential effects to cultural resources from each of the proposed alternatives.

The Section 106 process includes the following steps:

- (1) Identify and evaluate the NRHP eligibility of historic properties;
- (2) Assess the effects of proposed action on any historic properties;
- (3) Consult with the State Historic Preservation Officer (SHPO), interested parties, and when appropriate, the ACHP;
- (4) Treat impacts, as necessary; and
- (5) Proceed with the action.

### **3.2.2.1.2 National Environmental Policy Act (NEPA)**

NEPA requires federal agencies to consider impacts of their actions on the human environment, including the cultural environment, whether the action is funded or permitted by the agency.

### **3.2.2.1.3 American Indian Religious Freedom Act**

The American Indian Religious Freedom Act (Title 42, U.S. Code, Section 1996) establishes policy of respect and protection of Native American religious practices. There are specific provisions for providing Native American access to religious sites.

### **3.2.2.1.4 Executive Orders**

Executive Order 13007 (*Federal Register* Volume 61, No. 104, pp. 26771-26772) requires federal agencies with land management responsibilities to allow access and use of Native American sacred sites on public land, and to avoid adversely affecting these sites.

Executive Order 13084 (*Federal Register* Volume 63, No. 96, pp. 27655-27657) reaffirms federal agency obligations to conduct government-to-government consultations and directs the agencies to establish procedures to that effect.

### **3.2.2.2 State**

#### **3.2.2.2.1 California Environmental Quality Act (CEQA)**

Historical resources are recognized as part of the environment under CEQA. The California Register of Historical Resources is an authoritative guide to the state's historical resources and to which properties are considered significant for purposes of CEQA. The California Register includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or have been identified in a local historical resources inventory may be

eligible for listing in the California Register and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC § 5024.1, 14 CCR § 4850).

An archaeological site may be considered a historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)), or if it meets the criteria for listing on the California Register (14 CCR § 4850). The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is a historical resource (i.e., listed or eligible for listing in the California Register), potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not a historical resource, but meets the definition of a “unique archeological resource” as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.

Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired (PRC § 5020.1(q)). While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of a historical resource that convey its historical significance (i.e., its character-defining features), can be considered to materially impair the resource’s significance.

Avoidance and preservation in place are the preferable forms of mitigation for archeological sites. When avoidance is infeasible, a data recovery plan should be prepared which adequately provides for recovering scientifically consequential information from the site. Studies and reports resulting from excavations must be deposited at the California Historical Resources Regional Information Center. Merely recovering artifacts and storing them does not mitigate impacts below a level of significance.

#### **3.2.2.2.2 Health and Safety Code**

Section 7052 of the Health and Safety Code establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

#### **3.2.2.2.3 Penal Code**

Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historical or archaeological interest located on public or private land, but specifically excludes the landowner.

#### **3.2.2.2.4 Public Resources Code**

Public Resources Code, Section 5097.5, indicates the unauthorized disturbance or removal of archaeological, historical or paleontological resources located on public land is defined as a misdemeanor.

### **3.2.2.3 Local**

#### **3.2.2.3.1 Riverside County General Plan**

The Riverside County General Plan specifies that significant historic and prehistoric resources be identified and documented, and provides provisions for the preservation of representative and worthy examples. It also recognizes the value of cultural resources and requires that land uses be assessed for impacts.

#### **3.2.2.3.2 Riverside County Ordinance**

The Riverside County Ordinance 578, provides for the creation and protection of historic districts within the County and expresses their policy of historic preservation. The Ordinance does not specifically address cultural resources outside of designated districts.

#### **3.2.2.3.3 Imperial County General Plan**

The Imperial County General Plan identifies areas of varying sensitivity for cultural resources and establishes policy for promoting the protection of important cultural resources.

### **3.2.3 Environmental Consequences**

This section identifies potential direct and indirect effects of the Proposed Project and alternatives on significant cultural resources that are known or may be present within the project area.

#### **3.2.3.1 Methodology and Significance Criteria**

To determine potential impacts that could occur as a result of construction and operation of the Proposed Project, significant and potentially significant cultural resources within the project area (specifically, within or adjacent to the Proposed Project and alternative transmission line alignments) were identified (as discussed in Section 3.2.2, above). Activities associated with construction and operation of the Proposed Project were then considered for their potential to result in adverse effects on resources known to be, or potentially, present. Project construction and operation activities could have adverse effects on historic properties if they:

- Directly or indirectly... “diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” [36 CFR 800.9(b)]
- Otherwise directly or indirectly... “harm characteristics that qualify the property for inclusion in the National Register of Historic Places.” [36 CFR 800.9(b)]

The phrase “adverse effect” (as used in Section 106 consultation) and “significant impact” (as used in NEPA analysis) are not equivalent terms, but are similar in concept. For this assessment, an adverse effect that would occur to a resource deemed eligible for inclusion on the National Register would be considered a significant impact under NEPA and CEQA. Effects can be direct and/or indirect. Direct impacts could include driving and moving equipment and materials within designated work areas. Indirect effects often occur as a result of unplanned activities or

other results. They include visual intrusions upon cultural resources that could adversely affect their setting (part of what may make them National Register eligible) or unintended increased use or access to an area, including resulting increased illegal artifact collection or vandalism.

### **3.2.3.2 Proposed Project Impacts and Mitigation Measures**

**Cultural Resources Impact 1:** *The Proposed Project could result in direct effects to prehistoric and historic archaeological sites.*

As shown above in Table 3.2-1, prehistoric and historic sites eligible for National Register listing occur within the Proposed Project transmission line alignment. The Proposed Project corridor includes 8 known significant or potentially significant cultural resources that may be indirectly or directly affected by construction and/or operation of the Project. Additional sites maybe identified when the Class III inventory occurs. The majority of the potential historic properties are located in the Mule Mountain area and the segment of the Alternative B alignment between the Chocolate Mountains and Wiley Well.

Unavoidable direct impacts to these resources and additional resources that may be significant but have not been discovered, could occur as a result of surface or subsurface disturbance and activities during construction, operation, and/or maintenance. Activities including access road use or improvements, transmission line construction, staging area and material yard preparation and use, and construction and operations personnel activities have the potential to disturb cultural resources eligible for National Register listing. Most impact potential would exist during the construction phase, although disturbance could potentially occur during operation and maintenance of the facility (e.g., emergency and routine repair activities, etc).

Direct impacts could occur as a result of the construction of the transmission line. However, adverse effects to individual sites cannot be precisely identified until the final route is selected, specific tower locations are determined, and detailed engineering plans are completed. In many cases, direct impacts may be avoided through minor design modifications.

**Cultural Resources Impact 1 Mitigation:** *Preparation of a Treatment Plan for avoiding and mitigating unavoidable direct adverse effects on resources eligible for National Register listing will be prepared and implemented.*

Treatment of cultural resources will follow the procedures established by the ACHP for compliance with Section 106 of the NHPA and also for compliance with CEQA. A Treatment Plan will be prepared to identify methods of avoiding or mitigating effects. Prior to that, a pedestrian inventory will be undertaken of all portions that have not been previously surveyed or identified by BLM as requiring inventory to identify properties that are eligible for the NRHP (and *de facto*, the CRHR). Those sites not already evaluated for NRHP eligibility will be evaluated based on surface remains, subsurface testing, archival and ethnographic sources, and in the framework of the historic context and important research questions of the Project Area. Sites determined not eligible will receive no further treatment. A cultural resources evaluation report will be submitted to BLM for review, and for consultation purposes, as part of the development of the Treatment Plan.

## **Avoidance**

It is the policy of the BLM to avoid adverse effects to cultural resources to the extent possible. Avoidance of cultural resource sites is the preferred measure, and all impacts to eligible sites will be avoided to the greatest extent possible. As Proposed Project design plans are being finalized, the designated cultural resource specialist and BLM staff will review 1":400' or better scale orthotopo maps of Proposed Project impacts and provide an assessment of direct adverse effects to National Register eligible or unevaluated cultural resources. Recommendations for plan adjustments to avoid all eligible resources to the extent feasible will be made and Proposed Project design adjustments may be necessary.

Final design of the Proposed Project (for example, tower placement and work areas) will include measures to avoid National Register eligible sites where feasible. The final list of sites to be avoided during construction will be specified in the Treatment Plan. The Treatment Plan will also include detailed measures to ensure this avoidance is implemented during construction.

Prior to the start of earth disturbing activities or Proposed Project site preparation, IID shall provide the designated cultural resources specialist and the BLM with final maps and/or drawings showing the area of potential effects of the Proposed Project and all linear facilities. Maps provided will include 1":400' or better scale orthotopo maps showing all Proposed Project impacts. If the footprint of the Proposed Project changes, IID shall provide maps and drawings reflecting these changes to the cultural resources specialist and the BLM within five days. Maps shall show the location of all areas where surface disturbance may be associated with Proposed Project-related access roads, staging areas, and any other Proposed Project components.

## **Treatment Plan**

A Treatment Plan will be prepared for the project. Methods for mitigation of adverse effects and avoidance of impacts during construction will be clearly identified in the Treatment Plan, which will include a mitigation monitoring plan. A qualified archaeological monitoring team will be employed to ensure implementation of the mitigation monitoring plan. Monitors will have the authority to halt construction activities in the immediate construction area if these activities disturb a site that has been identified for avoidance. Sites within 50 feet of the impacted areas will be monitored to ensure impacts do not occur during construction. Specific measures may include flagging and staking and/or the placement of temporary fencing to ensure impacts do not occur during construction. These measures will be designed on a case-by-case basis and in a manner that does not draw attention to a specific site location. Specific procedures, the role of monitors, and the level of Native American participation will be identified in the mitigation monitoring plan portion of the Treatment Plan. The objective of the mitigation monitoring portion of the Treatment Plan is to ensure that cultural resources that are National Register eligible and can feasibly be avoided through planning are not adversely affected by the Proposed Project.

As part of the Treatment Plan for mitigation of unavoidable direct adverse effects to National Register eligible resources, the designated cultural resources specialist will prepare a research design and a scope of work for evaluation of cultural resources and data recovery or additional mitigation of National Register eligible sites that cannot be avoided. IID shall submit the proposed research design and scope of work to BLM's archaeologist for review and consultation with SHPO and Native American groups as necessary and appropriate.

The proposed research design and scope of work shall include (but not be limited to):

- A discussion of the methods to be used to recover additional information and any needed analysis to be conducted on recovered materials;
- A discussion of the research questions that the materials may address or answer by the data recovered from the Proposed Project; and
- A discussion of possible results and findings.

The objective of mitigation through data recovery is to acquire substantive data relative to the research issues identified in the research design of the Treatment Plan. These data are intended to provide information important to history or prehistory relative to the characteristics that rendered the site eligible for inclusion in the National Register. Data recovery on most sites would consist of surface collection and sample excavation. Only on very small sites would complete excavation or collection be considered an appropriate treatment. Other forms of mitigation may also include the collection of oral histories, historical documentation, including architectural and engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation.

IID shall ensure that the authorized cultural resources specialist performs the data recovery, preparation for analysis, preparation for curation, and delivery for curation of all cultural resource materials. IID shall provide a copy of a curation agreement from a public repository that meets the requirements set out in 36 CFR 79 for the curation of cultural resources. In addition, IID shall ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the Proposed Project are delivered to the repository following the approval of the Cultural Resources Report. The Proposed Project owner shall pay any fees for curation required by the repository. The BLM will retain ownership of artifacts collected from BLM managed lands.

### **Data Recovery to Reduce Adverse Effects**

Planning for full-scale data recovery excavation to mitigate the loss of substantial and significant archaeological deposits will be based on the site's research potential beyond that realized during site recording and testing operations. The data gathered during the test investigation and the research design will guide the planning of full-scale excavation. The cultural resources specialist will consult with the BLM and IID regarding excavations for mitigation. Data recovery methods, sample sizes, and procedures will be detailed in the Treatment Plan for SHPO review.

If data recovery is necessary, sampling for data recovery excavations will follow standard statistical sampling methods, but sampling will be confined, as much as possible, to the direct impact area.

**Cultural Resources Impact 2:** *Construction activities could result in the discovery of previously unknown prehistoric and historic resources.*

The potential discovery of unanticipated cultural resources during construction exists along the entire construction corridor and could result in adverse effects to cultural resources. Unanticipated discoveries are sites, features, artifacts, human remains that are discovered during construction as a result of construction activities.

**Cultural Resources Impact 2 Mitigation:** *Designate a cultural resources specialist to be available to address discovered resources.*

Because unanticipated discoveries may occur, the designated cultural resources specialist shall be available at all times to respond within 48 hours to adjustments in the Proposed Project. Addressing discovered resources may include additional testing and significance evaluation. If unanticipated discoveries are made, the archaeological monitor, or representative of IID or BLM shall have the authority to temporarily halt or redirect construction activities. The designated cultural resource specialist shall be notified and IID or IID's representative shall halt construction in the immediate area in order to protect the discovery from further damage; Proposed Project construction may continue elsewhere on the Proposed Project. If such resources are found, the specialist shall contact the BLM's archaeologist as soon as possible.

If such resources are found and the BLM's archaeologist determines that they are or may be significant, the halting or redirection of construction shall remain in effect until:

- the specialist, IID, and the BLM have conferred and determined what, if any, data recovery or other mitigation is needed;
- consultation with SHPO and/or Native American groups is completed as appropriate and necessary; and
- any needed data recovery and mitigation has been completed.

If data recovery or other mitigation measures are required, the designated cultural resources specialist and team members shall monitor construction activities and implement the agreed upon data recovery and mitigation measures, as needed.

**Cultural Resources Impact 3:** *The Proposed Project could affect resources within sensitivity zones.*

These zones are the most likely areas to have higher potential for impacts and where a variety of mitigation measures may be needed, including project design, data recovery, and Native American consultation. Identification of these zones does not preclude the fact that other significant sites may also be located elsewhere within each alternative.

**Cultural Resources Impact 3 Mitigation:** *Implement Cultural Resources Impact 1 Mitigation.*

**Cultural Resources Impact 4:** *Construction activities and disturbance, and the placement of project-related facilities could adversely affect TCPs.*

As discussed in Section 3.2.1.4.3, TCPs have been identified that are located within or near the Proposed Project transmission line alignment. Construction and operation activities within or adjacent to such areas would create the potential for adverse effects to these areas.

**Cultural Resources Impact 4 Mitigation:** *Consultation with Native American groups.*

Additional consultation with concerned Native American groups is recommended to determine if the archaeological sites have additional sensitivities as TCPs. The localities and sites identified thus far should not be considered exhaustive, and additional sites may also possess properties with special concerns. These include any habitation sites with the potential for human remains, sites with rock art, cultural landscapes, and certain trails. Quechan trails and ceremonial routes along the Colorado River and certain branches to the west are particularly sensitive.

**3.2.3.3 Alternative A Impacts and Mitigation Measures**

The Alternative A study corridor contains 12 significant cultural resources (as opposed to 8 sites identified for the Proposed Project). Most of the cultural resources along this alignment are within the Alligator Rock Complex, Camp Young, and the Indio Hills Complex. The potential for impacts and recommended mitigation measures are similar to those discussed in Cultural Resources Impacts 1, 2, 3, and 4, and associated mitigation measures, identified for the Proposed Project. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level.

**3.2.3.4 Alternative B Impacts and Mitigation Measures**

A total of 28 significant cultural resource sites have been identified within the Alternative B study corridor for this alignment (as opposed to 8 sites identified for the Proposed Project). Most of the cultural resources along this alignment are within the Palo Verde area and at the end of the Chocolate Mountains. Although known cultural resources within the Alternative B alignment area differ from those of the Proposed Project, the potential for impacts and recommended mitigation measures are similar to those discussed in Cultural Resources Impacts 1, 2, 3 and 4, and associated mitigation measures, identified for the Proposed Project in Section 3.2.3.2, above. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level. Route Option B-1 would serve to avoid the Palo Verde Mountains sensitivity zone, but would then result in the alignments encroachment on the Palo Verde Point sensitivity zone.

**3.2.3.5 Alternative C Impacts and Mitigation Measures**

The Alternative C study corridor contains 12 significant cultural resources (as opposed to 8 sites identified for the Proposed Project). Most of the cultural resources along this alignment are within the McCoy Mountains Complex, Ford Dry Lake Complex, Alligator Rock Complex, Camp Young, and the Indio Hills Complex. The potential for impacts and recommended mitigation measures are similar to those discussed in Cultural Resources Impacts 1, 2, 3, and 4, and associated mitigation measures, identified for the Proposed Project. Mitigation measures are expected to be sufficient to reduce potentially significant impacts to a less than significant level.

**3.2.3.6 No Project Alternative**

The No Project Alternative would not include the construction of the proposed transmission line. No direct effects to cultural resources would result from this alternative. The need for energy in the Imperial Valley may result in the development of alternative energy related projects, with cultural resources effects whose analysis is beyond the scope of this document.