

D.5 Cultural Resources

This section discusses the potential for the Proposed Project and alternatives to impact both previously unidentified and unanticipated cultural resources in the project area during construction and operation. Background information for the project area is provided (Section D.5.1) along with a list of applicable regulations (Section D.5.2). Potential impacts and mitigation measures for the Proposed Project are outlined by segment in Section D.5.3.

Information for the Proposed Project and Applicant Proposed Alternatives compiled in the following section was gathered from the *Proponent's Environmental Assessment* (PG&E, 2002) Chapter 7, prepared by CH2M Hill for PG&E. Background research on other alternatives was compiled by William Self Associates, Inc. (WSA). The data collection methodology for both studies included the following:

- Record search conducted at the Northwest Information Center (NWIC) of the California Historic Resource Information System (CHRIS) consisting of a review of relevant historic maps, and excavation and survey reports. Sites forms for recorded sites within a 0.5-mile radius of the project route were copied.
- The Native American Heritage Commission (NAHC) was contacted for information on sacred lands and for a contact list of local tribal representatives or most likely descendents (MLD's).
- Field surveys were conducted in order to verify the location of any previously identified cultural resources and to cover previously unsurveyed lands within the Area of Potential Effect (APE) defined as a 200 foot-wide inspection corridor (100 feet from centerline). Field surveys are useful for identifying aboveground or surface cultural resources and for identifying high probability areas. However, negative pedestrian survey results do not preclude the possibility that buried archaeological deposits could be discovered. CH2M Hill's intensive pedestrian field surveys were conducted by James C. Bard, Robin D. McClintock, and James J. Sharpe. WSA's field surveys were conducted by Kyle Brown and Adam Marlow.

In the process of conducting the archival research and field surveys described above, CH2M Hill found "no evidence of surface or subsurface archaeological sites in the project areas proposed for above-ground and below-ground construction (substations, towers, etc.)." Fifteen cultural resources were identified in the vicinity of the Proposed Project area, defined as being within or adjacent to the project area if the resource is "within 200 feet of a Project component."

WSA's archival research and field surveys resulted in the identification of 21 surface or subsurface archaeological sites or historic properties within 0.25 miles of alternative project routes, including two previously unrecorded prehistoric sites discovered during WSA's field survey. Eight cultural resources were identified within 200 feet of alternative routes.

Information gathered from archival research and field surveys were also used to assess the potential for encountering previously unrecorded resources in the project area. Significant prehistoric sites are known to occur in the project area near the former bay shore and along stream banks. These locations are designated as Archaeological High Probability Areas due to the high probability for encountering buried cultural deposits.

Native American Consultation Letters were sent out by WSA on June 2nd, 2003, to Native American Heritage Commission (NAHC) listed San Mateo County Contacts requesting information on any sacred lands or sites within the proposed and alternative project routes. Follow-up phone calls were made on June 19, 2003. No additional information on sacred sites was gathered as a result of consultation. NAHC correspondence letters and a table of contacts and comments (which includes Native American comments) are presented in Appendix 6.

D.5.1 Environmental Setting for the Proposed Project

Natural Setting. The Jefferson-Martin project is located on the San Mateo Peninsula, a landform that divides the Pacific Ocean from the southern San Francisco Bay, and connects the City of San Francisco with the Santa Clara Valley. The Peninsula is characterized by a diversity of habitats including salt marsh estuary along the former bay shores, alluvial plains, foothills, rift valley, coast range ridgelines, marine terraces and rocky ocean shores (Hynding, 1982).

The southern overhead portion of the proposed Jefferson Martin 230 kV Transmission Line Project follows the San Andreas Valley, and the northern underground portion is proposed along the alluvial plains, tidal flats, and marshlands that would have bordered the San Francisco Bay prior to historic wetland reclamation. The San Andreas Valley follows the San Andreas Fault and runs southeast to northwest. San Andreas Creek, for which the fault was named, was dammed to form a series of water reservoirs for the City of San Francisco. Many other watercourses in the region have either been dammed (San Mateo Creek, Laguna Creek), or channelized (Colma Creek, Twelve Mile Creek, Belmont Creek, Pulgas Creek, and Redwood Creek).

Gold Rush-era siltation and historic settlement have effectively filled thousands of acres of the original bay shores along the northern, underground portion of the Jefferson-Martin Project. As a result, the original shoreline would have been located just east of the underground segments of the Proposed Project. Estuary along the former bay shores would have offered abundant food resources to prehistoric human populations including sea otter, salmon, sturgeon, abalone, and other shellfish. Grizzly bear and elk, among other mammals, would have been available in the foothills of the Santa Cruz Range.

Ethnographic Background. At the time of initial contact between European explorers and the Native Californian, the area that is now San Francisco was inhabited by a people who were of Penutian linguistic stock and who spoke the Ramaytush language (Levy, 1978; Shipley, 1978). These people, referred to as Costanoan, reaped the benefit of living in a bountiful, temperate environment. Abundant marine and terrestrial resources made both agriculture and animal husbandry unnecessary.

Evidence of the success of their hunter/gatherer subsistence strategy may be seen in the number of flourishing village sites known to have existed at the time of contact with the Spanish (Levy, 1978). The detritus of these sites was found in numerous locations around the shoreline of San Francisco Bay in the form of shell mounds – large accumulations of shell, ash, human artifacts, and occasionally human remains. With the influx of European settlers in the mid-nineteenth century, most of these sites were destroyed or covered by buildings and roads (Alvarez, 1992).

The term Costanoan is derived from the Spanish word *Costaños*, or “coast people,” but its application as a means of identifying this population is based in linguistics. The Costanoans spoke a language now considered one of the major subdivisions of the Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock (Shipley, 1978). Costanoan actually designates a family of eight

languages. Of these, Ramaytush was the language spoken by the estimated 1400 people who occupied the area now designated as San Francisco and San Mateo Counties (Levy, 1978). Tribal groups occupying the area from the Pacific Coast to the Diablo Range and from San Francisco to Point Sur spoke the other seven languages of the Costanoan family. Modern descendants of the Costanoan prefer to be known as Ohlone and formed a corporate entity in 1971, the Ohlone Indian Tribe. They are named after the *Oljón* tribal group, which occupied the San Gregorio watershed in San Mateo County (Bocek, 1986). The two terms are used interchangeably in much of the ethnographic literature.

On the basis of linguistic evidence, it has been suggested that the ancestors of the Ohlone arrived in the San Francisco Bay Area about 500 A.D. from the Sacramento–San Joaquin Delta region. The ancestral Ohlone displaced speakers of a Hokan language and were probably responsible for the artifact assemblages that constitute the *Augustine Pattern* described above (Levy, 1978).

Leadership was provided by a chief, who inherited the position patrilineally and who could be either a man or woman. The chief and a council of elders served mainly as community advisers. Specific responsibility for feeding visitors, providing for the impoverished, and directing ceremonies, hunting, fishing, and gathering activities fell to the chief. Only in times of warfare was the chief's role as absolute leader recognized by group members (Levy, 1978).

Extended families lived in domed structures thatched with tule, grass, wild alfalfa, ferns or carrizo (Levy, 1978). Semi-subterranean sweathouses were built into pits excavated in stream banks and covered with a structure against the bank. The tule raft, propelled by double-bladed paddles similar to those that were used in the Santa Barbara Channel Island region, were used to navigate across San Francisco Bay (Kroeber, 1970).

Warfare was quite common in Costanoan culture and usually centered on territorial disputes. Battles were waged with other Costanoan tribal groups as well as with the Esselen and the Salinan to the south, and the Northern Valley Yokuts to the east (Levy, 1978). Music, ritual and myth were extensive in Costanoan life. Song was employed in the telling of myths, in hunting and courtship rituals, and in other ceremonial activities. Musical instruments were typically whistles made of bird bone, and flutes and rattles made of wood from the alder.

The Ramaytush usually cremated a corpse immediately upon death but, if there were no relatives to gather wood for the funeral pyre, interment occurred. Mortuary goods were all or most of the personal belongings of the deceased (Levy, 1978).

Mussels were an important staple in the Costanoan diet as were acorns of the coast live oak, valley oak, tanbark oak and California black oak. Seeds and berries, roots, grasses, and the meat of deer, elk, grizzly, sea lion, rabbit, and squirrel also contributed to the Costanoan diet. Careful management of the land through controlled burning served to insure a plentiful and reliable source of all these foods (Kroeber, 1970; Levy, 1978).

The arrival of the Spanish in the San Francisco Bay Area in 1775 led to the rapid demise of native California populations. Diseases, declining birth rates, and the effects of the mission system served to eradicate the aboriginal life ways (which are currently experiencing resurgence among Ohlone descendants). Brought into the missions, the surviving Costanoan along with former neighboring groups of Esselen, Yokuts, and Miwok were transformed from hunters and gatherers into agricultural laborers (Cambra, et al., 1996; Levy, 1978; Garaventa, 1983; Shoup and Milliken with Brown, 1994). With abandonment of the mission system and Mexican takeover in the 1840s, numerous ranchos were established. Generally, the few Native Californians who remained were then forced, by necessity, to work on the ranchos.

Prehistoric Background. The development of a taxonomic framework for Central California archaeology began when Nels C. Nelson of the University of California at Berkeley conducted the first intensive survey of the San Francisco Bay region between 1906 and 1908. Nelson recognized the Bay Area as a discrete archaeological entity and argued that the intensive use of shellfish, a subsistence strategy reflected in both coastal and bay shore middens, was an indication of a general economic unity in the prehistoric region (Moratto, 1984).

In 1911, Nelson supervised excavations at archaeological site CA-SFR-7 (the Crocker Mound) near Hunters Point, later dated to between 3,000–1,500 B.P. Archaeological components from this same period were identified in Santa Clara County in 1911 by L. L. Loud, who was excavating CA-SCL-1 (the Ponce, Mayfield, or Castro Mound site), and in San Mateo County in 1941-1942 by R.J. Drake who conducted excavations at CA-SMA-23 (Mills Estate) in San Bruno (Moratto, 1984).

The excavations by Nelson and Loud provided impetus for investigation into the prehistory of Central California that began in earnest in the 1920s. Stockton-area amateur archaeologists J.A. Barr and E.J. Dawson excavated numerous sites and made substantial collections in the area from 1893 to the 1930s. On the basis of artifact comparisons, Barr identified what he felt were two distinct cultural traditions. Dawson later refined his work into a series of “Early,” “Middle,” and “Late” sites (Ragir, 1972; Schenck and Dawson, 1929).

Professional or academic-based archaeological investigation began in the 1930s when J. Lillard and W. Purves of Sacramento Junior College formed a field school which conducted excavations throughout the Sacramento Delta area. They identified a three-phase sequence, similar to Barr and Dawson's, based on artifact and burial data defined as “Early,” “Intermediate,” and “Recent” cultures (Lillard and Purves, 1936). This system was refined and further developed in 1948 and 1954 by Richard Beardsley who extended it to include the San Francisco Bay region. He divided prehistory into Early, Middle, and Late Horizons; this was subsequently termed the Central California Taxonomic System (CCTS) (Lillard, Heizer, and Fenenga, 1939; Beardsley, 1948; Moratto, 1984) a system which subsequently was widely applied to site dating and taxonomy throughout Central California.

Much of the subsequent archaeological investigation in Central California focused on refinement of the CCTS through analysis of such factors as environmental change, settlement and subsistence strategy, exchange, population movement, and other topics. These studies led to the establishment of subsequences for many regions of Central California (Figure D.5-1). The well-received is Fredrickson's (1973a) concept of cultural “patterns” (see also Moratto, 1984). His concept centers on the understanding that local variations to a widespread culture-horizon existed.

At the same time Fredrickson introduced the notion of cultural pattern, he utilized a period sequence consisting of a hypothetical “Early Lithic” period, a “PaleoIndian” period, as well as the “Archaic” (which he divided into Lower, Middle, and Upper periods) and “Emergent” periods (which he divided into Lower and Upper periods). The latter two of these 'period' terms were already in use (Fredrickson, 1973b). Fredrickson's pattern divisions are based on cultural content, while his period divisions are strictly chronological.

The debate continues as to the niche of the San Francisco Bay Area in regional cultural schemes. Historically, much of the debate centers on whether Bay Area prehistoric cultural patterns are totally separate from, parallel to, or convergent with the cultural evolutions of the Lower Sacramento region. Bickel (1981) presents a detailed historical analysis of the changes in thinking about the Bay Area's place in regional culture history over the years. Further analysis of the various cultural interrelationships can be found in Hughes (1994), Fredrickson (1993), and Elsasser (1986).

Figure D.5-1. Cultural Sequence Models for Central California

| Dates | Heizer (1949) | Heizer and Cook (1949) | Bennyhoff & Heizer, in Heizer (1958b) | Heizer (1964) | Bennyhoff, in Fredrickson (1968) | Ragir (1972) | Fredrickson (1974) |
|----------------|---|------------------------|--|----------------|--|--------------------|--------------------------------------|
| 1880-1500 A.D. | Phase III 1800-Phase II 1700- LATE HORIZON | LATE HORIZON | Phase 2 Late Phase 1 Middle Phase 1 Early Phase 1 | LATE HORIZON | American Period, 1850-Sutter Period, 1839-Mission Period, 1769- Phase 1d, 1100-Phase 1c, 700-Phase 1b, 300- | HOTCHKISS CULTURE | AUGUSTINE PATTERN (Hollister Aspect) |
| 500-0 B.C. | MIDDLE HORIZON | MIDDLE HORIZON | MIDDLE HORIZON | MIDDLE HORIZON | Phase 1a, Middle-Late transition | COSUMNES CULTURE | BERKELEY PATTERN (Morse Aspect) |
| 1500-2000 A.D. | EARLY HORIZON | | | | (Not Considered) | WINDMILLER CULTURE | WINDMILLER PATTERN |
| 2000-3000 A.D. | | EARLY HORIZON | EARLY HORIZON | EARLY HORIZON | | | |
| 3000-6000 A.D. | | | | --- | | | |

Source: Moratto 1984

Historic Background. The following information was summarized from Hynding (1982). The historic period began early on the Peninsula as a result of the 1769 Portola Expedition, led by Captain Gaspar de Portola. After traveling along the San Mateo coastline, Portola's party traveled inland and camped along San Andreas Creek near the present City of Millbrae before retracing their route and returning south to San Diego. A second expedition, commanded by Captain Fernando Rivera who, accompanied by Father Francisco Palou, followed the modern route of El Camino Real north up the Peninsula looking for potential locations for Spanish settlement. In order to avoid swampland, the party moved upslope and camped in the San Andreas Valley.

Mission Dolores and Mission Santa Clara were eventually established at the northern and southern ends of the Peninsula respectively. By the end of the 18th century, nearly all of the indigenous peoples from the San Mateo Peninsula were rounded up to provide labor for the missions. Rancho San Mateo, and Rancho Buri Buri were subsequently founded on the Peninsula to provide food and resources for the missions. By 1810, Rancho Buri Buri was a flourishing cattle ranch.

Between 1833 and 1845, the newly formed Mexican government began to divide up the immense church land holdings into land grants. Peninsula land grants were generally smaller than in other parts of California. Ranchos established within the current project area include Rancho Buri Buri, San Pedro, Las Pulgas, Rancho San Mateo, Guadalupe la Visitacion y Rodeo Viejo, and the Domingo Feliz rancho.

In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo, which ended the war with Mexico. California was not formally admitted to the Union until 1850. The year 1848 also marked the beginning of the California Gold Rush, which brought a massive influx of immigrants to California from all parts of the world. California's 1848 population of less than 14,000 (exclusive of Native Californians) increased to 224,000 in four years.

San Mateo County was created in 1856. The origin of many of the small towns that were to become cities along the modern Peninsula can be traced to small outposts established along El Camino Real, the old mission road between San Francisco and San Jose, the first state capitol. One such way station, Twelve-Mile House, is located within the Project Vicinity and was named for its proximity to the historic village of San Francisco.

The San Mateo Peninsula continued to provide resources to San Francisco throughout the latter half of the 19th century. Redwoods from southern San Mateo were cut down to help build the city of San Francisco. Much of the San Andreas Valley was flooded to provide water storage for the city. Railroads were established between San Francisco and San Jose. Wealth generated from the railroads allowed railroad barons to buy up much prime lands on the bay shores, effectively hindering population growth in these areas.

Significant change to San Mateo County came with the 1906 earthquake and the United States entry into World War I. After the disaster, thousands of San Francisco residents relocated south to the Peninsula. Wartime industry provided jobs and a fledgling local economy. It was at this time that San Mateo County began to be a focal point of the electronics industry. The economy and population continued to grow during the mid-20th century. Post-World War II growth fueled the creation of the Interstate Highway system and dense suburbs typical of many parts of modern San Mateo County.

D.5.1.1 Jefferson Substation to Ralston Substation

The segment follows I-280 and Cañada Road (MP 0–5). No cultural resources were identified in the vicinity of the segment. Watercourse crossings at MP 0.6, MP 2.2, and MP 3.8 are designated as Archaeological High-Probability Areas due to the potential for encountering undiscovered cultural resources.

D.5.1.2 Ralston Substation to Carolands Substation

The segment parallels I-280 and the upper and lower portions of Crystal Springs Reservoir. No cultural resources were identified in the vicinity of the segment. The watercourse crossing at San Mateo Creek (MP 6.6–6.9) is designated as an Archaeological High-Probability Area due to the potential for encountering undiscovered cultural resources.

D.5.1.3 Carolands Substation to Transition Station

The segment parallels I-280, the northern end of Lower Crystal Springs Reservoir, and San Andreas Lake. One prehistoric archaeological site (CA-SMA-23) is located outside of the Project APE in the vicinity of the project area. The area from MP 12.9–14.1 is designated as an Archaeological High-Probability Area due to the proximity to a known sensitive resource and the potential for encountering undiscovered cultural resources.

D.5.1.4 Underground Segment

The majority of cultural resources identified in the vicinity of the project area occur along portions of the underground segment. These include 12 historic structures or properties and two prehistoric sites.

San Bruno Avenue. One prehistoric archaeological site (CA-SMA-23) is located just outside of the Project APE in the vicinity of the project area. The eastern portion of San Bruno Avenue is considered an Archaeological High-Probability Area.

BART ROW. A historic stone railroad bridge (P-41-390) and two prehistoric sites (CA-SMA-299 and CA-SMA-355) are located within the Project Vicinity in the BART ROW. CA-SMA-299, originally documented on both sides of Colma Creek, is believed to be completely destroyed. No cultural resources associated with CA-SMA-299 were found during the construction of the BART SFO extension (Bocek, 1989). CA-SMA-355 is outside of the project APE, though the site boundaries are unclear because cultural materials are buried under 1.5 to 7.3 meters of fill. There are watercourse crossings at Spruce Avenue and at Colma Creek. Portions of the BART ROW may contain imported fill from the construction of the underground railway. However, construction drawings of the Proposed Project show the centerline of transmission line following the edge of the fill area. Because the precise location of the transmission line is unclear in relation to the fill area, and due to the multiple water crossings and proximity to the former bay shoreline, the entire BART ROW is considered to be an Archaeological High-Probability Area.

Colma to Martin Substation. One known historic site (CA-SMA-326/H) and six historic properties are located within the project vicinity in this segment. The southwestern portion of Lawndale Drive is considered an Archaeological High-Probability Area due to the proximity to Colma Creek. Two watercourse crossings on Guadalupe Canyon Parkway are considered to be Archaeological High-Probability Areas. The entire portion of Bayshore Boulevard is considered to be an Archaeological High-Probability Area due to the proximity to the former bay shoreline.

D.5.2 Applicable Regulations, Plans, and Standards

The Proposed Project is being evaluated under the California Environmental Quality Act by the California Public Utilities Commission as the designated Lead Agency. The following state public resource codes and CEQA regulations apply:

- **California Environmental Quality Act (CEQA): Public Resources Code Sections 5020.1, 5024.1, 21083.2, 21084.1, et seq.;** requires analysis of potential environmental impacts of proposed projects and application of feasible mitigation measures.
- **Title 14, Public Resources Code, Section 5020.1** defines several terms, including the following:
 - (f) “DPR Form 523” means the Department of Parks and Recreation Historic Resources Inventory Form;
 - (i) “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California;
 - (j) “local register of historical resources” means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution;
 - (l) “national Register of Historic Places” means the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture as authorized by the National Historic Preservation Act of 1966 (Title 16 United States Code Section 470 et seq.);
 - (q) “substantial adverse change” means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

- **Title 14, Public Resources Code, Section 5024.1** establishes a California Register of Historic Places; sets forth criteria to determine significance; defines eligible properties; lists nomination procedures.
- **Title 14, Public Resources Code, Section 5097.5** – any unauthorized removal or destruction of archaeological, paleontological resources on sites located on public lands is a misdemeanor.
- **Title 14, Public Resources Code 5097.98** prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn; sets penalties.
- **Title 14, Public Resources Code, Section 21083.2** – the lead agency determines whether a project may have a significant effect on unique archaeological resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they can't be avoided, mitigation measures shall be required; discusses excavation as mitigation; discusses cost of mitigation for several types of projects; sets time frame for excavation; defines “unique and non-unique archaeological resources”; provides for mitigation of unexpected resources; sets limitation for this section.
- **Title 14, Public Resources Code, Section 21084.1** – indicates that a project may have a significant effect on the environment if it causes a substantial change in the significance of a historic resource; the section further describes what constitutes a historic resource and a significant historic resource.
- **Guidelines for the Implementation of the California Environmental Quality Act (CEQA).** Section 15064.5 specifically addresses effects on historic and prehistoric archaeological resources, in response to problems that have arisen in the application of CEQA to these resources.
- **Title 14, Penal Code, Section 622.5** – anyone who damages an item of archaeological or historic interest is guilty of a misdemeanor.
- **California Environmental Quality Act (CEQA) Guidelines: California Code of Regulations, Sections 15000, et seq., Appendix G (j)**, specifically defines a potentially significant environment effect as occurring when the Proposed Project will “. . . disrupt or adversely affect . . . an archeological site, except as part of a scientific study.”
- **Public Resources Code, Section 5097.5.** Any unauthorized removal of archaeological resources on sites located on public lands is a misdemeanor. As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority or public corporation, or any agency thereof.

D.5.3 Environmental Impacts and Mitigation Measures for the Proposed Project

Introduction. The majority of identified historic or prehistoric resources in the vicinity of the project area are not located within the immediate boundaries of the Proposed Project (with the exception of CA-SMA-299, and P-41-390), and no adverse impacts to cultural resources are expected during the operation phase of the Proposed Project. The likelihood for adverse impacts from construction activity hinges on the potential of encountering significant and unanticipated cultural deposits during project construction. Prehistoric deposits are more likely to occur in native soils and at stream crossings and adjacent to the former bay shore, given the proximity of the project to known prehistoric sites in the area (i.e., CA-SMA-23, -74, -76, -90, -91, -105, -300).

Ground-disturbing activities associated with project construction have the highest probability of impacting any known or previously unidentified cultural resources. The Proposed Project involves both overhead

and underground components. Construction methods associated with these activities will disturb sediments to varying degrees.

Construction of the overhead line would involve grading and improvements to unpaved access roads. The replacement of transmission towers would entail soil excavation for new foundation footings. Ground disturbance associated with substation modifications would include excavation for the enlargement of existing footings and/or structures. Construction of the underground portions of the transmission line would involve open trenching for underground power lines, duct banks, and splice vaults. Typical trenches would be two feet wide and approximately six to seven feet deep. Directional boring would be utilized at the Colma Creek and Twelve Mile Creek Crossings. Soil disturbance associated with directional boring would include the excavation of a 15-foot-deep bore pit on the sending end and a 15-foot-deep trench on the receiving end.

Trenching and directional drilling activities associated with the installation of the underground portion of the transmission line presents the greatest likelihood of disturbing archaeological sediments associated with known or previously unidentified cultural deposits. Prehistoric sites are known to occur regionally near the former bay shoreline (CA-SMA-74, -76, -90, -91, -105, -300) and along stream banks (CA-SMA-299, CA-SMA 355). Trenching and directional boring will involve the displacement of large volumes of soil near the former bay shoreline along portions of San Bruno Avenue, the BART ROW, Bayshore Boulevard, and at the Colma Creek and Twelve Mile Creek crossings.

Construction associated with the installation of the overhead portion of the transmission line (including the relocation/replacement of existing transmission towers and modifications to existing substations) is considered to pose a lower risk of disturbance for any known or unanticipated resources in the area. Ground disturbance would generally be confined to specific areas that had been previously disturbed or areas considered to have a decreased likelihood for containing buried cultural materials.

Should any resources be discovered, their significance would have to be determined in relation to the criteria for eligibility to the California Register of Historic Resources (CRHR). Simply because a prehistoric site has been disturbed, or historic structures altered or removed, does not necessarily reduce the significance insofar as CRHR eligibility is concerned. Buried features of many kinds can remain undetected until being discovered during construction; at that time they must be evaluated and a determination made as to their significance.

The preferred mitigation for cultural resources under CEQA is always avoidance of the resource. Should significant resources be discovered during construction, data recovery would be required to gather sufficient information from the site to consider its loss a less than significant impact under CEQA.

D.5.3.1 Significance Criteria

The California Environmental Quality Act (CEQA) guidelines require that the Proposed Project take into consideration the potential effect of the undertaking on cultural resources. In order to evaluate the potential effect of the project on architectural and historic resources (over 45 years in age) or prehistoric archaeological resources, a record and literature search of the Proposed Project area was conducted by CH2M Hill at the Northwest Information Center (NWIC File No. 01-1514) to establish the location of previously conducted cultural resource surveys and known resources within a 0.25-mile radius of all project components. This background record search also provided a basis from which to predict the archaeological potential of the area.

In accordance with CEQA regulations, if the area has not been previously surveyed, or if surveyed and/or documented inadequately, a qualified archaeologist must then conduct a survey of all project components as a means of identifying and assessing the potential impact of the project on known or predicted cultural resources. Site significance criteria are those contained in CEQA Section 15064.5 and 36 CFR 60.4. Literature on the history, prehistory, and ethnography of the area was also consulted as an aid in developing the archaeological potential of the area, and to prepare a setting section for use in evaluating the significance of known or predicted resources.

CEQA contains provisions relative to preservation of historic (and prehistoric) cultural sites. Section 15126.4 of CEQA directs public agencies to “avoid damaging effects” on an archeological resource whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated to determine impact and develop mitigation measures.

CEQA Section 15064.5 states: Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

- (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.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for “importance” based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and record searches, and the researcher’s knowledge of and familiarity with the historic or prehistoric context associated with each site.

D.5.3.2 Applicant Proposed Measures

The Applicant Proposed Measures (APMs) shown in Table D.5-1 were outlined in the Proponent’s Environmental Assessment (PG&E, 2002) for reducing the potential impacts of construction.

D.5.3.3 Cultural Resources Impacts

Impact C-1: Construction Operations Have the Potential to Affect Known Archaeological Resources

Inadvertent impacts may occur to known archaeological resources within and in the vicinity of the project area during construction and during activities associated with transportation, storage, and maintenance of construction equipment and supplies. Impacts could also result from inadvertent or malicious vandalism or unauthorized collection of cultural resources on the surface of sites. This impact is potentially significant (Class II), mitigable to less than significant levels with implementation of Mitigation Measures C-1a through C-1c. In addition, APM 7.2 (Construction Personnel Training) is required. In APM 7.3, PG&E commits to implementation of monitoring; however Mitigation Measure C-1c provides more detail on where mitigation will take place. In APM 7.4, staging areas that have not yet been identified would be subject to pre-construction surveys.

Table D.5-1. Applicant Proposed Measures – Cultural Resources

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|---|---|
| APM 7.1 Cultural Resources Treatment Plan (CRTP) | <p>PG&E shall develop a Cultural Resources Treatment Plan (CRTP) for High-Probability Areas identified in subsection 7.3.2, including procedures for protection and avoidance of Environmentally Sensitive Areas (ESAs) located within archaeological High-Probability Areas, evaluation and treatment of the unexpected discovery of cultural resources including Native American burials; detailed reporting requirements by the Project archaeologist; curation of any cultural materials collected during the Project; and requirements to specify that archaeologists and other discipline specialists meet the Professional Qualifications Standards mandated by the California Office of Historic Preservation (OHP).</p> <p>Current Project design ensures that known and recorded cultural resources will be avoided during construction, and operation and maintenance. Specific protective measures shall be defined in the CRTP to reduce the potential adverse impacts on any presently undetected cultural resources to less than significant levels. The CRTP shall be submitted to the CPUC for review and approval at least 30 days before the start of construction.</p> <p>The CRTP shall define construction procedures for areas near known/recorded cultural sites. Wherever a tower, access road, equipment, etc., must be placed or accessed within 100 feet of a recorded, reported, or known archaeological site eligible or potentially eligible for the CRHR, the site will be flagged on the ground as an ESA (without disclosure of the exact nature of the environmental sensitivity [i.e., the ESA is not identified as an archaeological site]). Construction equipment shall then be directed away from the ESA, and construction personnel shall be directed not to enter the ESA. Archaeological monitoring of Project construction will be focused in the immediate vicinity of the designated ESAs.</p> |
| APM 7.2 Construction Personnel Training | <p>All construction personnel shall be trained regarding the recognition of possible buried cultural remains, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. PG&E shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials. The following issues shall be addressed in training or in preparation for construction:</p> <p>Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits.</p> <p>PG&E shall provide a background briefing for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential ESA and anticipated procedures to treat unexpected discoveries.</p> <p>Upon discovery of potential buried cultural materials, work in the immediate area of the find shall be halted and PG&E's archaeologist notified. Once the find has been identified, PG&E's archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be important according to CEQA.</p> |
| APM 7.3 Archaeological Monitoring | <p>PG&E shall implement archaeological monitoring by a professional archaeologist during subsurface construction disturbance at all locations identified in the CRTP. These locations will include the archaeological High-Probability Areas described above and any ESAs to be designated within these High-Probability Areas. These locations and their protection boundaries will be defined and mapped in the CRTP.</p> |
| APM 7.4 Pre-Construction Survey | <p>PG&E shall perform pre-construction surveys for any Project Areas not yet surveyed (i.e., new or modified staging areas). Resources discovered during those surveys will be subject to APMs M-7.1 to 7.3.</p> |

Mitigation Measures for Impact C-1

- C-1a Avoid Environmentally Sensitive Areas.** Known prehistoric and historic archaeological sites located within, or just outside of the project APE shall be designated as an Environmentally Sensitive Area (ESA). Construction personnel and equipment shall be instructed on how to avoid ESAs. Existing historic structures located within the project APE along underground portions of the transmission line route shall be avoided by confining all construction activities between street curb lines within 100 feet of either side of a designated historic property.
- C-1b Cultural Resources Treatment Plan (CRTP).** PG&E shall develop a Cultural Resources Treatment Plan (CRTP) for Archaeological High-Probability Areas identified in subsections D.5.3.3 through D.5.6, including procedures for protection and avoidance of Environmentally

Sensitive Areas (ESAs), and Archaeological High-Probability Areas, evaluation and treatment of the unexpected discovery of cultural resources including Native American burials; detailed reporting requirements by the Project Archaeologist; curation of any cultural materials collected during the Project; and requirements to specify that archaeologists and other discipline specialists meet the Professional Qualifications Standards mandated by the California Office of Historic Preservation (OHP).

Current project design ensures that known and recorded cultural resources will be avoided during construction, and operation and maintenance. Specific protective measures shall be defined in the CRTP to reduce the potential adverse impacts on any presently undetected cultural resources to less than significant levels. The CRTP shall be submitted to the CPUC for review and approval at least 30 days before the start of construction.

The CRTP shall define construction procedures for areas near known/recorded cultural sites. Wherever a tower, access road, equipment, etc., must be placed or accessed within 100 feet of a recorded, reported, or known archaeological site eligible or potentially eligible for the CRHR, the site will be flagged on the ground as an ESA (without disclosure of the exact nature of the environmental sensitivity [i.e., the ESA is *not* identified as an archaeological site]). Construction equipment shall then be directed away from the ESA, and construction personnel shall be directed not to enter the ESA. Archaeological monitoring of Project construction will be focused in the immediate vicinity of the designated ESAs. (Supersedes APM 7.1)

C-1c Construction Monitoring. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could be encountered along the transmission line corridor. Monitoring shall occur in all locations specified in the mitigation monitoring table, or at the discretion of the principal archaeologist. The qualifications of the principal archaeologist shall be approved by the CPUC. Monitored locations shall include designated Archaeological High-Probability Areas at watercourse crossings, in areas near the former bay shore, and near known resources. Monitored locations shall also include designated ESAs, described as locations in the immediate vicinity of a known resource. Intermittent monitoring may occur in areas of moderate archaeological sensitivity at the discretion of the principal archaeologist. A Native American monitor is required at all culturally sensitive locations specified in the mitigation monitoring table, or at the discretion of the principal archaeologist. (Supplements APM 7.3)

Impact C-2: Previously Undetected Cultural Resources May Be Damaged or Destroyed During Project Construction

Unknown and potentially significant cultural resources could exist within overhead and underground segments of the proposed Jefferson-Martin 230 kV Transmission Line Project, especially in areas near the former bay shore and along stream banks. Destruction of potentially significant cultural resources without mitigation would be a significant impact (Class II).

Mitigation Measures for Impact C-2

Mitigation Measures C-1b and C-1c and APM 7.2 (defined above) should also be implemented for Impact C-2 in order to ensure that impacts would be less than significant.

Impact C-3: Construction Operations Have the Potential to Impact Site P-41-390

Site P-41-390 (historic stone railroad bridge on BART ROW just north of Spruce Ave) is a National Register-eligible historic resource. CEQA contains provisions relative to preservation of historic (and prehistoric) cultural sites. Section 15126.4 of CEQA directs public agencies to “avoid damaging effects” on an historic resource whenever feasible. PG&E has indicated that it plans to place the 230 kV transmission line underground as it approaches the bridge and cross the culvert above the bridge without affecting it. PG&E expects the procedure to involve typical underground trenching construction without the use of a bore. A field inspection of the bridge by WSA personnel indicated the presence of less than five feet of fill above the bridge. This structure is a potentially significant impact (Class II), mitigable to less than significant levels with implementation of Mitigation Measure C-3a.

Mitigation Measure for Impact C-3

C-3a Evaluation of Historic Bridge. Prior to project construction, PG&E shall conduct test bores above the bridge to determine whether it will be possible to install the underground transmission line as planned without damaging the historic bridge. If PG&E finds insufficient fill above the bridge to successfully trench without causing damage to the bridge or bridge setting, PG&E shall consider other methods of crossing the unnamed stream channel, such as directional drilling of the watercourse. A report shall be submitted to the CPUC for review and approval at least 60 days before construction starts, documenting test boring results and providing a diagram of the proposed construction techniques.

Construction of 230 kV/60 kV Overhead Transmission Line

The following sections define the mitigation measures required for each segment of the Proposed Project in the overhead segment.

Jefferson Substation to Ralston Substation

No cultural resources were identified within 200 feet of a project component. Watercourse crossings at MP 0.6, MP 2.2, and MP 3.8 are designated as Archaeological High-Probability Areas due to the potential for encountering undiscovered cultural resources. Implementation of Mitigation Measures C-1b and C-1c and APM 7.2 will ensure that impacts are less than significant.

Ralston Substation to Carolands Substation

No cultural resources were identified within 200 feet of a project component. The watercourse crossing at San Mateo Creek (MP 6.6–6.9) is designated as an Archaeological High-Probability Area due to the potential for encountering undiscovered cultural resources. Implementation of Mitigation Measures C-1b and C-1c and APM 7.2 will ensure that impacts are less than significant.

Carolands Substation to Transition Station

One prehistoric archaeological site (CA-SMA-23) is believed to be located outside of the Project APE though the site boundaries are unclear from site documentation. The area from MP 12.9–14.1 is designated as an Archaeological High-Probability Area due to the potential for encountering cultural resources associated with CA-SMA-23, or previously undetected cultural resources in this area. Implementation of Mitigation Measures C-1a, C-1b, and C-1c and APM 7.2 will ensure that impacts are less than significant.

D.5.3.4 Transition Station

Construction activities associated with transition station modification may expose previously undetected cultural resources. Implementation of Mitigation Measure C-1b and APM 7.2 will ensure that impacts are less than significant.

D.5.3.5 230 kV Underground Transmission Line

San Bruno Avenue

One prehistoric archaeological site (CA-SMA-23) is located outside of the Project APE in the vicinity of the project area, though the site boundaries are unclear from site documentation. The eastern portion of San Bruno Avenue is considered an Archaeological High-Probability Area due to the potential for encountering cultural resources associated with this prehistoric site, or previously undetected cultural resources in this area. Implementation of Mitigation Measures C-1a, C-1b, and C-1c and APM 7.2 will ensure that impacts are less than significant.

BART ROW

Table D.5-2 lists the known cultural resources in this project segment. An historic stone railroad bridge (P-41-390), one prehistoric site (CA-SMA-299), and four historic properties (C-295, P-41-381, P-41-382, P-41-383) are located within the APE of the BART ROW. One prehistoric site (CA-SMA-355) is located just outside of the APE. Three watercourse crossings (Colma Creek, Twelve Mile Creek, and an unnamed drainage near Spruce Avenue), and designated portions of the BART ROW are considered to be Archaeological High-Probability Areas.

Table D.5-2. Cultural Resources Identified in the BART ROW Segment

| Resource | Description | Location | Proximity* |
|------------|-------------------------|---|----------------|
| P-41-390 | Stone railroad bridge | BART ROW near Chestnut Avenue, Colma | Within APE |
| CA-SMA-299 | Prehistoric midden site | BART ROW at Colma Creek, South San Francisco | Within APE |
| CA-SMA-355 | Prehistoric midden site | Near Colma Creek, South San Francisco | Outside of APE |
| C-295 | Historic residence | Mission Road and Grand Ave, South San Francisco | Outside of APE |
| P-41-381 | Historic residence | 123 Francisco Drive, South San Francisco | Within APE |
| P-41-382 | Historic residence | 1281 Mission Road, South San Francisco | Within APE |
| P-41-383 | Historic residence | 1289 Mission Road, South San Francisco | Within APE |

Source: Proponent's Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Impacts to cultural resources would be potentially significant (Class II), mitigable to less than significant levels with implementation of Mitigation Measures C-1a, C-1b, C-1c, and C-3a and APM 7.2. Specific sites in the BART ROW are:

- **P-41-390.** Additional information is necessary regarding the intended construction method employed for crossing the unnamed creek at the stone railroad bridge. The bridge consists of two structures; one each on the eastern and western railroad grades. PG&E plans to trench over one bridge structure. Fill above the bridge structures vary in depth from three to five feet depending upon the bridge structure and location. Additional information is required regarding the specific location and depth of the trench in relationship to these structures prior to construction. Mitigation Measure C-3a would reduce potential impacts to less than significant levels.

- **Watercourse Crossing at Twelve Mile Creek and Colma Creek.** Construction activities associated with transmission line trenching may expose previously undetected cultural resources. Mitigation Measure C-1c and APM 7.2 would reduce project impacts to less than significant levels.
- **CA-SMA-299.** Prehistoric site occurs within the project APE. The site is believed to be completely destroyed. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along Colma Creek, the BART ROW between Orange Avenue and McLellan Drive is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c and APM 7.2 would reduce potential impacts to less than significant levels.
- **CA-SMA-355.** Prehistoric site located outside of the project APE. The site boundaries are unclear because cultural materials are buried under 1.5 to 7.3-meters of fill. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along Colma Creek, the BART ROW between Orange Ave. and McLellan Drive is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c and APM 7.2 would reduce potential impacts to less than significant levels.
- **C-295.** Twelve-Mile House at Mission Road and Grand Avenue, South San Francisco. This historic property is located within the project APE but would be avoided by the Proposed Project as the route is not directly adjacent to this property.
- **P-41-381, P-41-382, and P-41-383** are historic residences. All are located within the project APE but will be avoided by the Proposed Project as the route is not directly adjacent to these properties.

Colma to Martin Substation

Table D.5-3 lists the known cultural resources in this project segment. One known historic site (CA-SMA-326/H) and six historic properties (P-41-400 through P-41-405) are located within 200 feet of a project component. Two watercourse crossings between MP 1 and MP 2 on Guadalupe Canyon Parkway and the entire portion of Bayshore Boulevard are considered to be Archaeological High-Probability Areas. Implementation of Mitigation Measures C-1a, C-1b, and C-1c and APM 7.2 will ensure that impacts are less than significant.

Table D.5-3. Cultural Resources Identified from Colma to Martin Substation

| Resource | Description | Location | Proximity* |
|--------------|--------------------------------|--|------------|
| P-41-400 | Historic cemetery | 540 F Street, Colma | Within APE |
| P-41-401 | Historic cemetery | 1051 El Camino Real, Colma | Within APE |
| P-41-402 | Historic cemetery | 1171 El Camino Real, Colma | Within APE |
| P-41-403 | Historic cemetery | 1299 El Camino Real, Colma | Within APE |
| P-41-404 | Historic cemetery | 1370 El Camino Real, Colma | Within APE |
| P-41-405 | Historic cemetery | 1500 Mission Road, Colma | Within APE |
| CA-SMA-326/H | Historic dairy barn foundation | Bayshore Highway and Main Street, Brisbane | Within APE |

Source: Proponent’s Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

D.5.3.6 Substations, Switchyards, and Taps

Construction activities associated with transition station modification may expose previously undetected cultural resources, a potentially significant (Class II) impact. Implementation of Mitigation Measure C-1c and APM 7.2 will ensure that impacts are less than significant.

D.5.4 Southern Area Alternatives

Both of the Southern Area Alternatives follow similar alignments to the Proposed Project. Potential impacts to cultural resources are greater with the southern alternatives in comparison to the Proposed Project because both PG&E Route Option 1B and the Partial Underground Alternative would involve increased soil disturbance as a result of trenching for underground transmission line installation. Additionally, the northern portion of PG&E Route Option 1B is located closer to many known prehistoric sites near the former bay shore.

D.5.4.1 PG&E Route Option 1B – All Underground

This alternative parallels the proposed route in the San Andreas Rift Zone, following portions of Cañada Road and Skyline Boulevard from Edgewood Park to Trousdale Boulevard. The alternative route turns northeast towards the Bay on Trousdale Boulevard, and then northwest on El Camino Real before rejoining the proposed route at El Camino Real and San Bruno Avenue.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

Prehistoric sites known to occur in the vicinity of this alternative are listed in Table D.5-4. Trenching and directional boring will involve the displacement of large volumes of soil near the former bay shore along portions of Trousdale Drive and El Camino Real. Two prehistoric sites (WSA-JM-1, CA-SMA-74), historic Crystal Springs Dam, and three water crossings are located within the APE for this alternative. The portion of PG&E Route Option 1B from Jefferson Substation to Edgewood Road, watercourse crossings along Cañada Road, and the route from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to Huntington Drive are considered to be Archaeological High-Probability Areas due to the proximity of recorded prehistoric sites in the area.

Table D.5-4. Cultural Resources: PG&E Route Option 1B

| Resource | Description | Location | Proximity* |
|--------------|-------------------------|---|----------------|
| CA-SMA-74 | Prehistoric midden site | Trousdale Drive and Magnolia Avenue, Burlingame | Within APE |
| CA-SMA-90 | Prehistoric midden site | Murchison Drive, Burlingame | Outside of APE |
| CA-SMA-91 | Prehistoric midden site | Murchison Drive, Burlingame | Outside of APE |
| C-118 | Prehistoric midden site | Trousdale Drive and Sequoia Avenue, Burlingame | Outside of APE |
| CA-SMA-300 | Prehistoric midden site | Trousdale Drive and El Camino Real Avenue, Burlingame | Outside of APE |
| CA-SMA-76 | Prehistoric midden site | Between Millbrae Avenue and Murchison Drive, Burlingame | Outside of APE |
| CA-SMA-172/H | Historic railroad depot | California Avenue, and Millbrae Avenue, Millbrae | Outside of APE |
| C-305 | Historic structure | Between El Camino Real and BART ROW, Millbrae | Outside of APE |

Source: Proponent's Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Trenching and directional drilling activities associated with the construction of the PG&E Route Option 1B underground transmission line would have a very High-Probability of disturbing archaeological sediments associated with known or previously unidentified cultural deposits. Implementation of Mitiga-

tion Measures C-1a, C-1b, and C-1c, APM 7.2, and Mitigation Measure C-4a (below) will ensure that impacts are less than significant. The following sites are of most interest on this route:

- **WSA-JM-1.** Previously unrecorded prehistoric site located by WSA archaeologists during the survey of this alternative. The site is located southeast of Edgewood Drive and northeast of Cañada Road. Due to the diffuse nature of the artifacts associated with this site, the portion of the overheard route from Jefferson Substation to Edgewood Road is considered to be an Archaeological High-Probability Area.
- **CA-SMA-91.** Prehistoric site located outside of the project APE. This site is believed to have been destroyed by the construction of Spring Valley School, though the site boundaries are unclear from existing records. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along the former bay shore, the portion of PG&E Route Option 1B from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to Huntington Drive is considered an Archaeological High-Probability Area.
- **CA-SMA-90 and CA-SMA-76.** Prehistoric sites located outside of the project APE. CA-SMA-90 is believed to have been destroyed by residential development; boundaries for both sites are unclear from existing records. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along the former bay shore, the portion of PG&E Route Option 1B from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to San Bruno Avenue is considered an Archaeological High-Probability Area.
- **CA-SMA-74.** Prehistoric site occurs within the project APE. A portion of the site is believed to have been partially destroyed by construction of Magnolia Ave, though some portions may still remain (Bocek, 1990). Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along the former bay shore, the portion of PG&E Route Option 1B from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to Huntington Drive is considered an Archaeological High-Probability Area.
- **C-118.** Prehistoric site located outside of the project APE near Trousdale Drive and Sequoia Avenue. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along the former bay shore, the portion of PG&E Route Option 1B from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to Huntington Drive is considered an Archaeological High-Probability Area.
- **CA-SMA-300.** Prehistoric site located outside of the project APE. The western boundary of the site is located east of the intersection of Trousdale Drive and El Camino Real (Bocek, 1990). Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources along the former bay shore, the portion of PG&E Route Option 1B from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale to San Bruno Avenue is considered an Archaeological High-Probability Area.
- **CA-SMA-172H.** Historic Southern Pacific Railroad depot structure located just outside of the APE approximately 450 feet northeast of the intersection of El Camino Real and Millbrae Avenue. This property will be avoided by this alternative and no mitigation is required.

- **C-305.** Historic Spring Valley Water House located just outside of the APE between El Camino Real and the BART ROW. This property will be avoided by this alternative and no mitigation is required.

Impact C-4: Construction Operations Have the Potential to Impact Crystal Springs Dam

Crystal Springs Dam is an historic resource listed in the California Inventory of Historic Resources. The dam is located across the former drainage of San Mateo Creek on the eastern side of Lower Crystal Springs Reservoir. The dam is approximately 150 meters long and 50 meters tall and was constructed between 1887 and 1890. The original dam structure, which currently supports an elevated roadbed, is an example of late 19th Century civil engineering.

CEQA contains provisions relative to preservation of historic (and prehistoric) cultural sites. Section 15126.4 of CEQA directs public agencies to “avoid damaging effects” on an historic resource whenever feasible. The SFPUC has determined that installation of the cables on or around the dam (using one of several possible options) would be feasible. Any method that involves the direct attachment of a cable to the dam, or would involve potential alterations to the setting of the dam has the potential to cause damage to or diminish the significance of an important historic resource. This could result in its integrity being diminished, and affect its potential eligibility to the CRHR, a potentially significant (Class II) impact, mitigable to less than significant levels with implementation of Mitigation Measure C-4a.

Mitigation Measure for Impact C-4

C-4a Crystal Springs Dam. PG&E shall give preference to methods of crossing Crystal Springs Dam that would avoid alterations to the structure or setting of the dam. Such construction methods could include an overhead crossing of San Mateo Creek or the installation of a submarine cable placed in the lakebed away from the dam. If avoidance is not feasible, PG&E shall consult with a qualified architectural historian to develop methods of attachment that do not compromise the visual setting of this significant historic structure.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is higher with PG&E Route Option 1B in comparison with the Proposed Project. PG&E Route Option 1B would avoid one prehistoric site (CA-SMA-23) and one water crossing; however, this alternative would pass in closer proximity to eight prehistoric sites that would be otherwise avoided by the Proposed Project. The probability of encountering archaeological deposits associated with known and unanticipated prehistoric resources is considered to be very high in the vicinity of the intersection of Trousdale and El Camino Real along both streets.

D.5.4.2 Partial Underground Alternative

The Partial Underground Alternative parallels or follows the proposed route in the San Andreas Rift Zone, along portions of the existing PG&E double-circuit 60kV power lines, Cañada Road, and Skyline Boulevard from Edgewood Park to just south of San Andreas Lake where this alternative rejoins the Proposed Project alignment.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

As shown in Table D.5-5, one prehistoric site and one historic site are located within the project APE. The portion of the overhead route from Jefferson Substation to Edgewood Road and watercourse crossings along Cañada Road are designated as Archaeological High-Probability Areas due to the potential for encountering undiscovered cultural resources.

Table D.5-5. Cultural Resources: PG&E Route Option 1B / Partial Underground Alternative

| Resource | Description | Location | Proximity* |
|---------------------|----------------------------|--------------------------------|------------|
| Crystal Springs Dam | Historic structure | Skyline Boulevard | Within APE |
| WSA-JM-1 | Prehistoric lithic scatter | Edgewood Drive and Cañada Road | Within APE |

Source: Proponent's Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Previously unrecorded prehistoric site located by WSA archaeologists during the survey of this alternative (WSA-JM-1), described above, is located southeast of Edgewood Drive and northeast of Cañada Road. This site is characterized by a widely dispersed surface scatter of artifacts. Due to the diffuse nature of the artifacts associated with this site, the portion of the overhead route from Jefferson Substation to Edgewood Road is considered to be an Archaeological High-Probability Area. Three small watercourse crossings and the crossing of San Mateo Creek are also considered to be areas with high potential for cultural resources. Implementation of Mitigation Measures C-1a, C-1b, and C-1c will ensure that impacts are less than significant.

Comparison to Proposed Route Segment

Potential impacts from construction of the Partial Underground Alternative would be similar to those described in Section D.5.3.3 for the Proposed Project in the areas where the two routes overlap. The Partial Underground Alternative would also involve the crossing of four watercourses, all designated as Archaeological High-Probability Areas.

This alternative would involve increased soil disturbance compared to the proposed route due to trenching associated with placing the transmission underground north of Highway 92, and through the relocation of the existing overhead lines near Edgewood Park and between San Andreas Lake and Lower Crystal Springs Reservoir. There is a resulting greater risk of encountering and adversely affecting previously unknown cultural resources with the Partial Underground Alternative compared to the Proposed Project.

D.5.5 Northern Area Alternatives

The Northern Alternatives cover a wider range of landscapes and terrain than the southern routes. Potential impacts to both known and unanticipated cultural resources are greater with northern alternatives containing segments located along the former bay shores and near the banks or crossings of watercourses. Potential impacts are reduced where the route passes through Bay fill.

D.5.5.1 West of Skyline Transition Station

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No cultural resources have been identified in the area of the West of Skyline Transition Station. Construction activities associated with transition station modification may expose previously undetected cultural resources. Implementation of Mitigation Measure C-1b and APM 7.2 will ensure that impacts are less than significant.

Comparison to Proposed Transition Station

There are no previously identified cultural resources in either location. Both transition stations occur in similar settings, with comparable low probabilities of encountering previously unknown cultural resources.

West of Skyline Transition Station with Proposed Underground Route

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No cultural resources have been identified in the area between the West of Skyline Transition Station and San Bruno Avenue where this underground route would rejoin the proposed route. Construction activities associated with transition station modification may expose previously undetected cultural resources. Implementation of Mitigation Measure C-1b and APM 7.2 will ensure that impacts are less than significant.

Comparison to Proposed Route Segment

There are no previously identified cultural resources in either location; probabilities of encountering previously unknown cultural resources are comparable.

West of Skyline Transition Station with Sneath Lane Underground Route

This alternative would place a transition station on Skyline Boulevard south of the proposed transition station on San Bruno Avenue. The transmission line route would then continue north on Skyline and then turn northeast and descend downhill on Sneath Lane towards the BART ROW.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No previously identified cultural resources are located in the vicinity of the alternative West of Skyline Transition Station, or along the western portion of the Sneath Lane underground alternative route up to the I-280 interchange. Table D.5-6 lists cultural sites that are known to occur in the vicinity of the eastern portion of this segment between I-280 and El Camino Real. The portion of the Sneath Lane Underground Route from the eastern side of the I-280 overpass to the BART ROW is considered an Archaeological High-Probability Area due to the proximity of recorded sites in the area.

Table D.5-6. Cultural Resources: Sneath Lane Underground Route / Cherry Avenue Alternative

| Resource | Description | Location | Proximity* |
|-------------------------------|-------------------------|--|----------------|
| Golden Gate National Cemetery | Historic cemetery | Sneath Lane, San Bruno | Within APE |
| CA-SMA-100 | Prehistoric midden site | South of Sneath Lane, West of Cherry Avenue, San Bruno | Outside of APE |
| CA-SMA-101 | Prehistoric midden site | South of Sneath Lane, West of Cherry Avenue, San Bruno | Outside of APE |
| CA-SMA-209/H | Historic site | Corner of Cherry Avenue and Sneath Lane | Within APE |

Source: Proponent’s Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Significant sites are described as follows:

- **Golden Gate National Cemetery.** Historic property located on north side of Sneath Lane from I-280 to El Camino Real. Mitigation Measure C-1a would reduce potential impacts to less than significant levels.
- **CA-SMA-100.** Prehistoric site occurs outside of the project APE (south of Sneath Lane). The site is located on the south side of San Bruno Creek (now partially channeled underground), between I-380 to the south, Sneath Lane to the north, I-280 to the west, and Cherry Lane to the east. Due to the sensitive nature of this site and the potential for finding previously undetected cultural resources near San Bruno Creek, Sneath Lane from the eastern side of the I-280 overpass to El Camino Real is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.
- **CA-SMA-101.** Prehistoric site documented adjacent to eastern shoulder of the eastbound Sneath Lane off ramp from northbound I-280. This site was not relocated during the WSA archaeological survey for this alternative. Due to the sensitive nature of this area and the potential for finding previously undetected cultural resources near San Bruno Creek, Sneath Lane from the eastern side of the I-280 overpass to El Camino Real is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.
- **CA-SMA-209H.** Former location of Tanforan Racetrack near Sneath Lane and Cherry Avenue. The site is now covered by an industrial park. Due to the potential for finding buried historic artifacts or features associated with the racetrack, Sneath Lane from the eastern side of the I-280 overpass to El Camino Real is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is greater with the West of Skyline Transition Station and Sneath Lane Underground Route in comparison with the Proposed Project. This alternative

would move construction farther away from one prehistoric site (CA-SMA-23); however, construction would occur in closer proximity to prehistoric sites along San Bruno Creek and one historic site near the intersection of Sneath Lane and Cherry Avenue. These three sites would be completely avoided by the Proposed Project. The probability of encountering archaeological deposits associated with known and unanticipated prehistoric resources is considered moderate to high near the historic location of San Bruno Creek.

West of Skyline Transition Station with Westborough Boulevard Underground

This underground alternative route would place a transition station on Skyline Boulevard south of San Bruno Ave. The underground route would continue north from the transition station on Skyline and turn east on Westborough Boulevard to the BART ROW.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No previously identified cultural resources are located in the vicinity of the alternative West of Skyline Transition Station, or along Westborough Boulevard to the BART ROW. Due to the potential for finding previously undetected cultural resources along the former bay shore, and watercourse crossings, the portion of Westborough Boulevard from the intersection of West Orange Avenue to the BART ROW is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is reduced with the West of Skyline Transition Station and Westborough Boulevard Underground Route in comparison with the Proposed Project. This alternative would move construction farther away from one prehistoric site (CA-SMA-23), avoid one historic structure (P-41-390) and one watercourse crossing. This alternative would also eliminate the majority of the length of the BART ROW which is considered to be an Archaeological High-Probability Area due to its proximity to the former bay shore.

D.5.5.2 Sneath Lane Transition Station

The Sneath Lane Transition Station would be located next to an existing substation near the corner of Sneath Lane and Skyline Boulevard in the foothills west of San Bruno.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction activities associated with building the Sneath Lane Transition Station such as footing or foundation excavation and grading for equipment storage may expose previously undetected cultural resources. Implementation of Mitigation Measure C-1b will ensure that impacts are less than significant.

Comparison to Proposed Transition Station

There are no previously identified cultural resources in either location. Both transition stations occur in similar settings, with comparable probabilities of encountering previously unknown cultural resources.

Sneath Lane Transition Station with Proposed Underground Route

With this alternative, the Sneath Lane Transition Station would be connected to the proposed underground route by a trenched line that would return to meet proposed route on San Bruno Avenue via Skyline Boulevard.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

Construction activities such as trenching associated with building the underground connections between the Sneath Lane Transition Station and proposed route along San Bruno Avenue may expose previously undetected cultural resources. Implementation of Mitigation Measure C-1b will ensure that impacts are less than significant.

Comparison to Proposed Route Segment

There are no previously identified cultural resources in either transition station location. These transition stations occur in similar settings. The Sneath Lane Transition Station and connecting underground line would involve a greater amount of soil disturbance than the proposed route and would slightly increase the probability of encountering previously unknown cultural resources.

Sneath Lane Transition Station with Sneath Lane Underground Route

In this alternative, the overhead transmission line would continue northwest of Skyline Boulevard in the foothills west of San Bruno Avenue to Sneath Lane. A transition station would be located next to an existing substation near the corner of Sneath Lane and Skyline Boulevard. The route would then descend northeast downhill on Sneath Lane towards the BART ROW.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No previously identified cultural resources are located in the vicinity of the alternative Sneath Lane Transition Station, or along the western portion of the Sneath Lane underground alternative route up to the I-280 interchange. Table D.5-6 identifies the four cultural resources that occur along Sneath Lane east of I-280. This segment is considered an Archaeological High-Probability Area due to the proximity of recorded sites in the area.

Mitigation Measures C-1a, C-1b, and C-1c would reduce potential impacts of this alternative to less than significant levels.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is increased with the Sneath Lane Underground Route in comparison with the Proposed Project. This alternative would move construction farther away from one prehistoric site (CA-SMA-23), however this alternative would pass in closer proximity to Golden Gate National Cemetery, prehistoric sites along San Bruno Creek and one historic site near the intersection of Sneath Lane and Cherry Avenue. These sites would be completely avoided by the Proposed Project. The probability of encountering archaeological deposits associated with known and unanticipated prehistoric resources is considered moderate to high near the historic location of San Bruno Creek.

Sneath Lane Transition Station with Westborough Boulevard Underground

This route would use the Sneath Lane Alternative Transition Station and the route would then follow Skyline Boulevard to Westborough Boulevard to the BART ROW.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

As discussed above for the West of Skyline Transition Station with the Westborough Boulevard underground route, there is the potential for finding previously undetected cultural resources along the former bay shore and watercourse crossings. The portion of Westborough Boulevard from the intersection of West Orange Avenue and the BART ROW is considered an Archaeological High-Probability Area. Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is reduced with the Sneath Lane Transition Station and Westborough Boulevard Underground Route in comparison with the Proposed Project. This alternative would move construction farther away from one prehistoric site (CA-SMA-23), avoid one historic structure (P-41-390) and one watercourse crossing. This alternative would also eliminate the majority of the length of the BART ROW which is considered to be an Archaeological High-Probability Area due to its proximity to the former bay shore.

D.5.5.3 Cherry Avenue Alternative

The Cherry Avenue Alternative would diverge from the Proposed Project route at the intersection of San Bruno Avenue and Cherry Avenue. It would follow Cherry Avenue for 0.5 miles to the north, then turn east on Sneath Lane to the BART ROW.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

As shown in Table D.5-6, one historic property (Golden Gate National Cemetery), one prehistoric site (CA-SMA-100 along San Bruno Creek) and one historic site (CA-SMA-209H, the former Tanforan Racetrack) are known to occur in the vicinity of the Cherry Avenue Alternative. The entire alternative is considered an Archaeological High-Probability Area due to the proximity of recorded sites in the area, and the potential for finding previously unknown cultural resources near San Bruno Creek and the former bay shore. These three sites are described above (for the Sneath Lane Underground route with the West of Skyline Transition Station). Mitigation Measures C-1b and C-1c would reduce potential impacts to less than significant levels.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is greater with the Cherry Avenue Alternative route in comparison with the Proposed Project. This alternative would pass in closer proximity to one historic property on the north side of Sneath Lane, one prehistoric site located along San Bruno Creek and one historic site near the intersection of Sneath Lane and Cherry Avenue. These three resources would be completely avoided by the Proposed Project. The probability of encountering archaeological deposits associated with known and unanticipated prehistoric resources is considered moderate to high near the historic location of San Bruno Creek.

D.5.5.4 PG&E's Route Option 4B – East Market Street

This alternative, located in Daly City, would bypass Hoffman and Orange Streets of the Proposed Project and would instead follow East Market Street connecting Hillside Boulevard and Guadalupe Canyon Parkway.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

No impacts to any identified cultural resources are anticipated from underground construction on PG&E's Route Option 4B, but construction activities associated with the installation of the underground transmission line may expose previously undetected cultural resources. Implementation of Mitigation Measures C-1b and C-1c will reduce impacts to less than significant levels.

Comparison to Proposed Route Segment

No impacts to any existing cultural resources are anticipated from underground construction on Hoffman and Orange Streets of the Proposed Project, or from construction on East Market Street and PG&E's Route Option 4B. The potential for encountering previously unknown cultural resources during construction on either route is considered to be moderate to low.

D.5.5.5 Junipero Serra Alternative

This alternative would follow Junipero Serra Boulevard from Westborough Boulevard to Serramonte Boulevard and from Serramonte Boulevard east to the proposed route at Serramonte & Hillside.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

As shown in Table D.5-7, two historic properties (P-41-402 and Colma Town Hall) are located within the APE:

- **Colma Town Hall Building.** Historic property on the northwest corner of Serramonte Boulevard and El Camino Real, Colma, located within the project APE.
- **P-41-402.** Historic cemetery at 1171 El Camino Real, Colma, located within the project APE.

Implementation of Mitigation Measures C-1a, C-1b, and C-1c will ensure that impacts are less than significant.

Table D.5-7. Cultural Resources: Junipero Serra Alternative

| Resource | Description | Location | Proximity* |
|-----------------|-------------------|---|------------|
| Colma Town Hall | Historic building | Corner of Serramonte Boulevard and El Camino Real | Within APE |
| P-41-402 | Historic cemetery | El Camino Real, Colma | Within APE |

Source: Proponent's Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is significantly reduced with the Junipero Serra Alternative in comparison with the Proposed Project. This alternative would bypass the archaeologically sensitive BART ROW where the majority of cultural resources in the Proposed Project occur. Resources and Archaeological High-Probability Areas avoided by the Junipero Serra Alternative include an historic stone railroad bridge (P-41-390), two prehistoric sites (CA-SMA-299, -355), four historic properties (C-295, P-41-381, P-41-382, P-41-383), and three watercourse crossings. Two historic properties are located within the Junipero Serra Alternative APE, but are easily mitigated by avoidance.

D.5.5.6 Modified Existing 230 kV Underground ROW

This alternative could be used in conjunction with the southern portion of the proposed route or a number of different alternatives. The route would start on San Bruno Avenue, then briefly follow existing PG&E power lines north before continuing north via a combination of city streets and parking lots through South San Francisco, then paralleling the Southern Pacific ROW north of Oyster Point. At Sierra Point, the alternative would cross over to Bayshore Boulevard and eventually merge with the proposed route at the intersection of Bayshore Boulevard and Guadalupe Canyon Parkway.

Environmental Setting

Section D.5.1 describes the general cultural resources setting of this alternative as well as the Proposed Project.

Environmental Impacts and Mitigation Measures

Four prehistoric sites (CA-SMA-40, CA-SMA-92, CA-SMA-234, WSA-JM-2) and two historic resources (P-465, and P-497) are known to occur in the vicinity of the Modified Existing 230 kV Underground Alternative, as shown in Table D.5-8. The Southern Pacific ROW and Bayshore Boulevard segments are considered Archaeological High-Probability Areas due to the proximity of recorded sites in the area, water crossings, and proximity to the former bay shore.

Table D.5-8. Cultural Resources: Modified Existing 230kv Underground ROW

| Resource | Description | Location | Proximity |
|------------|-------------------------|--|----------------|
| P-465 | Historic site | Caltrain ROW | Outside of APE |
| P-497 | Historic railroad grade | Railroad Avenue and Linden Avenue, South San Francisco | Outside of APE |
| CA-SMA-40 | Prehistoric midden site | East side of San Bruno Mountain, South San Francisco | Outside of APE |
| CA-SMA-92 | Prehistoric midden site | East side of San Bruno Mountain, South San Francisco | Outside of APE |
| CA-SMA-234 | Prehistoric midden site | East side of San Bruno Mountain, South San Francisco | Outside of APE |

Source: Proponent's Environmental Assessment (PG&E, 2002) Chapter 7.

* Area of Potential Effect (APE) is defined as a 200-foot-wide corridor centered on the construction path (100 feet on both sides of the construction centerline).

Following are descriptions of eight of the nine sites that occur in this area (the ninth site is described below under Impact C-5).

- **Watercourse Crossing in PG&E 115 kV ROW.** Construction activities associated with transmission line installation may expose previously undetected cultural resources. Mitigation Measures C-1b, C-1c, and C-1d would reduce potential impacts to less than significant levels.
- **Watercourse Crossing of Colma Creek Tributary (Shaw Road and Golden Gate Produce Terminal Parking Lot).** Construction activities associated with transmission line installation may expose previously undetected cultural resources. Mitigation Measures C-1c and C-1d would reduce potential impacts to less than significant levels.
- **Watercourse Crossing at Colma Creek (Produce Avenue).** Construction activities associated with transmission line installation may expose previously undetected cultural resources. Mitigation Measures C-1c and C-1d would reduce potential impacts to less than significant levels.
- **P-465.** Historic archaeological site in Caltrain ROW near Colma Creek. Historic property is located outside of the project APE. No mitigation is necessary.
- **P-487.** Historic Railroad Spur located 400 feet outside of the project APE. No mitigation is necessary.
- **CA-SMA-40.** Prehistoric site located outside of the project APE. The site is located on the east side of San Bruno Mountain, southwest of Sierra Point. Previous surveys in the project area failed to identify archaeological deposits associated with the site in the Southern Pacific ROW directly east of CA-SMA-40 (Sawyer et al., 2000). However due to the sensitive nature of this site and the potential for finding previously undetected cultural resources near San Bruno Mountain and the bay shore, the Southern Pacific ROW and Bayshore Boulevard segments are considered Archaeological High-Probability Areas. Mitigation Measures C-1c and C-1d would reduce potential impacts to less than significant levels.
- **CA-SMA-92.** Prehistoric site located outside of the project APE. The site is located on the east side of San Bruno Mountain, southwest of Sierra Point. This site was not relocated during WSA's survey of this alternative. Previous surveys in the project area failed to identify archaeological deposits

associated with the site in the Southern Pacific ROW directly east of CA-SMA-92 (Sawyer et al., 2000). However due to the sensitive nature of this site and the potential for finding previously undetected cultural resources near San Bruno Mountain and the bay shore, the Southern Pacific ROW and Bayshore Boulevard segments are considered Archaeological High-Probability Areas. Mitigation Measures C-1c and C-1d would reduce potential impacts to less than significant levels.

- **CA-SMA-234.** Prehistoric site located outside of the project APE. The site is located on the eastern slopes of San Bruno Mountain. CA-SMA-234 was not relocated during WSA's survey of this alternative. However due to the sensitive nature of this site and the potential for finding previously undetected cultural resources near San Bruno Mountain and the bay shore, the Southern Pacific ROW and Bayshore Boulevard segments are considered Archaeological High-Probability Areas. Mitigation Measures C-1c and C-1d would reduce potential impacts to less than significant levels.

Impact C-5: Construction Operations Have the Potential to Impact WSA-JM-2

A previously unrecorded site with prehistoric and historic components (WSA-JM-2) was located by WSA archaeologists during the survey of this alternative. The site is located in the BART ROW near Santa Clara Avenue in San Bruno. Mitigation Measure C-5a (below) would reduce potential impacts to less than significant levels.

Site WSA-JM-2 appears to qualify for significance under Title 14, Public Resources Code, Section 5024.1. CEQA contains provisions relative to preservation of historic and prehistoric cultural sites. Section 15126.4 of CEQA directs public agencies to "avoid damaging effects" on an historic resource whenever feasible. Depending upon the specific centerline location of the underground transmission line and the installation method employed, construction activities have the potential to cause damage to or diminish the significance of this archaeological site, a potentially significant (Class II) impact.

Mitigation Measure for Impact C-5

C-5a Avoid Site WSA-JM-2. PG&E shall consider construction methods at WSA-JM-2 that will avoid the resource. Such construction methods could include project redesign to bypass the resource, or directional horizontal drilling to pass under the resource without disturbing archaeological soils. If avoidance is not feasible, subsurface archaeological testing shall be conducted at WSA-JM-2 to define the subsurface extent and integrity of the site. Additional archival research may also be conducted as a means of corroborating the archaeological data collected. This additional data gathering phase at each site may be sufficient, on an individual basis, to consider loss of the resource during development as a less than significant impact. Some sites may prove to be inherently complex or significant such that testing alone will not be considered adequate mitigation to permit loss. In those cases, data recovery may be warranted, wherein a more comprehensive subsurface examination-based on a Research Design formulated by the principal archaeologist to address pertinent research topics shall be required. The Research Design shall be submitted by the principal archaeologist to the CPUC for approval prior to project construction.

Comparison to Proposed Route Segment

The number of potential impacts to cultural resources is comparable to that of the Proposed Project. There are a similar number of known cultural resources and water crossings in both routes. This alternative avoids sensitive resources in the BART ROW and in turn passes in the immediate vicinity of other sensitive sites on the eastern edge of San Bruno Mountain. Additionally, site WSA-2 appears to

be located directly in the path of construction and project design will need to take into account methods for avoiding this resource or data recovery will be necessary to offset impacts to this resource. The majority of this route would require construction monitoring due to its proximity to the former bay shore.

D.5.6 Environmental Impacts of the No Project Alternative

As stated in Section D.5.3, the likelihood for adverse impacts from construction activity hinges on the potential of damaging or destroying known or unanticipated cultural deposits during project construction. Under the No Project Alternative, no adverse impacts to cultural resources would be expected from interruptible load programs, demand-side management, or curtailment of electric service.

Adverse impacts to cultural resources could occur during earth disturbance associated with construction or modification of other potential No Project Alternative scenarios discussed in Section C.6, including:

- Transmission system improvements as described in Section C.6.1 — substation upgrades (Projects 5, 6, 7, 11), and new or upgraded 115 kV transmission lines (Projects 9 and 10)
- New-generation (CCSF turbines or Potrero Unit 7)

Negative impacts to known or unanticipated cultural resources resulting from any of the above-listed construction activities without mitigation could be significant impacts. However, most projects require CEQA compliance, so protection of cultural resources would be required prior to construction.

D.5.7 Mitigation Monitoring, Compliance, and Reporting Table

Table D.5-9 lists cultural resources and Archaeologically High-Probability Areas located within and adjacent to the Proposed Project area and project alternative areas listed by construction segment. The table identifies the resource location and identifies the necessary treatment for reducing potential adverse impacts to a less than significant-level.

Table D.5-9. Mitigation Monitoring Program – Cultural Resources

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|---|---|---|--|---|--------------------|---|
| <p>C-1: Construction operations have the potential to impact known archaeological resources (Class II)</p> | <p>C-1a: Avoidance. Known pre-historic and historic archaeological sites located within, or just outside of the project APE shall be designated as an Environmentally Sensitive Area (ESA). Construction personnel and equipment will be instructed on how to avoid ESA's. Existing historic structures located within the project APE along underground portions of the transmission line route shall be avoided by confining all construction activities between street curb lines within 100 feet of either side of a designated historic property.</p> <p>APM 7.2: All construction personnel shall be trained regarding the recognition of possible buried cultural remains, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. PG&E shall complete training for all construction personnel. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials. The following issues shall be addressed in training or in preparation for construction:</p> <p>Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses</p> | <p>Colma to Martin Substation P-41-400. Historic cemetery at 540 F Street, Colma. P-41-401. Historic cemetery at 1051 El Camino Real, Colma. P-41-402. Historic cemetery at 1171 El Camino Real, Colma. P-41-403. Historic cemetery at 1299 El Camino Real, Colma. P-41-404. Historic cemetery at 1370 El Camino Real, Colma. P-41-405. Historic cemetery at 1500 Mission Road, Colma CA-SMA-326/H. Historic dairy barn foundation near Bayshore Highway and Main Street, Brisbane</p> <p>PG&E Route Option 1B – Underground CA-SMA-74. Trousdale Drive between Magnolia Avenue and El Camino Real.</p> <p>Sneath Lane Underground / Cherry Avenue Alternative Golden Gate National Cemetery. Historic cemetery on the north side of Sneath Lane between I-280 and El Camino Real, San Bruno.</p> <p>Junipero Serra Alternative Colma Town Hall Building, located on northwest corner of Serramonte Boulevard and El Camino Real, Colma. P-41-402. Historic cemetery at 1171 El Camino Real, Colma.</p> | <p>CPUC to verify location of ESA CPUC to verify that site has been avoided</p> | <p>Known archaeological resources are not adversely affected by construction activity</p> | <p>CPUC</p> | <p>Prior to construction and during construction phase of project</p> |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--|--|-----------------------------|-------------------------------|--|--------------------|----------------------------|
| | <p>that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits.</p> <p>PG&E shall provide a background briefing for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential ESA and anticipated procedures to treat unexpected discoveries.</p> <p>Upon discovery of potential buried cultural materials, work in the immediate area of the find shall be halted and PG&E's archaeologist notified. Once the find has been identified, PG&E's archaeologist will make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts if the finds are found to be important according to CEQA.</p> | | | | | |
| <p>C-1: Construction operations have the potential to impact known archaeological resources (Class II)</p> <p>C-2: Previously undetected cultural resources may be negatively impacted during construction (Class II)</p> | <p>C-1b: Cultural Resources Treatment Plan (CRTP). PG&E shall develop a Cultural Resources Treatment Plan (CRTP) for Archaeological High-Probability Areas identified in subsections D.5.3.3 through D.5.6, including procedures for protection and avoidance of Environmentally Sensitive Areas (ESAs), and Archaeological High-Probability Areas, evaluation and treatment of the unexpected discovery of cultural resources</p> | <p>Entire project area.</p> | <p>CPUC to review CRTP.</p> | <p>Previously undetected cultural resources in designated sensitive areas are identified by the PG&E archaeological monitor Previously undetected resources are properly managed after identification by the archaeological monitor as outlined in the CRTP.</p> | <p>CPUC</p> | <p>Before construction</p> |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--------|---|----------|-------------------------------|------------------------|--------------------|--------|
| | <p>including Native American burials; detailed reporting requirements by the Project archaeologist; curation of any cultural materials collected during the Project; and requirements to specify that archaeologists and other discipline specialists meet the Professional Qualifications Standards mandated by the California Office of Historic Preservation (OHP). Current project design ensures that known and recorded cultural resources will be avoided during construction, and operation and maintenance. Specific protective measures shall be defined in the CRTP to reduce the potential adverse impacts on any presently undetected cultural resources to less than significant levels. The CRTP shall be submitted to the CPUC for review and approval at least 30 days before the start of construction.</p> <p>The CRTP shall define construction procedures for areas near known/recorded cultural sites. Wherever a tower, access road, equipment, etc., must be placed or accessed within 100 feet of a recorded, reported, or known archaeological site eligible or potentially eligible for the CRHR, the site will be flagged on the ground as an ESA (without disclosure of the exact nature of the environmental sensitivity [i.e., the ESA is not identified as an archaeological site]). Con-</p> | | | | | |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|---|--|---|---|---|--------------------|------------------------------------|
| | <p>struction equipment shall then be directed away from the ESA, and construction personnel shall be directed not to enter the ESA. Archaeological monitoring of project construction will be focused in the immediate vicinity of the designated ESAs. (Supersedes APM 7.1)</p> | | | | | |
| <p>C-1: Construction operations have the potential to impact known archaeological resources (Class II)</p> <p>C-2: Previously undetected cultural resources may be negatively impacted during construction (Class II)</p> | <p>C-1c: Construction Monitoring. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and pre-historic resources that could be encountered along the transmission line corridor. The qualifications of the principle archaeologist shall be approved by the CPUC. Monitoring will occur in all specified locations, including Archaeological High Probability Areas, or at the discretion of the principal archaeologist. Intermittent monitoring may occur in areas of moderate sensitivity at the discretion of the principal archaeologist. A Native American Monitor is required at all sensitive locations specified in the mitigation monitoring table, or at the discretion of the principal archaeologist. APM 7.3: PG&E shall implement archaeological monitoring by a professional archaeologist during subsurface construction disturbance at all locations identified in the CRTP.</p> | <p>Jefferson Substation to Ralston Substation Watercourse Crossing at MP 0.6, 2.2, 3.8. Archaeological monitor required for all construction within 100' of either side of the watercourse</p> <p>Ralston Substation to Carolands Substation Watercourse Crossing at San Mateo Creek (MP 6.6 to MP 6.9). Archaeological monitor required for all tower construction on either bank of the watercourse</p> <p>Carolands Substation to Transition Station CA-SMA-23. Archaeological monitor required between MP 12.9 and MP 14.1</p> <p>San Bruno Avenue CA-SMA-23. Archaeological monitor required on San Bruno Ave between Crestmoor Drive and Shelter Creek Lane</p> <p>BART ROW CA-SMA-299, CA-SMA-355, Watercourse Crossing at Twelve Mile Creek. Archaeological monitor required on BART ROW between Orange Ave. and proposed McLellan Drive</p> <p>Colma to Martin Substation Archaeological High Probability Area. Archaeological monitor required for 600-feet along McLellan Drive beginning at the intersection of McLellan Drive and the BART ROW</p> <p>Watercourse Crossing (a) on Guadalupe Canyon Parkway between MP 1 and MP 2. Archaeological monitor required for all construction within 100' of either side of the watercourse</p> <p>Watercourse Crossing (b) on Guadalupe Canyon Parkway between MP 1 and MP 2. Archaeological monitor required for all construction within 100' of either side of the watercourse</p> <p>Archaeological High Probability Area. Archaeological monitor required for the entire portion along Bayshore Boulevard</p> | <p>CPUC to approve qualifications of principal archaeologist</p> <p>CPUC to coordinate with principal archaeologist to verify that PG&E archaeologist monitors designated locations and follows procedures outlined in Cultural Resource Treatment Plan in the event of unanticipated discoveries</p> | <p>Previously undetected cultural resources in designated sensitive areas are identified by the PG&E archaeological monitor</p> <p>Previously undetected resources are properly managed after identification by the archaeological monitor as outlined in the CRTP.</p> | <p>CPUC</p> | <p>During project construction</p> |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--------|---|---|-------------------------------|------------------------|--------------------|--------|
| | <p>These locations will include the archaeological High-Probability Areas described above and any ESAs to be designated within these High-Probability Areas. These locations and their protection boundaries will be defined and mapped in the CRTP.</p> <p>APM 7.4: PG&E shall perform pre-construction surveys for any Project Areas not yet surveyed (i.e., new or modified staging areas). Resources discovered during those surveys will be subject to APMs M-7.1 to 7.3.</p> | <p><i>PG&E Route Option 1B-Underground</i> WSA-JM-1 Archaeological monitor required on route between Jefferson Substation and Edgewood Road. Watercourse Crossing on Cañada Road 400' north of Edgewood Drive. Archaeological monitor required for all construction within 100' of either side of the watercourse. Watercourse Crossing on Cañada Road near gate to Old Cañada Road. Archaeological monitor required for all construction within 100' of either side of the watercourse. Watercourse Crossing at on Cañada Road, 1 mile south of the Highway 92 on-ramp. Archaeological monitor required for all construction within 100' of either side of the watercourse. CA-SMA-91, CA-SMA-90, CA-SMA-74, C-118, CA-SMA-300, CA-SMA-76. Archaeological monitor and Native American monitor required from the intersection of Trousdale Drive and Castaneda Drive to El Camino Real, and El Camino Real from Trousdale Drive to Huntington Drive.</p> <p><i>Partial Underground Alternative</i> WSA-JM-1. Archaeological monitor required on route between Jefferson Substation to Edgewood Road. Watercourse Crossing at on Cañada Road 100' south of Edgewood Drive. Archaeological monitor required for all construction within 100' of either side of the watercourse. Watercourse Crossing at MP 2.2. Archaeological monitor required for all construction within 100' of either side of the watercourse Watercourse Crossing at MP 3.8. Archaeological monitor required for all construction within 100' of either side of the watercourse Watercourse Crossing at San Mateo Creek. Archaeological monitor required for all construction within 100' of either side of the watercourse.</p> <p><i>Sneath Lane Underground Route / Cherry Lane Alternative</i> CA-SMA-100, CA-SMA-101, CA-SMA-209H. Archaeological monitor required on Sneath Lane from I-280 to BART ROW and on Cherry Lane from San Bruno Avenue to Sneath Lane.</p> | | | | |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--|--|--|---|---|--------------------|------------------------------|
| | | <p>Modified Existing 230kV Underground ROW Watercourse Crossing in PG&E 115kV ROW. Archaeological monitor required for all construction within 100' of either side of the watercourse.</p> <p>Watercourse Crossing of Colma Creek Tributary (Shaw Road and Golden Gate Produce Terminal Parking Lot). Archaeological monitor required for all construction within 100' of either side of the watercourse.</p> <p>Watercourse Crossing at Colma Creek (Produce Avenue). Archaeological monitor required for all construction within 100' of either side of the watercourse.</p> <p>CA-SMA-40, CA-SMA-92, CA-SMA-234. Archaeological Monitor required on the entire length of the Southern Pacific ROW and Bayshore Boulevard. Native American monitor required on Southern Pacific ROW from Oyster Point Boulevard to Sierra Point Parkway.</p> | | | | |
| <p>C-3: Construction operations have the potential to impact P-41-390. (Class II)</p> | <p>C-3a: Mitigation for P-41-390. P-41-390 is a National Register-eligible historic resource.</p> <p>Prior to project construction, PG&E will conduct test bores above the bridge to determine whether it will be possible to bury the underground transmission line without damaging the historic bridge. The preferred mitigation under CEQA is avoidance of the resource. If PG&E finds insufficient fill above the bridge to successfully trench without causing damage to the bridge or bridge setting, PG&E will need to consider other methods of crossing the unnamed stream channel, such as directional horizontal drilling of the watercourse.</p> | <p>BART ROW P-41-390. Historic stone railroad bridge on BART ROW just north of Spruce Ave.</p> | <p>CPUC to verify that PG&E has performed the specified pre-construction testing. CPUC to review and approve PG&E proposed mitigation for the potentially significant structure</p> | <p>Significant Historic resources are not adversely affected by construction activity</p> | <p>CPUC</p> | <p>Prior to construction</p> |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|---|---|---|---|---|--------------------|-----------------------|
| C-4: Construction operations have the potential to impact Crystal Springs Dam (Class II) | C-4a: Mitigation for Crystal Springs Dam. The preferred mitigation under CEQA is avoidance of the resource. PG&E shall consider methods of crossing Crystal Springs Dam that will avoid alterations to the structure and setting of the dam. Such construction methods could include an overhead crossing of San Mateo Creek or the construction of a submarine cable placed in the lakebed away from the dam. If avoidance is not feasible, the design of the project shall be evaluated by a qualified architectural historian to define impacts and develop specific mitigation measures. | PG&E Route Alternative 1B Crystal Springs Dam. Historic dam on Skyline Blvd. near Crystal Springs Rd. | CPUC to review and approve PG&E proposed construction method for crossing Crystal Springs Dam. CPUC to review and approve PG&E proposed mitigation for construction at or near Crystal Springs Dam. | Significant historic resources are not adversely affected by construction activity | CPUC | Prior to construction |
| C-5: Construction operations have the potential to impact WSA-JM-2 (Class II) | C-5a: Mitigation for WSA-JM-2. The preferred mitigation under CEQA is avoidance of the resource. PG&E shall consider construction methods at WSA-2 that will avoid the resource. Such construction methods could include project redesign to bypass the resource, or directional horizontal drilling to pass under the resource without disturbing archaeological soils. If avoidance is not feasible, subsurface archaeological testing shall be conducted at WSA-JM-2 to define the subsurface extent and integrity of the site. Additional archival research may also be conducted as a means of corroborating the archaeological data collected. This additional | Modified Existing 230kV Underground ROW Prehistoric site with historic component near Santa Clara Avenue, San Bruno | CPUC to review and approve PG&E proposed construction method for avoidance of WSA-2. If necessary, CPUC to review and approve PG&E proposed data recovery plan for WSA-2. | Significant buried cultural resources are not adversely affected by construction activity | CPUC | Prior to construction |

Table D.5-9. Mitigation Monitoring Program – Cultural Resources (cont.)

| Impact | Mitigation Measure | Location | Monitoring / Reporting Action | Effectiveness Criteria | Responsible Agency | Timing |
|--------|---|----------|-------------------------------|------------------------|--------------------|--------|
| | <p>data gathering phase at each site may be sufficient, on an individual basis, to consider loss of the resource during development as a less than significant impact. Some sites may prove to be inherently complex or significant such that testing alone will not be considered adequate mitigation to permit loss. In those cases, data recovery may be warranted, wherein a more comprehensive subsurface examination based on a Research Design formulated by the principal archaeologist to address pertinent research topics shall be required. The Research Design shall be submitted by the principal archaeologist to the CPUC for approval prior to project construction.</p> | | | | | |