7.3 CULTURAL RESOURCES

In accordance with California Energy Commission (CEC) regulations (2006), this section describes the environmental effects of the construction and operation of the project on cultural resources in accordance with CEC requirements. Impacts are assessed for the site of the proposed new generating facility, the construction laydown area, the potential corridors for the water line, and the route of the transmission line. Archaeological resources are discussed in further detail in the technical report (URS, 2008), which is attached in Appendix L. Built environment resources are discussed by JRP Historical Consulting, LLC (JRP), in further detail in the technical report (JRP, 2008), which is attached in Appendix L.

Cultural resources are defined as buildings, sites, structures, objects, or traditional cultural properties, each of which may have historical, architectural, archaeological, cultural, or scientific importance.

The following section documents the efforts undertaken to determine whether cultural resources could be adversely affected by the implementation of the project. Section 7.3.1 presents the environment that may be affected, Section 7.3.2 identifies the environmental consequences, and Section 7.3.3 discusses the cumulative effects associated with the project. Section 7.3.4 identifies the mitigation measures to be implemented to avoid identified impacts. The remaining sections present the regulatory context. Specifically, Section 7.3.5 identifies the cultural resources laws, ordinances, regulations, and standards (LORS) applicable to the project; Section 7.3.6 lists the involved agencies and agency contacts; and Section 7.3.7 discusses permits and scheduling.

7.3.1 Affected Environment

The cultural resources analysis for the project included a literature review and record search, archival research, review of collected data, pedestrian surveys, and consultations with the Native American Heritage Commission (NAHC). The literature review and record search included ethnographic and historic literature and maps, federal, state, and local inventories of historic properties, archaeological base maps and site records, and survey reports on file at the Northwest Information Center at Sonoma State University. Archival research was conducted at a variety of libraries and repositories, including the Contra Costa County Historical Society, California State Library, Sacramento, and Shields Library, University of California, Davis, as well as a review of data collected from the Water Resources Center Archives and Earth Sciences Map Library at the University of California, Berkeley. Pedestrian surveys were performed for both archaeological and historic architectural resources of each cultural resource sub-discipline's Area of Potential Effects (APE). Consultation was carried out with the State of California's NAHC, with subsequent contact with Native American groups and individuals identified by the NAHC. No significant cultural resources were identified within the project's study area.

The archaeological area APE for the project consists of the project property (the location the project site) and the offsite areas, where there will be new ground disturbing activities (Figure 7.3-1). The APE for historic architectural (built environment) resources is shown on Figure 7.3-2. The architectural APE encompasses a larger area to address potential indirect effects.

7.3.1.1 Natural Environment

The project area is within the Sacramento-San Joaquin River Delta, a region primarily characterized today by agricultural development situated upon reclaimed tracts separated by meandering sloughs and channels. The vicinity immediately surrounding the plant is characterized by a mix of agricultural and industrial development. Prior to the reclamation and flood control projects of the nineteenth and twentieth centuries and subsequent development, however, the region was characterized by extensive marshlands fed by the seasonal flooding of the Sacramento and San Joaquin rivers (Herbold and Moyle, 1989; Nichols et al., 1986).

A detailed description of the natural environment within which the project is located can be found in Sections 7.2, Biological Resources, and 7.14, Water Resources.

7.3.1.2 Prehistoric Background

Beginning in the last decade of the nineteenth century, avocational archaeologists have recovered thousands of artifacts from numerous sites in the southern Sacramento Valley and adjoining Delta. A general synthesis of these early works is found within Schenk and Dawson (1929). Many of the sites located within the general vicinity of the project alternatives, particularly those in the Mokelumne River area, were first described by Schenk and Dawson.

The next series of excavations in the general region were conducted by student crews from Sacramento Junior College. Beginning in 1931, various sites adjacent to the Cosumnes River and Deer Creek confluence were excavated. Joined a few years later by crews from the University of California, the Sacramento Junior College archaeologists continued their excavations within the region. These efforts culminated in the milestone works of Lillard and Purves (1936) and Lillard, Heizer, and Fenenga (1939), both of which identified a sequence of cultural change within the Sacramento Valley and adjoining Delta.

The cultural sequence identified by Lillard and his colleagues (1936, 1939) contained three cultural periods (Early, Intermediate/Transitional, and Late), that were based upon changes observed within the mortuary patterns and grave furniture recovered from their sample of sites. Lillard, Heizer, and Fenenga (1939) believed that the sequence represented a single cultural progression, the Early Period evolving into the Transitional Period, the Transitional Period evolving into the Late Period.

As more archeological work was conducted within central California during the 1940s and 1950s (primarily by the University of California Archaeological Survey), the cultural sequence developed by Lillard and his colleagues (1936, 1939) was refined and expanded to accommodate the additional data. The most significant of these revisions was Beardsley's (1954) Temporal and Areal Relationships in Central California Archaeology, in which the Central California Taxonomic System (CCTS) was formally developed.

As archaeologists in central California began trying to incorporate their data into the CCTS, the limitations of Beardsley's system became apparent. Alterations to the CCTS began appearing in the literature of the discipline, with the doctoral dissertation of Fredrickson (1973) being of the most consequence.

After much debate and numerous revisions, the cultural sequence for the central California region, first defined by Lillard and his colleagues (1936, 1939), currently stands as follows:

Windmiller Pattern (ca. 3000 B.C. – 500 B.C.)

The artifact assemblage characteristic of this cultural manifestation includes a variety of flaked stone, ground stone, baked clay, and shell items reflecting exploitation of diverse subsistence resources and acquisition of materials from distant geographic areas through trade. The burial pattern of Windmiller cemeteries and grave plots is unique in that virtually all of the interments are ventrally extended, with the head oriented to the west. The primary exception to this burial pattern is that aged females were buried in a flexed position. Social stratification can be inferred from the burial practices of Windmiller peoples. Males appear to generally have higher status than females, as evidenced in their deeper and artifactually richer graves. Social status may have been at least partially inherited, for some female, child, and infant burials contained elaborate grave furniture, while others lacked such wealth (Moratto, 1984:201-207).

Berkeley Pattern (ca. 500 B.C. – A.D. 500)

The Berkeley Pattern represents a gradual shift in adaptation and material culture that appears to have originated within the San Francisco Bay region. The subsistence practices of Berkeley peoples differs from that of the Windmiller peoples in that the use of acorns for food seems to have increased dramatically. The reliance on acorns is evidenced in the increase in mortars and pestles recovered from Berkeley Pattern sites. Other differences in material culture include the occurrence of an extensive bone tool kit, unique knapping techniques, and certain types of shell beads and pendants within Berkeley Pattern sites. Burial practices of Berkeley peoples also differed from those of Windmiller Pattern sites. No longer were corpses placed into graves extended towards the west. Instead, Berkeley Pattern burials are flexed with variable orientation (Moratto, 1984:207-211).

Augustine Pattern (ca. A.D. 500 – A.D. 1880)

The Augustine Pattern reflects local innovation in technology, as well as the incorporation of new developments with traits of the Berkeley Pattern. The artifact assemblages of Augustine Pattern sites indicate an increased reliance on hunting, gathering, and fishing. Acorns appear to have become particularly important. Many burials continue to be flexed; however, cremation becomes the mortuary practice for high-status burials. Extensive trade networks developed to accommodate the resource and social needs of the burgeoning populations (Moratto, 1984:211-214).

7.3.1.3 Ethnographic Background

The project area is situated within the territory ascribed to the ethnographic Bay Miwok (Bennyhoff, 1977; Kroeber, 1925; Levy, 1978; Schenk, 1926). The Bay Miwok were one of the five Miwok groups (Coast, Lake, Bay, Plains, and Sierra) who spoke the Miwokan language. Miwokan, together with Costanoan, comprise the Utian Family of languages. Utian, in turn, is one of California's four Penutian languages, the others being Wintuan, Maiduan, and Yokutsan. Ethnographic groups speaking non-Utian Penutian languages within California include the Wintu, Nomlaki, and Patwin (Wintuan), Nisenan and Maidu (Maiduan), and the Yokuts (Yokutsan) (Shipley, 1978:82-85).

Unfortunately, ethnographic data on the Bay Miwok are generally scarce. This is in part due to the early removal of these peoples from their homeland by the Spanish missions. The primary reference for the Bay Miwok is found within Kroeber's overview of California Indians (1925). A general synthesis of Eastern Miwok ethnography (i.e., Bay and Plains together) has been written by Levy (1978) and an early account of general Miwok life is found within Powers' study of California Indians (1877).

The Bay Miwok specifically inhabited the area surrounding Mount Diablo northward to Suisun Bay and eastward to the surrounding the confluence of the Sacramento and San Joaquin rivers (Figure 7.3-3). This region is characterized by a myriad of waterways and marshes, beside which the Bay Miwok placed their villages. Bennyhoff (1977), using explorers' accounts, mission records, historical maps, land grant claims, ethnographic sources, and archaeological data, has reconstructed the ethnogeography of the Miwok inhabiting central California. According to Bennyhoff (1977; Figure 2), the tribelet center of *Chupcan* was located within the general vicinity of the County of Antioch.

A typical settlement within Bay Miwok territory would be situated upon a natural rise along a major river or stream and could include brush shelters, sweat house(s), acorn granaries, a dance house, and earth-covered living houses (Kroeber, 1925:447-449; Levy, 1978:408-409).

The principal subsistence activities of the Bay Miwok were hunting, fishing, and the gathering of wild plants. Subsistence practices relied upon a large variety of food sources, rather than being dependent on a limited number of staples. Typical of California groups, acorns from various species of oak were eaten, as were nuts, wild fruits and berries, various seeds, roots, and bulbs. Most mammal, bird, fish, and

molluscan species were eaten; those that were not included the various canines, grizzly bears, black bear, skunk, eagle, amphibians, and reptiles (Levy, 1978:403; Powers, 1976:351).

The Bay Miwok were organized similarly to many California Indians in that a certain territory was identified as belonging to a group, and that group recognized themselves as a unit (i.e., tribelet). Several affiliated villages may have occurred within the tribelet territory. Each village, and often a group of allied villages, had a headman, whose duty was to advise the members of the community. No larger levels of political organization occurred beyond these village affiliations (Bennyhoff, 1977; Gifford, 1926; Kroeber, 1925; Levy, 1978).

7.3.1.4 Historical Background

Hispanic Period

As a result of the Cabrillo expedition of 1542-1543, the southbound passage of the Manila Galleon along the coast after 1565, and subsequent voyages of exploration by Cermmenho in 1597 and Vizcaino in 1602, the California coastline was familiar to navigators by the end of the sixteenth century (Donley et al., 1979). Conversely, the interior remained unknown until the eighteenth century. European exploration of the project vicinity was initiated in 1769 and lasted until 1820. During this period, a number of Spanish expeditions penetrated the Delta area. Between 1769 and 1776, forays led by Portola, Ortega, Fages, Fages and Cresp; Anza (two expeditions), Rivera, and Moraga were carried out. Favorable reports of these parties led to the founding of the Mission Santa Clara and Pueblo de San Jose de Guadalupe in 1777, and the Mission San Jose in 1797.

Spanish annexation and colonization of Alta California, as manifested in the religious-military mission system, produced profound changes in the cultures of the indigenous population. The missions resettled and concentrated the aboriginal hunter-gatherer population into agricultural communities. The Mission tribes were christianized and converted to a form of peasantry that was in rapid decline in Europe. As a consequence of the concentration of population, coupled with the indigenous population's lack of immunity to European diseases, the mission tribes were decimated by common diseases that were generally not fatal to Europeans.

The Bay Miwok were greatly affected by the Spanish incursions into Northern California's interior. Following the depletion of the local coastal aboriginal groups, the missionaries turned to Northern California's interior for neophytes. Among the groups "recruited" during this second wave of proselytization were the Bay Miwok. Most of the neophytes were taken to Mission San Jose where they were baptized and induced to work. Miwok individuals appear upon Mission San Jose's baptismal records as early as 1811. Through time, many Bay Miwok individuals fled the missions, becoming fugitives within their own homeland. The missions sent out punitive military expeditions into the Delta region. In response, several Eastern Miwok tribelets retaliated. In general, the Eastern Miwok reprisals involved raiding the missions and outlying ranchos and stealing their horses (Bennyhoff, 1977; Cook, 1960, 1962; Kroeber, 1925; Levy, 1978).

Jurisdiction over Alta California was established by the Mexican Empire in April 1822. Control over this remote area by the central and local Mexican authorities was never strong. This period was one of a slow disintegration of control by the Mexican government. In 1833, the mission lands were secularized and expropriated (Donley et al., 1979). The former mission lands were given out as private ranches during the next decade in the form of land grants (Gudde, 1969; Hoover et al., 1990).

Secularization of the missions by the Mexican authorities produced additional cataclysmic change within the aboriginal cultures. The majority of the Native Americans gradually left the missions to work as manual laborers on the ranches that were established in the surrounding areas. Among some there was a partial return to aboriginal religious practices and some return to aboriginal subsistence practices. In

many areas, multi-ethnic Native American communities appeared, often composed of remnants of Chochenyo, Eastern Miwok, Northern Valley Yokuts, Patwin, Coast Miwok, and other groups (Levy, 1978:486-487).

The American Period

A major factor leading to the disintegration of Mexican control of California was pressure from the United States. Initial contacts were made by private citizens, such as the November 1826 visit by Jedediah Smith to the San Gabriel Mission. Settlement by United States citizens greatly increased after discovery of gold in 1848. California became part of the United States as a consequence of the Mexican War of 1846-1847. The territory was formally ceded in the treaty of Guadelupe Hidalgo in 1848, and was admitted as a state in 1850 (Bethel, 1969).

The Bay Miwok were also greatly impacted by the early American intrusions into the Delta region. In 1827, Jedediah Smith led a party of trappers through the Delta before embarking upon his famous journey across the Sierra Nevada (Beck and Haase, 1974). Smith was quickly followed by others, including a group of trappers from the Hudson Bay Company, who entered the Delta in 1832. Infected by malaria, these trappers spread the disease among the aboriginal communities of the region. It is reported that this pestilence often killed the inhabitants of entire villages (Cook, 1955).

Those Bay Miwok who survived the epidemic were then subjected to the mass incursion of Euro-Americans into the region following the discovery of gold at Sutter's Mill in 1848. Native peoples were no longer viewed as a source of labor as during the Mission Period, but instead as obstacles to progress. During this period, the wholesale removal of the Eastern Miwok from their lands began (Bennyhoff, 1977; Levy, 1978).

When California was under the governance of Mexico, Governor Jose Castro granted Rancho Los Meganos (sand dunes), in eastern Contra Costa County, to Jose Noriega in 1835. The tract encompassed 17,000 acres of land, including the study area for this project, south of the San Joaquin River. In 1837, Noriega sold this rancho to John Marsh, one of the first American residents of Mexican California (Purcell, 1940).

John Marsh arrived in California in 1836 after winding his way through Massachusetts as a student at Harvard University, an Indian Agent and a tutor for an army Colonel's children in Minnesota, and as a shopkeeper in Missouri. His purchase of Rancho de Los Meganos, a 12- by-10-mile area adjacent to the San Joaquin River, made him among the first Americans to settle in the San Joaquin Valley. Marsh established a home and a working ranch on the grant. He practiced medicine, treating the sick and injured out of his adobe, as well as farming and raising cattle. He built the first wharf in the area and used it to ship his cattle, excess grain, and vegetables to Antioch, where they continued on to market in San Francisco. A smokehouse, blacksmith shop, and a warehouse were also located at the landing. Marsh's facilities are depicted on a circa 1853 map of the Rancho de Los Meganos, housed at the Bancroft Library (Figure 7.3-4). When gold seekers began to pass through the area on their way to the gold fields, Marsh built a long pier at his landing to accommodate larger vessels, and he sold his products to miners and trading vessels. Marsh's Landing was also the site of the first mail delivery to Antioch; mail was dropped off at the landing and then delivered in town. By 1850, he was one of the wealthiest and most influential men in California. The landing was located on the waterfront of the Contra Costa Power Plant parcel (Weinstein, 2002; Wolfe, 2007; Contra Costa County Historical Society, 2007; Southern Energy, 2000).

The gold rush brought additional settlers who saw the area as ideal for river commerce. In early 1849, two brothers, William W. and Joseph Smith, founded the town of Smith's Landing, which was later renamed Antioch (Purcell, 1940:704-705; Emanuels, n.d:214; Antioch Chamber of Commerce, 1952). Its location on a navigable waterway allowed commercial, shipping, and industrial concerns to develop quickly, catering to prospectors traveling to the gold mines, as well as local ranchers and farmers.

Eventually, several wharves dotted the waterfront and provided landings for incoming freight and for the exportation of local products from such businesses as J. C. McMaster's Albion Pottery, the Antioch distillery, and the Antioch Lumber Company (Tatam, 1993:28, 59; *History of Contra Costa County, California,* 1882:483; Boyson, 1964:3; Emanuels, n.d.:227). Coal mining in the vicinity of Mount Diablo contributed to the growth of Antioch in the 1870s, but the mines gave out by the 1880s. Paper milling, an industry that would endure in the area into the 1990s, began with M. D. Keeney's mill established in 1889 in downtown Antioch (Emanuels, n.d.:213-214, 218-219; Tatam, 1993:66; Moran, 1991). In the early twentieth century, industry continued to expand in Antioch with the location of several large industrial plants. The biggest were the California Paper and Board Mill, California Packing Corporation, Fulton Shipyards, and Hickmont Canning Company. Adding to the industrial potential of the area was the construction of the first Antioch Bridge in 1926 across the San Joaquin River. The 1926 bridge was replaced in 1978 by the existing bridge, built at the same location. The span is just east of the study area (Sanborn Insurance Company, 1926; Antioch Historical Society, 2005:95-96, 118).

Antioch was not only advantageously located along a navigable waterway, it was also favored by railroad engineers seeking a route to San Francisco. The Southern Pacific Railroad laid tracks which passed about 2 miles south of the study area in 1878; and in 1900, the Atchison, Topeka, and Santa Fe (AT&SF) line crossed the area just south of the study area, forming the southern boundary of the current CCPP property.

7.3.1.5 Site-Specific Background

Available waterfront land, access to the railroad, and general growth in California eventually encouraged Antioch industries to expand eastward, but this development was slow during the late nineteenth and early twentieth century. Most of Section 16, T2N/R2E (the site of the Contra Costa Power Plant) was owned by Henry F. Beede by 1900, and appears to have remained in his ownership, or that of his estate, until Pacific Gas & Electric (PG&E) acquired the parcel for development of its new electric-power–generating plant in the late 1940s. Beede was a long-time resident of the area, an early employee and later owner of a long-time lumber company that owned waterfront property in Antioch. By the 1900s, and perhaps earlier, Henry Beede, his wife Margritte, and eight of their children were living at the property, which was still held by owner Mr. Peabody. Beede acquired the land within the next few years, and was shown as the owner on a 1908 county map that also clearly shows Marsh's Landing on the waterfront of the parcel in Section 16. The Beede family retained the property until at least the late 1930s (Hulaniski, 1917:570-572; Stoll, 2007; U.S. Census Bureau, 1870, 1880, 1900, 1910; *Plat showing approximate location of the S.F. and S.J.V.R.R. in the vicinity of Antioch, Contra Costa Co.* [s.l., s.p.], 1902; McMahon, 1908; Haviland, 1915; Contra Costa County Title Company, 1930). During this period, the land between Antioch and Oakley in the general vicinity of the study area was devoted to apricot, olive, and almond orchards, as well as vineyards (U.S. Census Bureau, 1900, 1910, 1920, and 1930; Contra Costa County Title Company, 1930).

The study area for this project is located within an industrial corridor that developed extensively after World War II. Prior to the mid-1940s, the study area was rural and contained only a few small buildings. The land immediately adjacent to the river was sandy and unfit for cultivation, while south of Wilbur Avenue, land remained agricultural for the next 30 years (USGS, 1908; Contra Costa County Title Company, 1930; Contra Costa County Development Company, 1943; Richmond Martinez Title Company, 1952). The Antioch area developed enormously during World War II. The U.S. Army established Camp Stoneman east of Pittsburg, and local industries boosted production to meet war-time needs. The economic boom persisted after the war as industry boosted production to meet the desires of the American consumer, and expanded their facilities or found open land for new plants. Antioch had inexpensive, open land; a strong industrial tradition; available water; and access to rail, water, and highway transportation (Antioch Chamber of Commerce, 1952*;* Emanuels, n.d.:219; Antioch Chamber of Commerce, 1961:8-9; Tatam:1993, 43; *Antioch Ledger, 19*53). Rather than building in Antioch proper, however, industries located outside the city limits to avoid city fees and taxes. The waterfront west of

Antioch was marshland, so the shoreline to the east, along Wilbur Avenue, grew into a post-war industrial and commercial zone. In the decade after the war, a second Fibreboard paper mill, PG&E power plant (see Map Reference #1), Crown Zellerbach paper mill, and Kaiser Cement and Gypsum all built new facilities on Wilbur Avenue between Antioch and the Antioch Bridge. Large plants became so prevalent on Wilbur Avenue that it became known locally as "Industrial Row." The industries thrived for several decades, until salt water intrusion, increased environmental regulations, and changes in consumer demand and market conditions began to affect operations and diminish profits (Antioch Historical Society, 2005:95-96; USGS, 1953; Antioch Chamber of Commerce, 1952).

Modern industrial development of the project site occurred in 1949 when PG&E built a steam-generated electrical power plant, known as the Contra Costa Steam Plant (CCPP), at 3201 Wilbur Avenue. PG&E chose the location near Antioch for its proximity to residential and industrial customers, access to cooling water, and transportation. Units 1, 2, and 3 began service in 1951, Units 4 and 5 in 1953, and Units 6 and 7 in 1964. As of January 2008, CCPP Units 1 through 5 have been retired, and Units 6 and 7 produce electricity for distribution through the grid. PG&E sold the CCPP to Southern Energy Delta, L.L.C. (now known as Mirant Delta) in 1999. Mirant Delta continues to own and operate the CCPP facility.

7.3.1.6 Resources Inventory

The methods used to inventory the study area for cultural resources consisted of archival research, Native American consultation, and both archaeological and architectural pedestrian surveys of each cultural resource sub-discipline's respective APEs.

Archival Research

At the request of URS, a California Historical Resources Information System (CHRIS) record search was conducted by the staff of the Northwest Information Center (NWIC) at the Sonoma State University on February 13, 2008 (RS 07-0955). The purpose of this records search was to identify all previously conducted cultural resource surveys and studies, as well as all previously recorded archaeological (including both prehistoric and historic) sites and historic architectural resources within the project study area. The results of the records search are attached in Appendix L to this document. In addition to the historical resources files, the following publications, manuscripts, or correspondence were also consulted:

- the National Register of Historic Places;
- the Office of Historic Preservation (OHP) Archaeological Determinations of Eligibility – Records entered into the OHP computer file, received quarterly (2006); and
- the OHP Directory of Historic Properties – Records entered into the OHP computer file of historic resources, received quarterly (2006).

Based on the information obtained in this records search, there are no recorded archaeological resources within the archaeological APE. A single historic architectural resource, the existing Contra Costa Power Plant (CCPP), has been recorded within the architectural APE.

The archival research revealed that the CCPP property had been previously inventoried for cultural resources with negative results. The survey was conducted in support of the environmental impact report (EIR) being completed for PG&E's sale of this and other power plants (ESA, 1998). It is noted in the EIR that given the results of their survey and the past disturbances within the CCPP, there is moderate to low potential for buried prehistoric resources. Likewise, it is indicated that no evidence supporting the presence of historical archaeological materials was identified in the CCPP. The search also revealed that the CCPP property had been again inventoried for cultural resources for a power plant project after PG&E's divestiture of the property (Dames & Moore, 2000; Quivik, 2000).

The data file listed the Marsh Landing Site (Primary #07-000878) as Office of Historic Preservation (OHP) status code 7, "not evaluated." This is the site of John Marsh's former wharf, or ship landing, established in about 1838. Because there is no extant structure at the site, it is addressed as a potential archeological resource in the current investigation.

The record search also revealed that within the general vicinity of the MLGS study area, five known cultural resources (all historic properties) have been identified and 19 additional cultural resources surveys have been completed .

JRP examined the aforementioned record search, including standard sources of information that list and identify known and potential historical resources, to determine whether any buildings, structures, objects, districts, or sites had been previously recorded or evaluated in or near the project study area. JRP reviewed the National Register of Historic Places (NRHP) (2007), California Register of Historical Resources (CRHR), California Historical Landmarks (1996), and California Points of Historical Interest (1992).

Lastly, during review of U.S. Geological Survey (USGS) topographic quadrangles, it was discovered that a shipwreck has been plotted by the USGS just offshore of the northwestern corner of the CCPP. Although no offshore components are proposed for the current undertaking, these waters fall within the record search area. As such, the shipwreck database maintained by the California State Lands Commission (CSLC) was consulted as a means to find information about this potential resource. Unfortunately, no data for this location were found on the CSLC database.

Native American Consultation

Prior to the beginning of fieldwork, the NAHC was contacted on January 2, 2008, and again on February 26, 2008, to request a records search of the Sacred Lands File and a list of local Native American contacts (individuals and/or organizations) that may have knowledge of cultural resources within the area. According to the NAHC, the search was negative for the presence of Native American cultural resources in the project APE.

The NAHC provided a list of three individuals/organizations that may have knowledge of cultural resources in the project APE and surrounding vicinity. Letters describing the project and a map depicting both the proposed MLGS site and the Bridgehead Lift Station were sent to these parties on February 29, 2008. The letter inquired whether the individuals/organizations had any concerns regarding the project, or wished to provide input regarding cultural resources in the project APE. No comments or questions have been received at this time.

Copies of the NAHC request letter, NAHC response letter, mailing list, and consultation letter, are appended to the Cultural Resources Technical Report, which is a confidential appendix (URS, 2007) to this report.

Any future responses received after the date of this report will be directly forwarded to the CEC.

Archaeological Field Reconnaissance

The pedestrian survey of the MLGS APE within the confines of the CCPP property was conducted by URS Senior Project Archaeologist Mark Hale on October 9, 2007. The Bridgehead Lift Station and proposed waterline were surveyed by Mr. Hale on March 6, 2008. Mr. Hale had surveyed the entire Mirant property, including the area in which the MLGS will be constructed for a previously proposed power plant project (Dames & Moore, 2000).

The entire project APE, including the Bridgehead Lift Station and the route of the proposed waterline, was inspected by walking 15- to 20-meter parallel transects across the project APE. All areas of exposed

soil were inspected for the presence of archaeological resources. Surface visibility was generally poor (less than 80 percent) throughout the portion of the APE located within the confines of the Mirant property, due to existing power plant development. Specifically, much of the proposed construction area is within an existing tank farm, an area comprised of large storage tanks, containment berms, and vast expanses of asphalt.

Along the course of the proposed waterline, surface visibility was basically nonexistent, as this linear component will be placed along Wilbur Avenue within an existing right-of-way. Roadside drainage ditches (when present) were thoroughly examined as were accessible adjacent parcels. As required by the revised CEC regulations, an examination of a 50-foot-wide buffer radius around this linear component was completed. In general, however, the buffer areas were likewise developed, limiting surface visibility. An inaccessible portion of the buffer was present along the northern side of Wilbur Avenue, west of Fleming Avenue (i.e., The Kiewitt Property). Observations were made from the fenceline into this inaccessible area.

In contrast to the other survey areas, surface visibility at the Bridgehead Lift Station was excellent (greater than 95 percent) within the portion of the property where the new facility will be placed, as well as through the portion of the parcel where the waterline will run. Figure 7.3-1 illustrates the project components and the areas surveyed for archaeological resources.

No archaeological resources were identified within the MLGS project's APE during the course of the current investigation.

Built Environment Field Reconnaissance

JRP conducted fieldwork on November 29, 2007, and March 19, 2008 and inventoried and evaluated properties within a larger study area that included the project APE on the attached DPR 523 forms (Appendix L). JRP also conducted the reconnaissance survey of the linear features of the project during the March 2008 field visit. No further historic architectural investigation was required for historic architectural resources that were less than forty-five years old. Based upon the results of the background investigation and the field survey, JRP conducted research at a variety of libraries and repositories, including Contra Costa County Historical Society, California State Library, Sacramento; and Shields Library, University of California, Davis, as well as reviewing data collected from the Water Resources Center Archives, and Earth Sciences Map Library, at the University of California, Berkeley.

JRP used the research data collected to prepare a historic context to address the property types and pertinent themes of industrial development in the study area, including steam-generated power technology and general land use history. The historic themes are discussed in Section 3 of the appended technical report (Appendix L). JRP evaluated the resources within the study area in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and also under NRHP and CRHR criteria, on the DPR 523 forms included in Appendix L.

Each evaluated property is described below.

3201 Wilbur Avenue

The Contra Costa Power Plant was evaluated in 2000 and described in detail in the DPR 523 form prepared at that time (see Appendix L). This facility was field-checked as part of the current project and remains largely the same since the previous survey of the property. Initial construction in the early 1950s consisted of the semi-outdoor boilers, turbines, and generators for Units 1, 2, and 3; four fuel-oil storage tanks; a 230,000-volt switchyard; and water supply and discharge treatment equipment. Generating Units 1-3 produced 110 MW of power each when they started operating in 1951, and Units 4 and 5 added

a capacity of 120 MW each in 1953. The plant was expanded to include generating Units 6 and 7, each with a capacity of 330 MW, in 1964, and three new fuel-oil storage tanks in the 1970s. PG&E shut down Units 1 through 3 in 1994 and sold the CCPP to Southern Energy Delta (now known as Mirant Delta) in 1999. Prior to Mirant Delta's acquisition of the CCPP in 1999, PG&E converted Units 4 and 5 from electric generation units to synchronous condensers to support the transmission system.

Elements of the plant that have been altered since the 2000 survey include the installation of low NO_X burners on Unit 6 in early 2001 and Selective Catalytic Reduction equipment, designed to reduce air emissions, installed on Unit 7 in December 2001. A new metal frame, metal-sided warehouse was constructed east of Units 6 and 7 in 2002; however, this portion of the CCPP parcel has been subdivided and sold to PG&E as part of the GGS. Units 4 and 5 were retired from synchronous condenser service in December 2007 and the associated transmission lines and towers were removed in early 2008.

7.3.2 Environmental Consequences

7.3.2.1 Federal Regulations

Four evaluation criteria to determine a resource's eligibility to the NRHP, in accordance with the regulations outlined in 36 CFR 800, are identified at 36 CFR 60.4. To determine site significance through application of National Register criteria, several levels of potential significance that reflect different (although not necessarily mutually exclusive) values must be considered. As provided in 36 CFR 60.4:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance 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,
>
> (b) That are associated with the lives of persons significant in our past,
>
> (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.

These evaluation criteria are used to help determine what properties should be considered for protection from destruction or impairment resulting from project-related activities (36 CFR 60.2).

7.3.2.2 State Regulations

In considering impact significance under CEQA, the significance of the resource itself must first be determined. At the state level, consideration of significance as an "important archaeological resource" is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the draft criteria regarding resource eligibility to the CRHR.

Generally under CEQA, a historical resource (these include built-environment historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CEQA Section 15064.5 and defined as any resource that:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage,

2. Is associated with lives of persons important in our past,

3. 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

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under Public Resources Code (PRC) Section 5097.98.

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

(a) The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information;

(b) The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or

(c) The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A nonunique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to nonunique archaeological resources and resources that do not qualify for listing on the CRHR receive no further consideration under CEQA.

Under CEQA Section 15064.5, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of one of the following:

(a) A historical resource (i.e., a cultural resource eligible for the CRHR)

(b) An archaeological resource (defined as a unique archaeological resource that does not meet CRHR criteria)

(c) A unique paleontological resource or unique geologic feature (i.e., where the project would directly or indirectly destroy a site or resources)

(d) Human remains (i.e., where the project would disturb or destroy burials)

A nonunique archaeological resource is given no further consideration, other than the simple recording of its existence, by the lead agency.

7.3.2.3 Conformity of Federal and State Evaluation Criteria

The criteria for eligibility for the CRHR are very similar to those that qualify a property for the NRHP, which is the significance assessment tool used under the NHPA. The criteria of the NRHP apply when a project has federal involvement. Although the current exercise is being conducted by the Bureau of Reclamation and thus at the federal level, state cultural resources significance criteria may apply when resources fall under the jurisdiction of a state and/or local agency.

A property that is eligible for the NRHP is also eligible for the CRHR. All potential impacts to significant resources under a federal agency must be assessed and addressed under the procedures of Section 106 of the NHPA, set forth in 36 CFR 800. All resources encountered during the project, with the exception of isolated artifacts and isolated features that appear to lack integrity or data potential, will be evaluated for significance vis-à-vis Section 106.

7.3.2.4 Archaeological Resources Evaluation

Although no archaeological resources were identified within the MLGS APE for archaeological resources, archival research revealed that the site of Marsh Landing was within the boundaries of the current Mirant property. The 1918 USGS Collinsville topographic quadrangle (Figure 7.3-5) places Marsh Landing slightly northeast of the current APE; however, it is unknown what part of the establishment the map is depicting. As discussed previously, Marsh built the first wharf in the area and used it to ship his cattle, excess grain, and vegetables to Antioch, where they continued on to market in San Francisco. A smokehouse, a blacksmith shop, and a warehouse were also located at the landing.

Today, this general location is in an environment that has been heavily disturbed by PG&E's construction activities associated with the development of the existing CCPP, including the tank farm to be demolished as part of this project. The tanks sit within a former dune complex as depicted on the 1918 USGS Collinsville topographic quadrangle (Figure 7.3-6). It appears that these dunes were graded away to place the tanks in question. As such, the likelihood that intact cultural deposits associated with the former Marsh Landing remaining within the MLGS APE is diminished.

Nonetheless, it is possible that with project implementation, previously undiscovered archaeological resources associated with Marsh Landing could be exposed during construction activities. Unless properly evaluated and managed, this could result in a significant impact to cultural resources.

It is also possible that archaeological deposits unrelated to Marsh Landing could be inadvertently exposed during project-related construction activities, which could result in a significant impact to cultural resources if such deposits were improperly evaluated and managed.

7.3.2.5 Built Environment Resources Evaluation

All buildings or structures in the APE for the proposed MLGS project that are 45 years old were evaluated in accordance with Section 15064.5(a) (2)-(3) of the CEQA guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. None of the more recently constructed buildings appear to require an evaluation as exceptionally significant. None of the built environment resources surveyed meet the criteria for listing in either the NRHP or CRHR, and none are historical resources for the purposes of CEQA. The evaluations of the properties are summarized below, and are also included in the attached DPR 523 forms (Appendix L).

3201 Wilbur Avenue

The CCPP does not appear to meet the eligibility criteria for listing in the NRHP or the CRHR, and it is not a historical resource for the purposes of CEQA, because it is not significant within the context of the

development of electrical generation, steam power plants, or PG&E (NRHP Criterion A, CRHR Criterion 1). Instead, the plant was one of many such plants built to meet the burgeoning post World War II demand for electricity. Companies throughout California—including PG&E, Southern California Electric, San Diego Gas and Electric, and others—built many plants like the CCPP to meet the growing electric needs. California electrical companies chose to build steam power plants because of the dwindling number of available hydroelectric sites, the lower cost for construction of this type of plant compared to hydroelectric, and the ready supply of oil and gas. These plants were built within a short period of time and with standardized plans. The CCPP was completed in 1953 and was neither the first nor the last of such plants built by PG&E whose other facilities the Kern plant (1948-1950) and Moss Landing (1950-1952), as well as Morro Bay (1955), the Hunters Point addition (1958), Humboldt Bay (1956-1958), and Pittsburg (1959-1960). These PG&E plants joined many other plants built by Southern California Edison (SCE) in the greater Los Angeles area, still more built across the state by other power companies. The CCPP cannot be singled out as individually significant within either the PG&E projects, or other systems of the 1950s. Each of the plants was important to the area it served, providing power for the increasing demands of new technology and development. Nevertheless, within the context of postwar growth, and the evolution of power generation during this time, the CCPP does not embody any unique significance.

The buildings and structures within the plant complex are also not significant for their design or construction (NRHP Criterion C, CRHR Criterion 3). PG&E built the CCPP as part of a system-wide program to increase its number of steam power plants, and its similarity to others built during the same era was reported in trade publications. This coverage did not indicate any historically significant attributes of the plan in terms of its type, period, or method of construction, nor has the plant been identified by subsequent histories of the evolution of power generating technology. The plant is of the "semi-outdoor" variety that became common in California during this period. The turbines of the five original units are housed in a steel frame, brick-clad building, but the steel framing around the boilers and appurtenant equipment were left open—a design that allowed the plant to be built faster and more economically, and to be easily maintained. The semi-outdoor plan and the systems installed at Contra Costa were typical of technology popular at the time and the facility and its components are not significant within this context.

The CCPP does not have direct important associations with the life of a historically significant person (NRHP Criterion B, CRHR Criterion 2), nor is it significant under NRHP Criterion D or CRHR Criterion 4, as a potential source of information. This property is well documented through trade publications, company records, and construction documents and is not a principal source of important information.

The full evaluation of this property is located in Appendix L (JRP, 2008).

7.3.3 Cumulative Impacts

Given that project implementation would not result in effects to known important cultural resources, it is unlikely that the project could have significant cumulative effects to cultural resources. As noted above, however, it is possible that previously undiscovered archaeological resources may be exposed during construction activities. Unless properly evaluated and managed, this could result in a cumulative effect to such inadvertently exposed resources.

7.3.4 Mitigation Measures

Measures to manage cultural resources in accordance with applicable laws and regulations are described below. The mitigation measures and procedures described would apply to any cultural resources in the APEs defined for the project, or cultural resources recommended as not significant, and such recommendations are concurred with by the CEC and State Historic Preservation Officer (SHPO),

regardless of facility component. With implementation of the measures listed below, no significant unavoidable impacts to known cultural resources are expected to occur.

CUL-1 Avoidance

Although no archaeological sites have been identified within the project's APE, if a potentially significant cultural resource is discovered during construction, if possible, the construction plans will be modified to avoid that resource. If there are no feasible means to avoid the resource, the cultural resource will be tested; if found significant, the measures for mitigation described below will be implemented. These will be done in consultation with the CEC.

CUL-2 Physical Demarcation and Protection

Although no archaeological sites have been identified within the project's APE, if a potentially significant cultural resource is discovered during construction and it can be avoided by modification of project plans, the cultural resource will be temporarily fenced or otherwise demarcated on the ground, and the area will be designated environmentally sensitive. Construction equipment will be directed away from the cultural resource and construction personnel will be directed to avoid entering the area. Where cultural resource boundaries are unknown, the protected area will include a buffer zone with a 100-foot radius. In some cases, additional archaeological work may be required to demarcate the boundaries of the cultural resource to ascertain and ensure avoidance.

CUL-3 Crew Education

Prior to the beginning of construction, the construction crew will be informed of the regulatory protections afforded cultural resources. The crew will also be informed of procedures relating to the inadvertent exposure of archaeological resources. The crew will be cautioned not to collect artifacts, and asked to inform a construction supervisor in the event that cultural remains are uncovered.

CUL-4 Archaeological Monitoring

Given the historic presence of Marsh Landing within the immediate vicinity of the MLGS project, it is recommended that initial grading or excavation within the Mirant property be monitored by an archaeologist. If subsurface materials are uncovered, construction work in the immediate vicinity will be temporarily halted and the emergency discovery procedures described below will be implemented.

CUL-5 Formal Compliance with CEQA Section 15064.5 and 15126.4 and Section 106 of the NHPA

In the event that a resource cannot be avoided during the placement of any project facility, further archaeological work will be undertaken as appropriate to assess the importance/significance of the resource prior to the project implementation.

CUL-6 Mitigation for Resource

If unanticipated resources are discovered during construction, they will be addressed under the procedures set forth in CEQA Section 15064.5. If possible, the resource will be avoided first through design modification; or second, through protective measures as described above. If the resource cannot be avoided, the project archaeologist will consult with the CEC and SHPO with regard to resource significance. If it is determined that the resource is significant, then measures

to mitigate impacts will be devised in consultation with the CEC and SHPO, and will be carried out by the Applicant.

7.3.5 Laws, Ordinances, Regulations, and Standards

The project will be constructed and operated in accordance with all LORS applicable to cultural resources. Federal, state, and local LORS applicable to cultural resources are discussed below and summarized in Table 7.3-1.

7.3.5.1 Federal

Federal laws, procedures, and policies affecting the treatment of cultural resources include the Antiquities Act of 1906, Public Law 59-209, Executive Order 11593, Section 106 of the NHPA of 1966 (Public Law 89-665), as amended, Public Law 93-291, the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), the Federal Land Policy Management Act (Public Law 94-94-579), and regulations 36 CFR 60 and 36 CFR 800.

For management purposes, a cultural resource must be recommended as either eligible or not eligible to then NRHP to determine effect and the need for mitigation of effect. If the property (cultural resource) is determined eligible, then a determination of effect, as per 36 CFR 800, must be provided. If the property is identified as not eligible, then no determination of effect or mitigation measures is necessary. Recommendations are reviewed and approved by the SHPO and the Advisory Council on Historic Preservation (ACHP).

The NHPA requires all federal agencies to assess the effects of any agency-sponsored undertaking on cultural resources. The federal agency is responsible for project compliance with Section 106 of the NHPA and its implementing regulations, set forth by the ACHP at 36 CFR 800.

Four evaluation criteria to determine a resource's eligibility to the NRHP, in accordance with the regulations outlined in 36 CFR 800, are identified at 36 CFR 60.4. To determine site significance through application of National Register criteria, several levels of potential significance that reflect different (although not necessarily mutually exclusive) values must be considered. As provided in 36 CFR 60.4:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance 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,
>
> (b) That are associated with the lives of persons significant in our past,
>
> (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.

These evaluation criteria are used to help determine what properties should be considered for protection from destruction or impairment resulting from project-related activities (36 CFR 60.2).

7.3.5.2 State

The basic goal of the CEQA is to develop and maintain a high-quality environment now and in the future. The CEQA Guidelines provide a framework for the analysis of impacts to archaeological resources.

In considering impact significance under CEQA, the significance of the resource itself must first be determined. At the state level, consideration of significance as an "important archaeological resource" is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the draft criteria regarding resource eligibility to the CRHR.

Generally under CEQA, a historical resource (these include built-environment historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CEQA Section 15064.5 and defined as any resource that:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage,

2. Is associated with lives of persons important in our past,

3. 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

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

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

(a) The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information,

(b) The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type, or

(c) The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person

A nonunique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to nonunique archaeological resources and resources that do not qualify for listing on the CRHR receive no further consideration under CEQA.

Under CEQA Appendix G, a project would potentially have significant impacts if it would cause substantial adverse change in the significance of one of the following:

(a) A historical resource (i.e., a cultural resource eligible for the CRHR),

(b) An archaeological resource (defined as a unique archaeological resource that does not meet CRHR criteria),

(c) A unique paleontological resource or unique geologic feature (i.e., where the project would directly or indirectly destroy a site), or

(d) Human remains (i.e., where the project would disturb or destroy burials).

A nonunique archaeological or paleontological resource is given no further consideration other than the simple recording of its existence by the CEQA lead agency.

Potential impacts to identified cultural resources need only be considered if the resource is an "important" or "unique archaeological resource" under the provisions of CEQA Sections 15064.5 and 15126.4 and the eligibility criteria. If a resource cannot be avoided, then the resource must be examined vis-à-vis the provisions of CEQA Sections 15064.5 and 15126.4 and of the eligibility criteria as an "important" or "unique archaeological resource." In many cases, determination of a resource's eligibility can only be made through extensive research and archaeological testing. No mitigation measures are required unless previously undiscovered cultural resources are detected. Mitigation under CEQA must address impacts to the values for which a cultural resource is considered important. To mitigate adequately, it must therefore be determined what elements make a site eligible for the CRHR. The first line of mitigation is complete avoidance, when feasible, of all cultural resources.

7.3.5.3 Local

On the local level, compliance with the Contra Costa County General Plan (CCCGP) is also necessary. According to the CCCGP, a goal of the county is to identify and preserve important archaeological and historic resources (within the county). In order to achieve this goal, a number of policies, measures, and programs targeting the management of cultural resources have been adopted by the county. In general, compliance with CEQA satisfies the county's concerns for cultural resources.

According to the City of Antioch's General Plan (2003), their objective is to preserve archaeological, paleontological, and historic resources within the Antioch Planning Area for the benefit and education of future residents. To meet this objective, a several policies, targeting the management of cultural resources have been adopted by the county. Investigation and analysis as required under CEQA satisfies the City's requirements for compliance.

7.3.6 Involved Agencies and Agency Contacts

Both the City of Antioch and Contra Costa County were contacted regarding information about the General Plans for each agency. Unless consultation with SHPO becomes necessary, the NAHC is the only agency involved with the management of cultural resources for the project. Appendix L (URS, 2007) contains the correspondence with the NAHC concerning this particular project.

Specific contacts for the NAHC, the City of Antioch and Contra Costa County are listed below, should the need for additional consultation arise.

7.3.7 Permits Required and Permit Schedule

Other than certification from the CEC, no state, federal, or local permits are required by the project for the management of cultural resources.

As described previously, consultation with SHPO and ACHP would be required under Section 106 if federal involvement is to occur and significant cultural resources were to be affected by the project.

7.3.8 References

Antioch Chamber of Commerce
1952 *This is Antioch*.

Antioch Historical Society
2005 *Antioch.* Arcadia, San Francisco.

Antioch Ledger
1953 April 7, 1953.

Atwater, B.F.
1980 Attempts to Correlate Late Quaternary Climatic Records Between San Francisco Bay, the Sacramento-San Joaquin Delta and the Mokelumne River, California. Ph.D. Dissertation. University of Delaware, Newark.

Beardsley, Richard K.
1954 Temporal and Areal Relationships in Central California Archaeology. 2 Parts. *University of California Archaeological Survey Reports* 24-25. Berkeley.

Beck, W. A. and Y. D. Haase
1974 *Historical Atlas of California.* University of Oklahoma Press, Norman.

Bennyhoff, James A.
1977 *Ethnogeography of the Plains Miwok*. Center for Archaeological Research at Davis, Publication 5.

Bethel, John P. (General Editor)
1969 *Webster's Geographical Dictionary*. G. & C. Merriam Co. The Collegiate Press. Menasha, Wisconsin.

Bice, Richard B., William Bullough, and Richard Orsi
1988 *The Elusive Eden: A New History of California.* Alfred A. Knopf, New York.

Boyson, Sue
1964 Some Historical Highlights of the History of Pittsburg. Pittsburg, CA. n.p.

Brown, J. L.
1958 *The Mussel Slough Tragedy.* n.p.

Bryant, Keith L.
1974 *History of the Atchison, Topeka and Santa Fe Railway.* Macmillan, New York.

California Energy Commission (CEC)
2006 Rules of Practice and Procedure & Power Plant Site Certification Regulations Revisions, 04-SIT-2, December 14, 2006.

Contra Costa County Development Company
1943 *Contra Costa County*. Contra Costa County Development Company, Richmond, California.

Contra Costa County Historical Society
2007 "Marsh Landing," The History Center. October 25, 2007.

Contra Costa County Title Company
1930 *Industrial, Agricultural and Road Map of Contra Costa County*. Thomas Brothers, Oakland.

Cook, Sherburne F.
1955 The Epidemic of 1830-1833 in California and Oregon. *University of California Publications in American Archaeology and Ethnology*. 43(3):303-326. Berkeley.

1960 Colonial Expeditions to the Interior of California: Central Valley, 1800-1820. *University of California Anthropological Records* 16(6):239-292. Berkeley.

1962 Expeditions to the Interior of California: Central Valley, 1820-1840. *University of California Anthropological Records* 20(5):151-213. Berkeley.

Donley, Michael W., Stuart Allan, Patricia Caro, and Clyde P. Patton
Atlas of California. Pacific Book Center, Culver City, California.

Emanuels, George
n.d. *California's Contra Costa County: An Illustrated History*, Panorama West Books, Fresno, California.

Environmental Science Associates
1998 Draft Environmental Impact Report. Pacific Gas and Electric Company's Application for Authorization to Sell Certain Generating Plants and Related Assets Application No. 98-01-008. Prepared for the California Public Utilities Commission. San Francisco.

Fredrickson, David A.
1973 Early Cultures of the North Coast Ranges, California. Ph.D. Dissertation, University of California, Davis; Department of Anthropology.

Gifford, E. W.
1926 Miwok Lineages and the Political Unit in California. *American Anthropologist* 28:389-401.

Gudde, Erwin G.
1969 *California Place Names*. Third edition. University of California Press. Berkeley

Haviland, P. A.
1915 *Contra Costa County, California.* Oakland Blueprint Co., Oakland.

Herbold, Bruce and Peter B. Moyle
1989 The Ecology of the Sacramento-San Joaquin Delta: A Community Profile. Biological Report 85(7.22), U.S. Department of Interior Fish and Wildlife Service. Washington, D.C.

History of Contra Costa County, California
1882 Reprint, 1994. Brooks-Sterling Company, Oakland, California.

Hoover, Mildred B., Hero E. Rensch, Ethel G. Rensch, and William N. Abeloe
1990 *Historic Spots of California*. Revised by Douglas E. Kyle. Stanford University Press. Stanford, California.

Hulaniski, Frederick J.
1917 *The History of Contra Costa County, California.* Elms Publishing Co., Berkeley, CA.

JRP (JRP Historical Consulting, LLC)
2008 Historical Resources Inventory and Evaluation Report MLGS. Prepared for URS Corporation. On file at URS Corporation, San Francisco, California.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology Bulletin* 78. Washington, D.C. [Reprinted, Dover Publications, New York, 1976.]

Levy, Richard
1978 Eastern Miwok. In *California*, edited by Robert F. Heizer, pp. 398-413. *Handbook of North American Indians*, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Lillard, J. B., R. F. Heizer, and F. Fenenga
1939 *An Introduction to the Archaeology of Central California*. Sacramento Junior College, Department of Anthropology Bulletin 2. Sacramento.

Lillard, J. B., and W. K. Purves
1936 *The Archaeology of the Deer Creek-Cosumnes Area, Sacramento County, California.* Sacramento Junior College, Department of Anthropology Bulletin 1. Sacramento.

McMahon, T.A.
1908 *Official Map of Contra Costa County.* T.A. McMahon, s.l.

Moran, Mike
"For Over 100 Years"

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, New York.

Nichols, F. H., J. E. Cloern, S. N. Luoma, and D. H. Peterson
1986 The Modification of an Estuary. *Science* 231:567-573.

Owens, Kenneth N.
1991 *Sacramento-San Joaquin Delta, California Historical Resources Overview*. Report submitted to the U.S. Army Corps of Engineers, Sacramento District.

Powers, Stephen
1877 *Tribes of California*. Contributions to North American Ethnology Volume III. U.S. Department of the Interior, Geographical and Geological Survey of the Rocky Mountain Region, Washington, D.C. [Reprinted by University of California Press, Berkeley 1976].

Purcell, Mae Fisher
1940 *History of Contra Costa County*. Gillick Press, Berkeley, California.

Rice, Richard B., William Bullough, and Richard Orsi
1988 *The Elusive Eden*: *A New History of California*. Alfred A. Knopf, New York.

Richmond Martinez Title Company
1952 *Map of Antioch and Vicinity*. Richmond Martinez Title Company, Martinez, California.

Rollins, G. L.
1977 *The Peripheral Canal Wildlife Inventory.* California Department of Fish and Game, Report 106. Sacramento.

Sanborn Insurance Company
1926 *Antioch, Contra Costa County.* Sanborn Insurance Company, New York.

Schenk, W. Egbert
1926 Historic Aboriginal Groups of the California Delta Region. *University of California Publications in American Archaeology and Ethnology*. 23:123-146. Berkeley.

Schenk, W. E. and E. J. Dawson
1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology*. 25:289-413. Berkeley.

Shipley, William F.
1978 Native Languages of California. In *California*, edited by Robert F. Heizer, pp. 80-90. *Handbook of North American Indians*, Vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Shlemon, R. J. and E. L. Begg
1975 Late Quaternary Evolution of the Sacramento-San Joaquin Delta, California. In *Quaternary Studies*, edited by R. P. Suggate and M. Cresswell, pp. 259-266. The Royal Society of New Zealand, Wellington.

Southern Energy
2000 Section 8.3 Cultural Resources, *Application for Certification: Contra Costa Power Plant Unit 8 Project*. April 2000.

Stoll, Harry
2007 "One of the Last Antioch Pioneers," *The Brentwood Press*. February 2, 2007.

Strand, R. G. and J. B. Koenig
1965 Sacramento. Geologic Map of California, California Division of Mines and Geology.

Tatam, Robert Daras
1993 *Old Times in Contra Costa.* Highland Publishers, Pittsburg, CA.

Thompson, John
1982 Discovering and Rediscovering the Fragility of Levees and Land in the Sacramento-San Joaquin Delta, 1870-1879 and Today. Department of Water Resources, Sacramento, California.

URS Corporation
2008 Cultural Resources Technical Report for the MLGS. Prepared by URS Corporation. On file at URS Corporation, San Francisco, California.

U.S. Census Bureau
1870, 1880, 1900, 1910. 1919, 1920, 1930 "Contra Costa County," Population Schedules.

USGS
1908 *Antioch Quadrangle,* 15 minute, 1:62,500. USGS, Washington.

1953 *Antioch North Quadrangle,* 7.5 minute, 1:24,000. USGS, Washington.

Waters, L. L.
1950 *Steel Trails to Santa Fe.* University of Kansas Press, Lawrence.

Weinstein, Dave
2002 "Who Was John Marsh?" San Francisco Chronicle. December 7, 2002.

Wolfe, Anne
2007 "John Marsh," East Contra Costa Historical Society and Museum, accessed at http://www.theschoolbell.com/history/early/marsh.html, November 9, 2007.

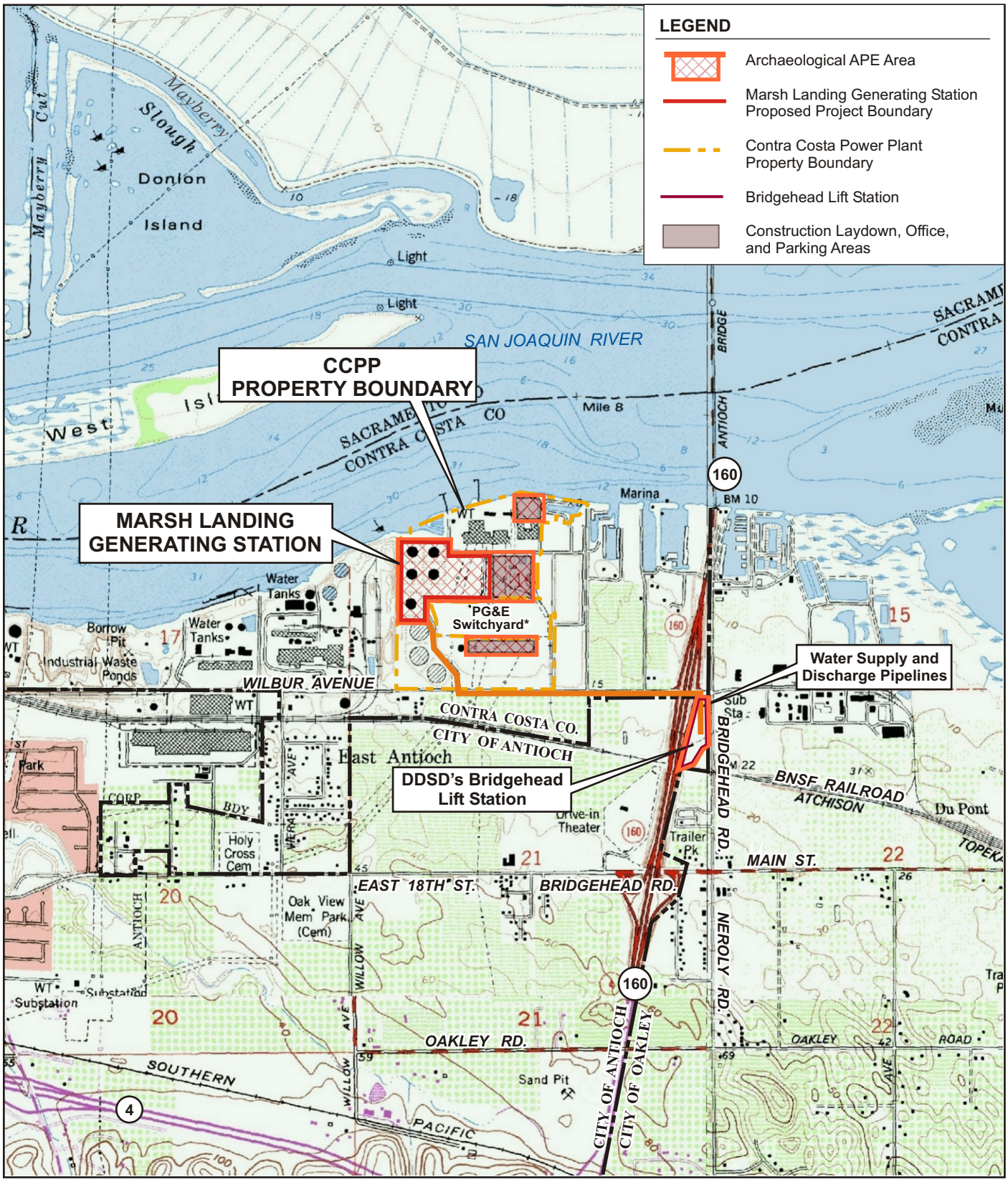
❖❖❖

Table 7.3-1
Applicable Cultural Resources Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	AFC Section
Federal			
Section 106 of the National Historic Preservation Act	Federal regulation affecting the treatment of cultural resources.	SHPO	7.3.5.1
State			
California Environmental Quality Act	Requires evaluation of impacts of project on cultural resources.	CEC	7.3.5.2
Local			
Contra Costa County, Planning Department	According to the Contra Costa County General Plan, a goal of the county is to identify and preserve important archaeological and historic resources within the county.	Contra Costa County	7.3.5.3
City of Antioch General Plan	The general plan's objective is to preserve archaeological, paleontological, and historic resources within the Antioch Planning Area for the benefit and education of future residents.	City of Antioch	7.3.5.3

Table 7.3-2
Involved Agencies and Agency Contacts

Issue	Agency/Address	Contact/Title	Telephone
Native American traditional cultural properties	Native American Heritage Commission 915 Capitol Mall, Room 364 Sacramento, CA 95814	Ms. Debbie Pilas-Treadway Associate Government Program Analyst	(916) 653-4038
Preservation of cultural resources	Contra Costa County, Planning Department, 651 Pine Street, 4th Floor - North Wing, Martinez, CA 94553	Patrick Roch, Division Manager, Advanced Planning	(925) 335-1242 proch@cd.cccounty.us
Preservation of cultural resources	City of Antioch – Community Development Department P.O. Box 5007 Antioch, CA 94531	Victor Carniglia, Deputy Director	(916) 779-7035



Source:
USGS Topographic Maps, 7.5 Minute Series:
Antioch North, California, 1978
Antioch South, California, 1980
Jersey Island, California, 1978
Brentwood, California, 1978

* The PG&E Switchyard and PG&E Gateway Project are not part of the Mirant Property.

0 2000 4000

Scale in Feet
1:24,000

N

ARCHAEOLOGICAL AREA OF POTENTIAL EFFECTS

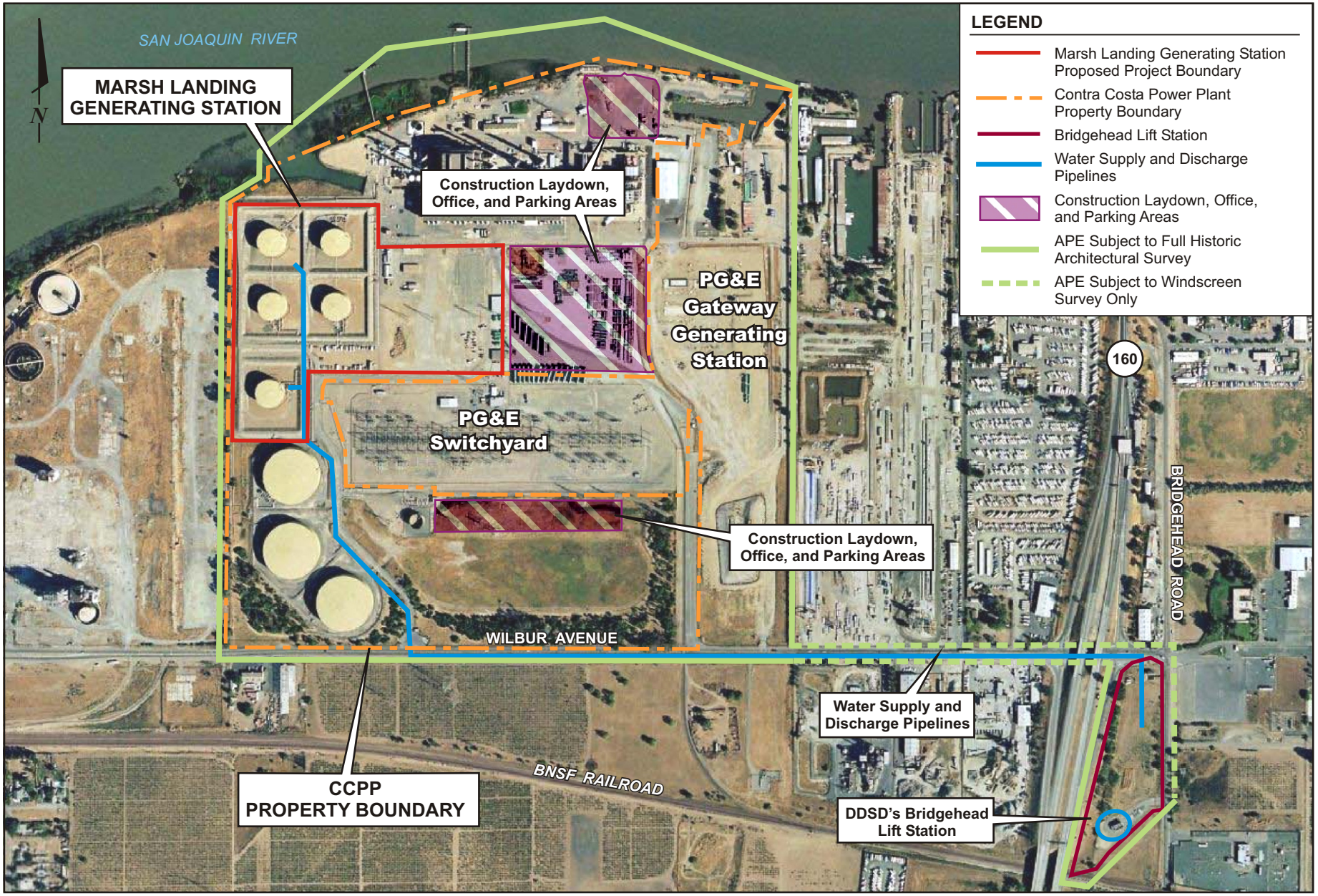
May 2008
28067344

Marsh Landing Generating Station
Mirant Marsh Landing, LLC
Contra Costa County, California

URS

FIGURE 7.3-1

5/21/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-1_archaeo APE.cdr



Source: Google Earth 2006

0 500 1000

Approximate Scale in Feet

5/21/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-2_historic APE.cdr

HISTORIC ARCHITECTURAL AREA OF POTENTIAL EFFECTS

May 2008
28067344

Marsh Landing Generating Station
Mirant Marsh Landing, LLC
Contra Costa County, California

URS

FIGURE 7.3-2

Source: Bennyhoff, 1977

ETHNOGRAPHIC TRIBAL TERRITORY OF THE BAY MIWOK

May 2008
28067344

Marsh Landing Generating Station
Mirant Marsh Landing, LLC
Contra Costa County, California

URS

FIGURE 7.3-3

5/01/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-3_ethno territory.cdr

Source:
Marsh's Landing, ca. 1853. Detail from: [Map of the Rancho Los Meganos, n.d.], Land Case No. 107, by J. E.Whitcher. US District Court, Northern District California, Bancroft Library, UC Berkeley.

Approximate North;
No Scale

1853 RANCHO LOS MEGANOS MAP

Marsh Landing Generating Station
May 2008 Mirant Marsh Landing, LLC
28067344 Contra Costa County, California

URS

FIGURE 7.3-4

5/01/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-4_1853 marsh landing.cdr

Source:
USGS; Collinsville, California Quadrangle, 1918 (Antioch, CA)

1918 USGS COLLINSVILLE TOPOGRAPHIC QUADRANGLE

0 0.5 1
Approximate Scale in Miles

May 2008
28067344

Marsh Landing Generating Station
Mirant Marsh Landing, LLC
Contra Costa County, California

URS

FIGURE 7.3-5

5/02/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-5_1918-USGS collinsville quad.cdr

Source:
USGS; Collinsville, California Quadrangle, 1918 (Antioch, CA)

0 1400 2800

Approximate Scale in Feet

1918 USGS COLLINSVILLE TOPOGRAPHIC QUADRANGLE SHOWING CCPP LAYOUT

May 2008
28067344

Marsh Landing Generating Station
Mirant Marsh Landing, LLC
Contra Costa County, California

URS

FIGURE 7.3-6

5/21/08 vsa ..T:\Mirant Contra Costa-Marsh Landing\Graphics\7.03 Cultural\7.3-6_1918-USGS collinsville_site.cdr