

8.3 CULTURAL RESOURCES

Cultural resources in the general project area include historic and prehistoric archaeological sites, historic buildings and structures, and resources of traditional cultural significance to Native Americans and other groups. This section analyzes the Russell City Energy Center (RCEC) project's potential effects to cultural resources within the project Area of Potential Effect (APE). For the purposes of this analysis, the APE is defined as the immediate project site and corridors extending 50 feet to either side of the electrical transmission, natural gas, water supply and return line centerlines. Background information is provided for a broader area.

Section 8.3.1 discusses the affected environment, including the natural setting, prehistoric background, ethnographic background, and historic background. Section 8.3.1 also discusses methods and results of archival research and a pedestrian field survey, and discusses the cultural resources documented within the APE. Section 8.3.2 discusses the effects that construction and subsequent operation of the project facilities may have on cultural resources. Section 8.3.3 evaluates any potential cumulative impacts to cultural resources in the project vicinity, and Section 8.3.4 addresses proposed mitigation measures. Section 8.3.5 presents applicable laws, ordinances, regulations, and standards (LORS). Section 8.3.6 presents agency contacts, and Section 8.3.7 presents permit requirements and schedules. Section 8.3.8 contains references.

8.3.1 Affected Environment

Cultural resources are the traces of human occupation and activity that, in northern California, extend back in time for at least 11,500 years. Archaeologists have reconstructed general trends of prehistory. Written historical sources tell the story of the past 200 years. A cultural resources inventory of the project area, as described in Section 8.3.1.5, has not located cultural resources within the project APE. Contact with the Native American Heritage Commission (NAHC) did not result in identification of traditional cultural properties in the project area.

8.3.1.1 Prehistoric Background

This section discusses general trends in California prehistory. Section 8.3.1.2 discusses the history of archaeological research in west-central California. Section 8.3.1.3 presents the results of archival research and archaeological field surveys conducted for this project.

The general trend throughout California prehistory was the increase in population density over time, coupled with greater sedentism and the use of a greater diversity of food resources. Chartkoff and Chartkoff (1984) identified three major periods of prehistory observed throughout California: Pre-Archaic, Archaic, and Pacific. These patterns are roughly correlated with the Paleoindian, Archaic, and Emergent periods, developed by Fredrickson (1974) for west-central California. As Chartkoff and Chartkoff observe, culture change occurred in different ways and at different times throughout California. These changes nevertheless followed a broad pattern, outlined below.

Pre-Archaic Period (Prior to 11,000 years before present [BP])

Evidence throughout California and the western United States generally suggests that Pre-Archaic (or Paleoindian) populations were small and their subsistence economies included the capture of big game such as now-extinct large Pleistocene mammals including mammoth and mastodon. Recent research in the Great Basin, which offers better preservation of Pre-Archaic sites than does California, indicates that

the economies of the Pre-Archaic peoples of the far western United States were based on a wide-ranging hunting and gathering strategy, dependent to a large extent on local lake-marsh habitats (Willig 1988).

Large, fluted lanceolate projectile points known as Clovis points, which are the most widely recognized markers for this time period, have been found in the Clear Lake locality at the Borax Lake Site to the north of the project area (Meighan and Haynes 1970), the Tulare Lake Basin to the south (Wallace and Riddell 1988), and sporadically elsewhere in California. There are no known Pre-Archaic sites from the Bay area.

Early to Middle Archaic Period (11,000–6,000 years BP)

During the Early and Middle Archaic periods, northern California prehistoric cultures, as elsewhere, began to put less emphasis on large game hunting. Subsistence economies probably diversified somewhat, and Archaic-era people may have begun to use certain ecological zones, such as the coast littoral, more intensively than before. Advances in technology, such as the advent of milling stones, indicate that new food processing methods became important during the Archaic, enabling more efficient use of certain plant foods including grains and plants with hard seeds. A model of early Holocene adaptation devised for the eastern Great Basin (Price and Johnston 1988) may be applicable to California. According to this model, this was a period of gradual warming and drying that supported a specialized economy based largely on marsh, lake, and stream resources. It supported higher population densities and a greater degree of sedentism than the Pre-Archaic period.

The earliest Archaic sites from west-central California are from the Los Vaqueros Reservoir area in eastern Contra Costa County, where two sites have recently produced artifact assemblages and human burials dated between 9,870 and 6,600 years before present (BP). Prior to the Los Vaqueros excavations, Early to Middle Archaic deposits in the Bay-Delta areas were limited to isolated human burials. No sites dating to these periods have been found in the immediate project vicinity. However, the lack of sites from these periods may reflect the alluvial environment as well as the extensive urban development that may have destroyed or covered sites. It is possible that as yet undiscovered Early and/or Middle Archaic sites lie deeply buried or beneath existing paved and landscaped surfaces in the project area.

Late Archaic Period (6,000–4,000 years BP)

One important technological advance during the Late Archaic was the discovery of a process for removing the tannins from acorns, which made it possible to exploit this abundant and nutritious, though labor intensive, resource (Chartkoff and Chartkoff 1984). Prehistoric trade networks also began to diversify and develop during the Late Archaic, bringing raw materials and finished goods from one region to another. Resource exploitation during this period, as well as during the Early and Middle Archaic, was generally seasonal. Bands moved between established locations within a clearly defined and defended territory, scheduling the harvest of particular resources according to the time of their availability. Aggregations of food resources, such as occurred at the shores of a large body of water or along a major fish-producing river, allowed for larger aggregations of people, at least seasonally. Dispersed resources, large and small mammalian game during the winter for example, meant dispersal across the landscape into small family groups for more efficient food harvesting. The spear thrower (atlatl) may have been introduced or increased in importance during this period, accounting for the change in projectile point styles from the Western Stemmed series to the Pinto and Humbolt series, which are generally stemmed or have indented bases, or both. There was also an increase in the importance of seed grinding (Price and Johnston 1988).

It appears that the shell mound sites along San Francisco Bay were first occupied during the Late Archaic. Shell mound sites excavated in the Coyote Hills area contain Late Archaic components. Most of these sites have produced intact human burials and a great variety of artifacts, a reflection of the diverse subsistence practices. Acorns and other nut and berry crops appear to have been the primary plant resources targeted during this period. At sites along the Bay, the abundant remains of marine animals, including shellfish, fish, and mammals, reflect the occupants' early adaptation to the marine and bayshore estuarine environment. Obsidian from the North Coast Ranges and eastern Sierra also appears at these sites, reflecting the early existence of extensive trade networks.

Early and Middle Pacific Periods (4,000–1,500 years BP)

According to Chartkoff and Chartkoff (1984), the beginning of the Pacific Period is marked by the advent of acorn meal as the most important staple food resource for most California Indians. Increasing population densities throughout the period made it desirable and necessary for California populations to produce more food from available land and to seek more dependable food supplies. The increasing use of food processing techniques, such as seed grinding and acorn leaching, developed during the Archaic, allowed for the exploitation of more dependable food resources. Increasing use of previously neglected ecological zones may also have been part of this trend.

In the Bay area, Early and Middle Pacific sites are typically composed of well-developed midden deposits with human burials and residential features, representing long-term permanent villages. During this period, archaeological evidence indicates an increase in the use of the estuarine and marine zones and fully developed exploitation of these areas. Site assemblages are characterized by a well-developed bone tool and ornament industry; shell beads, ornaments, and pendants; and both unshaped and well-shaped mortars and pestles. Stone tools are manufactured of both locally available chert and imported obsidian. The predominant projectile point type is the shouldered lanceolate form, although side-notched and stemmed points and large lanceolate-shaped bifaces also occur. Burials are typically in a flexed position.

Late and Final Pacific Period (1,500 years BP-Historic Era)

A.D. 500 (1,500 years BP) is a cultural watershed throughout California. Sometime near this date, the bow and arrow replaced the spear thrower and dart as the hunting tool and weapon of choice. The most useful markers for this period tend to be the small projectile points used as arrow tips. The date of bow and arrow introduction is a point of some controversy, but most authors place it between A.D. 500 and 600. Others believe bows and arrows were introduced as early as A.D. 250 (750 years BP; Hughes 1986) or as late as A.D. 700 (1,300 years BP; Bennyhoff and others 1982).

During the Final Pacific Period, populations became increasingly sedentary and dependent on stored staple foods. Staple foods were stored for the winter in permanent settlements with populations as high as 1,000 persons. At the same time, there is evidence of continued diversification of the resource base. By the Final Pacific Period, every available ecological niche was exploited, at least on a seasonal basis. There was full exploitation of the marine/estuarine zone and further development of long distance trade networks and more complex social and political systems.

Late and Final Pacific period sites are generally well-developed midden deposits, some with surface components. The midden deposits contain both cremated and intact human burials and residential features, including house floors, reflecting the increasingly sedentary populations. Bedrock mortar milling stations were first established in the Bay area around 1,300 years ago. Although portable mortars

and pestles continued to be used, smaller specimens were preferred. Changes in the size of ground stone tools reflect the dramatic increase in the use of small-seeded plant resources. Olivella and clamshell disc beads, frequently found in burials, appear to have been manufactured at Bay Area sites. Small unmodified obsidian pebbles and large flake blanks were imported almost exclusively from the Napa Valley. There is evidence that, during this period, inhabitants of the Bay area had well-established trade relations with the Yurok, the Maidu, the Miwok, and several other interior groups. This period has its end in the late 18th century with the arrival of Euroamericans in the project area.

8.3.1.2 Archaeology and Archaeological Sensitivity of the Project Area

Upland areas near watercourses were favored locations for prehistoric occupation. In the San Francisco Bay Area, the Bay margins are also high sensitivity areas for archaeological resources, due to their proximity to fish and shellfish resources in the Bay. Before historic times, the project site was most likely located at the boundary between dry land and tidal marshland. The evidence for this is that the boundary of the Hispanic-era land grant rancho San Lorenzo runs very near the project site's southern boundary. Examination of Hispanic era land grant rancho boundaries confirms that they generally ran up to, but not beyond, the dry land-marshland boundary. The project area is of high sensitivity for prehistoric archaeological deposits, because this boundary area was a frequent site for villages and temporary camps.

Mt. Eden Creek is located within one-quarter mile of the Eastshore Substation. From such a spot, the prehistoric occupants were able to exploit a variety of ecological niches on the alluvial plain and foothills and to take advantage of marine resources. Along the shores of San Francisco Bay, including the project area, occupation was intermittent and sparse prior to around 5,000 to 7,000 years ago. In addition, evidence for occupation prior to 7,000 years ago was hidden by rising sea levels or buried under sediments caused by natural and man-made Bay marshland infilling along estuary margins.

The first formal archaeological study in the San Francisco Bay area was conducted by Max Uhle, who, in 1902, excavated a trench into a shell mound site on the eastern shore of the Bay at Emeryville (CA-Ala-309). At that time, it was assumed that prehistoric California Indian culture had been primitive and unchanging. Although Uhle found stratigraphic differences in mortuary patterns and artifactual assemblages, other scholars largely ignored the evidence of social complexity and maintained the assumption that no meaningful changes took place during California's prehistory (Uhle 1907; Kroeber 1925).

Nels Nelson was the first person to carry out formal archaeological research in the Bay area. He surveyed the prehistoric shell mounds of the Bay area and identified more than 400 mounds around the Bay. Some of the largest Nelson sites included Uhle's Emeryville mound (1,000 by 300 feet and 32 feet deep), the Stege mounds (240 by 160 feet and 350 by 250 feet), and the Ellis Landing mound (460 by 245 feet and more than 30 feet deep). Unfortunately, Nelson did not formally record or accurately map these sites and their approximate locations have been inferred from site remnants, topographic indications, and other lines of evidence.

Nelson and other early researchers in the Bay area believed that there were no important breaks in the cultural record of the Bay area and no important cultural changes during the area's prehistory. Although Nelson found differences in shellfish species between upper and lower portions of the Ellis Landing mound, which he excavated, he attributed these differences to environmental causes (changes in the environment led to changes in the abundance of different shellfish species). More recent research in the

project area and archaeological excavations, largely conducted to mitigate the impacts of various construction projects, has disproven the theory that prehistoric culture was static in the project area. Instead, we know that a series of prehistoric cultural developments occurred, as outlined above.

8.3.1.3 Ethnographic Background

The project site is situated within the historical Chochenyo territory of the Costanoan Indians. The term “Costanoan” is derived from “Costaños”, the Spanish word for “coast people”. The term refers to a language family found throughout a large area that included the eastern perimeter of the San Francisco Bay and San Francisco Peninsula, or from the Carquinez Straits down to the southern margin of the Bay, and up to the Golden Gate. The Costanoan language family included eight distinct languages, Chochenyo among them. These eight languages have been described as “as different from one another as Spanish is from French” (Levy 1978). All eight Costanoan languages also belong to the Penutian language stock. Penutian languages were spoken throughout north-central California by a number of aboriginal groups, including the Wintu, Maidu, Miwok, and Yokuts. Linguistic evidence suggests that Costanoan speakers occupied the Bay area by 1,500 years ago.

In 1971, Bay area descendants of the Costanoans organized as the Ohlone Nation (“Ohlone” is probably being derived from the Miwok word meaning “people of the west”). Therefore, it is correct to speak of the Costanoans when reviewing the ethnographic background of these people and to speak of the Ohlone when referring to their current status as a nation. The Ohlone Nation received title to the cemetery where their ancestors who died at Mission San Jose are buried. However, no official governmental recognition has ever been given to the Costanoans.

Figure 8.3-1 shows the approximate location of aboriginal territories in the project area at a scale of 1:24,000. The Chochenyo or East Bay Costanoans occupied the Eastshore of San Francisco Bay, between Richmond and Mission San Jose, and as far east as Livermore Valley. The project area is at the southern extent of historical Chochenyo territory. To the south, the Tamyen or Santa Clara Costanoan territory extended around the south end of the Bay and into the lower Santa Clara Valley. It is possible that the southern part of the project area was also within Tamyen territory. In 1770, Chochenyo and Tamyen speakers each numbered approximately 1,200.

In addition to, and overlapping the larger ethnic groups based on linguistic distinction, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous tribelets, that comprised the basic unit of Costanoan political organization. Each tribelet had one or more permanent villages and any number of smaller camps. The village served as a political, social, and ceremonial center in which the tribelet congregated during the winter and from which members of the tribelet launched foraging parties to temporary camps in the warmer months. Surplus food was stored in the larger villages. The name of the tribelet was often the name of its principal village. The average number of persons in a tribelet was approximately 200 (Levy 1978). The position of tribal chief was inherited patrilineally, usually from father to son, although a woman could also hold the position. The chief had extensive responsibilities, including acting as the leader of a council of elders who were responsible for advising the community.

Ethnographic data pertaining to the Ohlone is incomplete at best. The first Euroamericans to record contact with the Ohlone were Fathers Fages and Crespi, who in 1772 traveled up the east side of San Francisco Bay to the Carquinez Straits and then turned south through the Walnut Creek, San Ramon, and

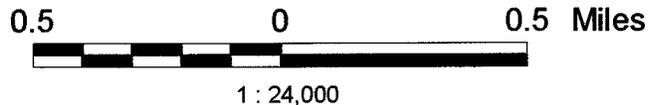
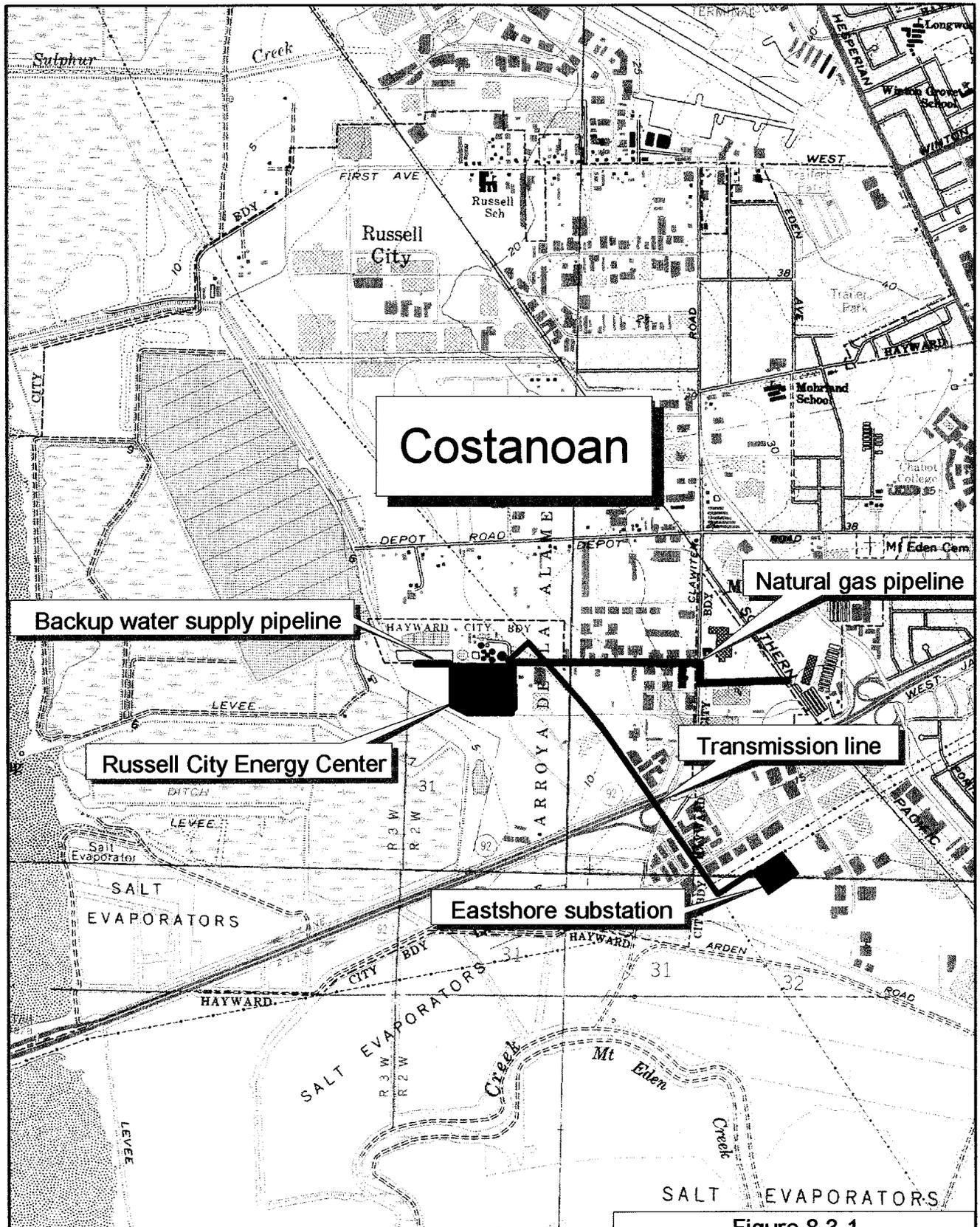
Livermore valleys. Fages and Crespi noted “numerous villages of very gentle and peaceful heathen, many of them of fair complexion” (Cook 1957).

During the next decade, the establishment of Mexican missions at San Francisco, Santa Clara, and San Jose had profound and irrevocable effects upon the Indian population. The missions also resulted in a co-mingling of peoples of different linguistic and cultural backgrounds and a blurring of cultural identities. In addition to the Costanoans, Northern Valley Yokuts, Plains Miwok, Lake Miwok, Coast Miwok, and Patwin were all brought to Mission San Jose (Levy 1978). By 1834, when the missions were secularized, the effects of disease, military reprisals, and the recruitment of Indians as Christian converts had all but obliterated Ohlone culture. The subsequent arrival of Anglo populations further hastened the cultural extinction.

Ethnographic information available for the Ohlone comes primarily from accounts of early explorers, from mission records, and from a few ethnographers who, in the early and middle years of the 20th century, were able to work with the few remaining native informants (e.g., Kroeber 1925; Harrington 1942; Merriam 1967). These lines of evidence indicate that the Costanoans were hunter-gatherers and that fish and shellfish were an important part of the coastal Ohlone diet. Clams, mussels, steelhead, sturgeon, salmon, and lampreys were all eaten. The Ohlone probably fished with harpoons, nets, and twined basketry traps. Fish poisoning with soaproot was reportedly a common practice. The Ohlone also reportedly used a variety of techniques to hunt large and small mammals, including deer, elk, antelope, bears, mountain lions, sea lions, whales, dogs, wildcats, rabbits, gophers, squirrels, mice, moles, woodrats, raccoons, and skunks. Sinew-backed bows and arrows with a cane shaft and blunt bone or stone tip were used for larger animals, and deadfall snares were used for large and smaller game. Sea animals may have been clubbed from tule balsas or from the banks of tidal sloughs. Communal rabbit drives were sometimes held. Migratory waterfowl and birds also had a prominent place in the Ohlone diet, and waterfowl were particularly important. Canada geese, snow geese, ducks, and coots (mudhen) were hunted using decoys made from a bird carcass stuffed with grass. Hawks, doves, and quail were also hunted and eaten.

The acorn was undoubtedly the most important of the plant foods gathered. Acorns were ground to a meal using stone mortars and pestles, then leached through an open-weave basket to remove the tannins. The leached acorn mush was consumed immediately or formed into cakes, which were dried and stored. Acorns came predominantly from the valley oaks, coast live oaks, and interior live oaks. Black oak acorns, less common in the project area, were preferred and may have been obtained in trade with people in the hills to the east where the black oak is more common. Alternatively, the Oroyson may have had reciprocal food-gathering privileges with neighboring tribelets that allowed them to get their own black oak acorns (Banks and Fredrickson 1977). Buckeyes were processed in a similar manner to acorns but were considered an inferior food. The Ohlone also gathered and made use of laurel nuts, hazelnuts, and an assortment of wild roots, bulbs, fruits, nuts, and seeds.

Plant and animal resources were also used for medicinal, ornamental, and other functional uses (e.g., baskets, shelters, and tools). Resources that were available on a seasonal basis may have influenced prehistoric occupation patterns. For example, acorns are available in October and November, hard seeds can be harvested from May to September, and certain shellfish in California are not edible from May through October (Bard and Busby et al. 1987). During various seasons, foraging parties left the tribelet villages to engage in fishing, hunting, and the collection of plants within the tribelet’s territory and to engage in trade outside this territory.



Sources: Geographic Data Technology, Environmental Systems Research Institute, USGS Quad DRGs - GIS Data Depot

Figure 8.3-1
Aboriginal Territories
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May 2001

The main trading partners with the Costanoans were the Plains Miwok, Sierra Miwok, and Yokuts. The Costanoans supplied the Yokuts with mussels, abalone shell, and dried abalone; they supplied the Sierra Miwok with olivella shell; they supplied the Plains Miwok with bows; and they supplied all of these groups with salt (Davis 1961, in Levy 1978). (The Plains Miwok word for salt is actually borrowed from a Costanoan language.) In exchange, the Costanoans received pinyon nuts from the Yokuts and may have received clamshell disk beads from the Miwok. The Costanoans also fought wars, most often over disputed territories, with other Costanoan tribelets and with the Esselen, Salinan, and Northern Valley Yokuts (Levy 1978).

The Costanoans lived in thatched domed structures with rectangular doorways and a center hearth. The Costanoans also constructed domed assembly houses and circular or oval fenced dance enclosures, both of which were located in the center of the village, surrounded by dwellings. Sweathouses, used by adult men and women, were built into pits excavated out of the banks of streams near the village. The Costanoans generally buried their dead within the village. Bodies were flexed in a variety of positions, including seated, and faced in various directions.

As noted above, the hunting and gathering lifeway of the Ohlone was interrupted by the arrival of Euroamericans, who brought disease (including a 1833 malarial epidemic and a 1837 smallpox epidemic, which killed a large percentage of Costanoans), dislocation (as most surviving Costanoans were brought to the Spanish missions), and cultural atrophy (as the Costanoans were Christianized and traditional lifeways no longer practiced at the missions). Mexicans and Americans took over much of the Costanoan lands during the 1830s and 1840s, securing land grants and claims to natural resources within these territories. Following secularization of the missions in 1834, many Costanoans served as ranch hands to the Mexicans and Americans who had taken their land.

8.3.1.4 Historic Background

Recorded history in the project area begins with early Spanish exploration in the area, the arrival of missionaries, and the establishment of Mission San Jose approximately 10 miles inland (east) from the project site. This was followed by secularization of the missions and division of lands in the project vicinity into a number of large ranchos, the development of an agricultural land use pattern, and the expansion of shipping during the Hispanic Period continuing into the American Period. The agricultural land use pattern was eventually replaced with the arrival of rail transport and subsequent rapid urban expansion. Urban expansion included the formation and incorporation of cities, such as Hayward, San Leandro, Fremont, Newark, and Union City, as well as the growth of large-scale industries such as salt production.

Documented historic-era resources in the project area are associated chiefly with the various industries that developed here from the mid-1800s to the mid-1900s. The industrial history of the project area can be divided into several historic themes: agriculture and ranching, the landings and shipping industry, railroads and other transportation-related industries, and the salt production industry.

Hispanic Period

The earliest historic records for the project area are the accounts of Spaniards who explored the Bay area, beginning in the late 1700s. The hills to the southeast of the project area were identified as the site for one of the 13 missions established in California. “La Mission del Gloriosísimo Patriarca San Jose” (subsequently referred to as “Mission San Jose”) was dedicated by Friar Fermin Lasuan on June 11, 1797, at the site of what had been a Costanoan village, “Oroysom”. A large area surrounding

the mission and extending westward to the coast, including the mission itself, the mission potrero (pasturelands), and the mission embarcadero (landing) were part of the Ex Mission San Jose lands. From 1806 to 1833, Mission San Jose became the most prosperous and second largest (in terms of population) of the California missions. Father Duran served at the Mission San Jose and administered his office as president of all of the California missions during this time. The Costanoan Indians who had preceded the Spanish explorers and missionaries in the project were forced into the missions, along with Indians from interior California.

Following the independence of Mexico from Spain and the secularization of the Spanish missions in 1834, most of the land in the project area was parceled out by Mexican governors as large land grants, or "ranchos", primarily, but not exclusively, to "Californios" (second generation, native-born descendants of early soldiers and civil servants under Spanish and then Mexican rule). "Rancho San Lorenzo" was granted to Francisco Soto and Guillermo Castro. It included present day Castro Valley, Hayward and part of San Lorenzo.

In addition to ranching, Californios continued the trade in salt and hides in the project area. During this time, most of the Mission Indians were either hired on as ranch hands or were relocated to one of the reservations located far to the east or north.

American Period

The Californios were followed by a new wave of immigrants who came to California and the project area in the mid-1800s, following reports of gold discoveries. The project area was not a particularly active mining area (although there was some mining in the hills to the east), but it was active in supplying the mines in the Sierra Nevada Mountains further east with food, hardware, and clothing. In addition, San Francisco provided a good market for agricultural commodities, such as vegetables and grains, and the project area saw a growth in agriculture and ranching beginning in the mid-1800s. Joel Russell staked a claim on what he believed to be open range and marshland in 1853. When his claim was disputed by Guillermo Castro, agent for the Soto San Lorenzito Rancho (the western half of the Rancho San Lorenzo granted to Francisco Soto), the U.S. Land Commissioners held against Russell in 1856, and he purchased the land he had squatted on. He sold off much of this property, retaining 320 acres between Mt. Eden and what later became Hayward's Landing. Mt. Eden soon emerged as a center of the salt industry.

Salt making is an early East Bay industry with a long history. The first commercial salt operation in Alameda County began in 1854, when John Johnson constructed levees around tidal pools to evaporate water. Early salt making was mostly a small, family-run business. Many of these used Chinese labor. The Oliver Salt Company, later purchased by Leslie Salt in 1931 consolidated most of the small works in 1927. These salt works continued in production until 1992, when the land and tidal marshes came under the East Bay Regional Park District as the Hayward Regional Shoreline. Currently, efforts are being made to restore natural tidal flow to the former evaporation ponds.

The Russell City Energy Center project takes its name from Russell City, one of the many towns throughout the west that were platted, but never extensively developed. Named after Joel Russell, an early pioneer in the area, the town was planned by the Russell heirs and real estate agents from San Francisco. The San Francisco fire and earthquake of 1906 inspired a frenzy of real estate development throughout the bay area, and Russell City was advertised as only one hour away from San Francisco and 25 minutes from Oakland by rail and ferry. The developers planted palm trees and offered prospective buyers a free ticket from the city to inspect the available lots. Streets were graded and sidewalks

installed, but in the end only three homes were actually constructed. Many of the lots had been bought by speculators, not home builders, and a lawsuit brought by the Russell heirs against their real estate agents delayed and discouraged development. The depression of 1910 brought an end to speculation in Russell City for the time being.

During the Great Depression Russell City began to develop in earnest, although in a haphazard and unplanned way. Migrants from the south in search of work could purchase one of the originally platted 25 foot-lots for as little as \$20, and many did so. Russell City was in an unincorporated area of Alameda County and had no sewers, city water or other utilities. It was surrounded by a hog farm/packing plant, the municipal landfill, automobile graveyards, and the Southern Pacific railroad tracks. With no utilities available, outhouses and shallow wells were the norm. World War II drew more people to the area, and Russell City continued to grow, reaching a population of 1,500 by 1957. Being in an unincorporated area of the county and a relatively short drive from San Francisco and Oakland, Russell City had certain advantages when it came to nightlife. A number of bars and after hours clubs, such as the Russell City Country Club, The Front, Mrs. Alves', and Pitman's Rendezvous figured prominently in the creation of a musical style known as the West Coast Blues. Musicians such as Big Mama Thornton, T. Bone Walker, Albert Collins, Junior Walker, and Ray Charles would head to Russell City after closing time in the bigger cities and perform past dawn (Stone 1995).

Electrical Distribution System

Electrical power plants began to be constructed in the late 1880s. Long distance transmission was pioneered in California in 1891, with a 14-mile-long line constructed for a hydroelectric facility in San Bernardino County. In the 1890s, a PG&E predecessor constructed a 22-mile-long electrical transmission line between the Folsom hydroelectric plant and downtown Sacramento. This was one of the earliest long-distance transmission lines. By the 1920s, electrical power companies had constructed a number of long-distance lines, a number of these to transmit hydroelectric power from the Sierra Nevada mountains to major population centers in the central Valley and on the California coast. Most early transmission lines were steel truss structures based on the design of steel windmill for the oil industry. The electrical service industry coalesced around private, regulated monopolies like PG&E, and a few municipal utility districts.

The electrical transmission line nearest the RCEC runs between the Grant and Eastshore Substations. Further south, this line connects eventually to the Newark Substation, which was first constructed in the 1920s. The Eastshore Substation was recently (within the past year) replaced on an adjacent lot. This Grant to Eastshore 115-kV transmission line appears on 1939 aerial photographs.

Historic Archaeological and Historic Site Sensitivity

Sensitivity for historic resources and historic archaeological resources in the project area is low. Early historic uses of the area included salt processing and the Bay Area salt industry had its beginnings near the project area. Most of the salt works in the immediate area, however, have been long abandoned and are in a poor state of preservation. None of these are particularly near any proposed project facilities. The Hayward Area Recreation Department has acquired title to some abandoned salt ponds near the Bay shore, about a mile from the project site, and has plans to preserve or interpret some early salt processing features. Some historic archaeological deposits were recorded south of the Eastshore Substation, south of Arden Road. These included sites with Chinese ceramics possibly associated with salt pond development or salt production; however, they are not near project facilities. Historic archaeological

deposits are less likely to be present near project features, including the transmission line, natural gas line, and water supply and wastewater return pipelines.

8.3.1.5 Resources Inventory Methods

Inventory methods for the RCEC project consisted of archival research, an intensive pedestrian survey, architectural reconnaissance, and Native American consultation.

Archival Research Methods

Foster Wheeler Environmental conducted a records search at the Northwest Center of the California Historical Resources Information System (CHRIS) at Sonoma State University in Rohnert Park, Sonoma County on February 15, 2001. An area bordered by the western edge of the City of Hayward Water Pollution Control Facility, State Route 92, Interstate 880, and West Winton Avenue was searched. All of the natural gas pipeline alternative routes, including the preferred alternative, are located within this area.

In addition to reviewing available survey reports, lists of historic properties (e.g. the National Register of Historic Places, California Inventory of Historic Resources, California Points of Historic Interest, and California Landmark files) were reviewed to locate historic archaeological sites within the project area. Project Staff studied USGS topographic maps and other historical maps to determine where unrecorded historic structures and features might be located.

Archaeological Survey Methods

Andrew Gorman conducted a pedestrian field survey for the RCEC project. Mr. Gorman has a Bachelors degree in Archaeology and eight years of archaeological experience. The project site, natural gas pipeline route, water supply and wastewater return pipelines, and electrical transmission line and substation expansion area were surveyed by Mr. Gorman on March 27 and 28, 2001. (Andrew Gorman's qualifications are attached as Appendix 8.3-A.)

RCEC Plant Site

Much of the proposed site is occupied by the transmitting antennas and transmitter building of radio station KFAX AM 1100. The antenna masts occupy only a small portion of the site the remainder is in heavy grass cover. Visibility of the ground surface on the day of the survey ranged from zero to 80 percent due to the presence of ruderal vegetation. The area was walked in approximately 15-meter transects, and the sod was scraped back and the exposed soil troweled for artifacts every 15-meters. Grassed areas along the transects were probed with a shovel for surface artifacts or rocks, and opportunistic use was made of any areas of exposed soils encountered. No deep subsurface tests were made to avoid damaging the ground radial system for the antenna towers that are buried approximately 6-inches deep in a pattern radiating from the base of each tower. The only artifacts encountered were modern trash. An area along Enterprise Avenue about 7 meters in width is elevated above the remainder of the lot by 5 feet or so and is recent fill.

The eastern portion of the power plant site is currently occupied by Runnels Industries, a metal sandblasting and painting firm. This area is a dirt lot, with excellent ground surface visibility, although at least 40 percent of the ground is covered by buildings, concrete foundation slabs, and asphalt regrid and gravel. A pedestrian survey was made of this area and no artifacts were located. The buildings are all industrial metal and portable buildings erected in the past 30 years. The site is composed largely of recent fill to unknown depth.

Electrical Transmission Line and Eastshore Substation Expansion—The RCEC will utilize an existing high voltage transmission corridor to connect to the Eastshore Substation south of State Route 92. The transmission towers that currently occupy this corridor appear to be recently constructed and are located in previously disturbed areas, namely the parking lots of industrial buildings, and a highway interchange right-of-way. No signs of cultural resources were seen along the route. The proposed project would connect with the Eastshore Substation, which was constructed within the past year, and would involve removal of existing electrical transmission towers and their replacement with single or double-pole structures. The existing structures are standard-design 115-kV steel lattice towers. They appear on the 1939 aerial photographs and were probably built in the 1920s or 1930s, after construction of the Newark Substation to the south, to which they connect. The field study included the substation expansion.

Natural Gas Pipeline—The natural gas pipeline route will run in Enterprise Avenue, cross Clawiter Road, and then run in an existing pipeline corridor that is covered in gravel to PG&E gas distribution pipeline 153 that lies on the east side of the Union Pacific railroad tracks. A drive-by reconnaissance was conducted in these areas along the proposed alignment. Where the ground was visible on either side of the street, the surveyor inspected the exposed surface on foot to about 20 meters/65 feet on either side of the street.

Wastewater Return Pipeline—The wastewater return line will cross under Enterprise Avenue to the City of Hayward Water Pollution Control Facility. This area is entirely paved.

AWT Plant

The field survey conducted for the RCEC site included the AWT site.

Construction Laydown and Worker Parking Areas

Two of the three potential construction laydown and worker parking areas are surfaced lots. The third area, the open land surrounding the PG&E Eastshore Substation, was included in the archaeological survey for the project.

Architectural Reconnaissance Methods

Historic buildings and structures older than 45 years are potentially significant historic resources in the project area. The project team conducted a drive-by architectural reconnaissance to determine whether potentially significant historic architecture is located within the APE, and, if so, whether the project would significantly affect the structures. Special attention was given to building sites appearing on historic USGS maps, and structures that were associated with the salt industry, or historic farm buildings of significant architecture that might be located at the project site or immediately adjacent to it. No such buildings or structures are located near the project site. The project site, transmission line, gas pipeline, and water supply and wastewater return lines are all located in a previously developed industrial area. Structures in the area are mostly commercial buildings built within the past 30 years.

Native American Consultation Methods

The Native American Heritage Commission (NAHC) was contacted by mail on March 29, 2001, and information regarding traditional cultural properties and sacred places, such as Native American cemeteries, in the project area, was requested. On April 6, 2001, the NAHC responded that there are no known sacred lands in the project vicinity. The NAHC also forwarded a list of Native American groups or individuals that may have knowledge regarding traditional cultural properties and sacred places in the

project area. A letter was sent to each of these parties on May 8, 2001 requesting information about such properties. This correspondence is included in Appendix 8.3-B.

8.3.1.6 Resources Inventory Results

Prehistoric Resources

Archival research located no previously recorded sites within or near the project APE. None of the surveys on file conducted in and near the proposed project area had located significant cultural resources. The archival research area included land within 1000 feet of the project site and the linear facilities. No new archaeological sites or isolates were found within the project APE during pedestrian field survey. The survey area included the entire project site and areas within 100 feet of the natural gas pipeline, electrical transmission line, and water supply and wastewater discharge pipeline.

Historic Resources

The project would involve removal of 6 of the existing electrical transmission towers and their replacement with new single-pole or double-pole towers. The existing towers may be more than 45 years old (towers appear on 1939 aerial photographs). They are part of a line connecting the Grant Substation with the larger Newark Substation, in Fremont, through the Eastshore Substation. A cultural resources site record is included in Appendix 8.3-C.

The transmission towers are not significant from an architectural, historical, or engineering standpoint. Though there is a relative lack of historical research on transmission towers and their architectural and historical significance, a recent consulting report on this topic makes it clear that “the specific elements of the transmission tower had largely evolved into a modern form” by the 1920s (Mikesell 2000). This form was a structural engineering descendent of the windmill, radio communication, and bridge support towers that were developed in the late 19th and early 20th centuries. Towers very similar to these are located throughout California and elsewhere, some of very recent construction.

These transmission towers also do not have associations with significant historical events involving the development of the electrical infrastructure system in the region, that would warrant preservation or mitigation of what would be the adverse effect of replacing several of the towers with towers of new design. The key historical events in the history of electrical infrastructure development took place in the between 1890 and 1910 (Mikesell 2000). These included the first long-distance electrical transmission (from hydroelectric generators) step-up, step-down transmission, alternating current, three-phase transmission, and improved transformer design. The transmission towers are not eligible for listing on the California Register of Historic Places or National Register of Historic Places and so no mitigation is proposed.

8.3.2 Environmental Consequences

8.3.2.1 Significance Criteria

Under the California Environmental Quality Act (CEQA), an action may be considered to have a significant impact on cultural resources if it will cause a substantial adverse change to an historical resource or a “unique archaeological resource.” Historical resources are those that are eligible for listing on the California Register of Historical Resources (California Public Resources Code [PRC] §5024.1; Title 14, §4852 et seq., California Code of Regulations [CCR]). A property considered for listing can be an object, building, structure, site, area, place, record, or manuscript. A property is historically significant if it “is significant in the architectural, engineering, scientific, economic, agricultural,

educational, social, political, economic, or cultural annals of California.” (PRC §5020.1[j]). Such a property meets the California Register criteria if it:

- 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 (PRC 5024.1).*

Archaeological resources may qualify for significance under CEQA if they are determined to be unique archaeological resources as defined in PRC §21083.2. A unique archaeological resources is:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.*
- 2) Has a special or particular quality such as being the oldest of its type or the best available example of its type.*
- 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC §21083.2).*

It may appear that the California Register of Historical Resources was designed for properties of the historic era while the criteria for consideration as a “unique archaeological resource” were designed to apply to prehistoric archaeological resources. Most significant archaeological resources (prehistoric or historic), however, would qualify for the California Register (particularly criteria A and D). Similarly, most significant historic archaeological sites (but not historic buildings and structures, or sites lacking archaeological deposits) would qualify as “unique archaeological resources.”

A significant impact on a historical resource would be one that would cause a “substantial adverse change” to it (CCR, Title 14 §15064.5). That is, an action would be considered a significant adverse impact if it “demolishes or alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources,” or a local register of historical resources.

8.3.2.2 Construction Phase Impacts

Prehistoric Resources

There are no known prehistoric archaeological resources at the project site, along the transmission line, gas pipeline, or water supply and discharge pipeline routes. It is possible, however, that the project could encounter buried cultural resources during the construction phase of the project that have not previously been discovered, since the project area is an alluvial area of high deposition and is also an area of high prehistoric archaeological sensitivity.

Historic Resources

The project would involve the removal and replacement of 6 transmission towers. Though the towers are more than 45 years old, this would not be a significant impact, because the towers are not architecturally or historically significant, and do not qualify for listing on the California Register of Historical Resources.

8.3.2.3 Operation Phase Impacts

Impacts to cultural resources are not anticipated during operation of the proposed facility. Maintenance of the gas and water lines will not cause any effects outside of the initial construction area of impact.

8.3.3 Cumulative Impacts

Since the project would not affect known significant cultural resources, it would not be likely to cause significant cumulative impacts. If the project were to encounter a buried prehistoric midden site, the possibility of cumulative impacts would arise because such sites may be highly significant and those that have been recorded in the project area have been partly damaged or destroyed by agricultural activity and other development.

8.3.4 Proposed Mitigation Measures

Implementation of the following mitigation measures will lower any potential project impact to archaeological resources below the threshold of significance. These measures establish procedures to follow in case previously undiscovered archaeological deposits are encountered below the ground surface.

Preconstruction Assessment and Construction Training

The project archaeologist will visit the project area before construction begins to become familiar with the site conditions. As construction begins, the project archaeologist will conduct a worker education session for construction supervisory personnel to explain the importance of and legal basis for the protection of significant archaeological resources. This worker education session can take place at the same time as the paleontological training session (Section 8.8) since both disciplines will involve the monitoring of excavation activities (although in different areas). Information about archaeological resources may be combined with information about cultural resources in the training brochure that will be distributed to construction supervisory personnel.

Emergency Discovery

If the construction staff or others identify archaeological resources during construction, they will immediately notify the project archaeologist and site superintendent, who will halt construction in the immediate vicinity of the find, as necessary. The project archaeologist will use flagging tape, rope, or some other means as necessary to delineate the area of the find within which construction will halt. This area will include the excavation trench from which the archaeological finds came as well as any piles of dirt or rock spoil from that area. Construction will not take place within the delineated find area until the project archaeologist, in consultation with the CEC staff, can inspect and evaluate the find.

If human remains are encountered during construction, project officials are required by law (California Health and Safety Code 7050.5) to contact the county coroner. If the coroner determines that the find is Native American, the coroner is required to contact the NAHC. The NAHC is required (Public

Resources Code 5097.98) to determine the Most Likely Descendant, notify that person, and request that they inspect the burial and make recommendations for treatment or disposal.

Site Recording and Evaluation

The project archaeologist will follow accepted professional standards in recording any find and will submit the standard Department of Parks and Recreation historic site form (Form DPR 523) and locational information to the Northwest Information Center of the California Historic Resources Information System at Sonoma State University, Rohnert Park.

If the project archaeologist determines that the find is not significant, construction will proceed. If the project archaeologist determines that further information is needed to determine whether the find is significant, the CEC and State Historic Preservation Officer (SHPO) will be notified, and the consultant will prepare a plan and a timetable for evaluating the find, in consultation with the CEC and SHPO.

Mitigation Planning

If the project archaeologist and the consulting parties (the CEC and SHPO) determine that the find is significant, they will prepare and carry out a mitigation plan in accordance with state and federal guidelines. This plan will emphasize the avoidance, if possible, of significant archaeological resources. If avoidance is not possible, recovery of a sample of the deposit from which the archaeologist can define scientific data to address archaeological research questions will be considered an effective mitigation measure for damage to or destruction of the deposit.

The mitigation program, if necessary, will be carried out as soon as possible to avoid construction delays. Construction will resume at the site as soon as the field data collection phase of any data recovery efforts is completed. The project archaeologist will verify the completion of field data collection by letter to Calpine/Bechtel and the CEC-PM so that Calpine/Bechtel and the CEC-PM can authorize construction to resume.

Curation

The project archaeologist will arrange for curation of archaeological materials collected during the monitoring and mitigation program at a qualified curation facility, that is, a recognized, nonprofit archaeological repository with a permanent curator. The archaeologist shall submit field notes, stratigraphic drawings, and other materials developed as part of the archaeological excavation program to the curation facility along with the archaeological collection.

Report of Findings

If buried archaeological deposits are found during construction, the archaeologist will prepare a report summarizing the monitoring and archaeological investigatory program implemented to evaluate the find or to recover data from an archaeological site as a mitigation measure. This report will describe the site soils and stratigraphy, describe and analyze artifacts and other materials recovered, and explain the site's significance. This report will be submitted to the curation facility with the collection.

Project Archaeologist Qualifications

The project archaeologist will meet the minimum qualifications for principal investigator on federal projects under the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. The project archaeologist is qualified, in addition to site detection, to evaluate the

significance of the deposits, consult with regulatory agencies, and plan site evaluation and mitigation activities.

8.3.5 Applicable Laws, Ordinances, Regulations, and Standards

The CEC environmental review process under the Warren-Alquist Act is considered functionally equivalent to that of the California Environmental Quality Act (CEQA) (Public Resources Code 15000 *et seq.*) with respect to cultural resources. CEQA and its implementing regulations state that “Public agencies will seek to avoid damaging effects on an archaeological resource whenever feasible.”

The California Public Resources Code (PRC) and California Code of Regulations (CCR) provide statutes and guidelines for lead agency compliance with CEQA when evaluating potential effects on historical resources. For example, CCR §21083.2 *Archaeological Resources* addresses the evaluation of potential projects on archaeological resources and defines the term “unique archaeological resource.” The PRC, Title 14, §15064.5 *Determining the Significance of Impacts to Archaeological and Historical Resources* lists the criteria for the California Register of Historical Resources and defines the meaning of significant impact for historical and archaeological resources.

If a county coroner were to determine that human remains discovered on project lands were Native American, Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code would apply. These laws require that the county coroner notify the NAHC when a Native American grave is found. The NAHC would then identify a most likely descendant to inspect the burial site and make recommendations for treatment or disposal.

8.3.6 Involved Agencies and Agency Contacts

Table 8.3-2 lists the state agencies involved in cultural resources management for the project and lists a contact person at each agency. These agencies include the Native American Heritage Commission, which would be a consulting party in case human remains are found that are prehistoric or historic-era Native American in origin. The California Office of Historic Preservation (OHP) is also listed. This agency is responsible for management of the state and federal historic preservation programs in California. If properties potentially eligible for listing in the California Register of Historical Resources were discovered during construction, the OHP might wish to be a consulting party. Since the project involves federal permitting (Air Quality Prevention of Significant Deterioration Permit), the OHP would become involved in the event of a significant archaeological find.

8.3.7 Permits Required and Schedule

Though this project requires federal, state, and local permits, in addition to CEC site certification, none of these are specific to cultural resources management.

Table 8.3-1. Applicable cultural resources LORS.

Law, Ordinance, Regulation, or Standard	Applicability	Mitigation Effective?	AFC Reference
California Environmental Quality Act, Section 15064.5	Project construction may encounter archaeological resources	Yes	Section 8.3.4, 8.3.5
California Public Resources Code, Section 21083.2 "Archaeological Resources"	Construction may encounter buried archaeological sites	Yes	Section 8.3.2.1, 8.3.5
California Code of Regulations, Title 14, Section 15064.5 "Determining the Significance of Impacts"	Construction may encounter buried archaeological sites	Yes	Section 8.3.2.1, 8.3.5
California Health and Safety Code, Section 7050.5	Construction may encounter Native American graves, coroner calls NAHC	Yes	Section 8.3.4, 8.3.5
California Public Resources Code, Section 5097.98	Construction may encounter Native American graves, NAHC assigns Most Likely Descendant	Yes	Section 8.3.4, 8.3.5

Table 8.3-2. Agency contacts.

Issue	Contact	Title	Telephone
Native American traditional cultural properties and human remains	Ms. Debbie Treadway Native American Heritage Commission	Associate Government Program Analyst	(916) 653-4038
California Register of Historical Resources and/or Federal agency NHPA Section 106 compliance (if emergency discovery with federal permit involvement)	Dr. Knox Mellon California Office of Historic Preservation	State Historic Preservation Officer (SHPO)	(916) 653-6624

8.3.8 References

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