3.5 Cultural Resources

3.5.1 Introduction

This section describes effects related to cultural resources that would be caused by implementation of the TRTP. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for a range of Project alternatives, and recommends measures to reduce or avoid adverse impacts anticipated from Project construction and operation. In addition, existing laws and regulations relevant to cultural resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Project.

SCE's proposed Project involves construction of new and upgraded transmission infrastructure along approximately 173 miles of new and existing ROW from the Tehachapi Wind Resource Area (TWRA) in southern Kern County south through Los Angeles County and the Angeles National Forest (ANF) and east to the existing Mira Loma Substation in Ontario, San Bernardino County, California. The major components of the proposed Project have been separated into eight distinct segments; seven of these are transmission lines, while one encompasses added and upgraded substation facilities. A more detailed description of the proposed TRTP components, by segment, is presented in Chapter 2 of this EIR/EIS. This analysis also includes several alternatives to the proposed Project that the Lead Agencies have determined would accomplish the primary Project purpose and need, are feasible, and would avoid or lessen certain adverse effects associated with SCE's proposed Project.

Cultural resources eligible for the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) may be affected by ground-disturbing activities such as tower site preparation and tower construction; tower removal and replacement; grading of new access or spur roads; use or improvement of existing access roads; installation of new conductor wire (reconductoring) on the existing transmission lines; transportation, storage, and maintenance of construction equipment and supplies; and staging area and material yard preparation and use. Impacts could also result from inadvertent trespass out of designated work areas or roads. Indirect impacts, such as increased erosion, might also occur during operation and long-term presence of the proposed Project.

The information and analysis that is presented in this section has been derived from the *Tehachapi Renewable Transmission Project Cultural Resources Specialist Report*, prepared by Applied Earthworks, Inc. (2008). While this section presents the findings of the *Cultural Resources Specialist Report*, please refer to that report for more detailed information on Project effects related to cultural resources.

Scoping Issues Addressed

During the scoping period for the EIR/EIS (August-October 2007), a series of scoping meetings were conducted with the public and government agencies, and written comments were received by agencies and the public that identified issues and concerns. The following issues related to cultural resources that were raised during scoping are addressed in this section:

- Native American representatives requested that they be included in continuing consultation as the Project proceeds, and that tribal monitors observe ground disturbing construction work to ensure that resources of concern are managed properly.

Summary and Comparison of Alternatives

Table 3.5-1 on the following page presents some key factors related to cultural resources for each alternative. It is important to note that the "Environmental Issues" indicated in Table 3.5-1 are not impact statements, but rather selected information items that provide a comparison between the alternatives. Specific impact statements that have been identified for the Project and alternatives, in accordance with the significance criteria introduced in Section 3.5.4.1 (Criteria for Determining Impact Significance), are further described in Sections 3.5.5 through 3.5.11.

3.5.2 Affected Environment

According to 36 CFR 800.16(d), the Area of Potential Effects (APE) is the geographic area or areas within which a federally funded, authorized, or permitted project (in this case, the TRTP) may directly or indirectly cause changes in the character or use of properties listed on, or eligible for listing on, the National Register of Historic Places, if such properties exist. For the TRTP, the Forest Service, in consultation with the California State Historic Preservation Officer (SHPO) and the CPUC, established the APE in which efforts to identify cultural resource impacts occurred.

The area of potential effects is influenced by the scale and nature of the proposed Project and alternatives and may be different for different kinds of effects. The APE includes:

- All alternative locations for all elements of the undertaking;
- All locations where the undertaking may result in ground disturbance;
- All locations from which elements of the undertaking (e.g. Structures or land disturbance) may be visible or audible; and
- All locations where the activity may result in changes in traffic patterns, land use, public access, etc.

For the TRTP, the APE is defined as a continuous corridor along all segments of the proposed Project and alternatives, including locations of existing and new transmission structures, existing and new substations, access and spur roads, and areas of temporary construction activity. On the ANF (Segments 6 and 11), the APE is 500 feet wide. For any marshalling yards, wire setup sites, helicopter staging areas, helicopter landing zones, or other areas similarly used for the Project outside the 500-foot wide corridor, the APE also includes a 100-foot wide buffer beyond the proposed boundary of the proposed use area. For any access and spur roads, construction turn-arounds, guard pole locations, or other linear facility outside the 500-foot wide corridor, the APE extends for 50 feet on either side of the center line.

For Project Segments 4, 5, 7, 8, 9 (Substations), and 10, which are outside the boundaries of the ANF, the APE is 250 feet wide. For any marshalling yards, wire setup areas, helicopter staging areas, helicopter landing zones, or other areas similarly used for the Project outside the 250-foot wide corridor, the APE also includes a 50-foot wide buffer beyond the proposed boundary of the proposed use area. For any access and spur roads, construction turn-arounds, guard pole locations, or other linear facility outside the 250-foot wide corridor, the APE extends for 50 feet on either side of the center line.

Table 3.5-1. Summary Comparison of Environmental Issues – Cultural Resources

Environmental Issues	Alternative 1 (No Project/ Action)	Alternative 2 (SCE's Proposed Project)	Alternative 3 (West Lancaster)	Alternative 4 (Chino Hills)	Alternative 5 (Partial Underground)	Alternative 6 (Max. Helicopter in ANF)	Alternative 7 (66-kV Subtransmission)
Number of identified resources in the APE.	The number and nature of cultural resources cannot be determined without specific information about actions that might occur in lieu of the Project.	135 (57 prehistoric/73 historical/5 both)	Same as Alternative 2.	139 (58 prehistoric/75 historical/6 both)	Same as Alternative 2.	142 (63 prehistoric/74 historical/5 both)	151 (57 prehistoric/88 historical/6 both)
Number of resources avoided.	Resources in the Project APE would be avoided, but new projects in lieu of the Project affect other resources.	Not known without additional information.	None.	Five along Segment 8A.	Not known without additional information.	Not known without additional information.	None.
Number of resources added.	Not known.	Not known without additional information.	None.	9	Not known without additional information.	7	10
New/Expanded ROW required?	Not known.	Yes; 43.8 miles.	Yes; 44.2 miles.	Yes. Route A: 49.6 miles Route B: 53.1 miles Route C: 52.7 miles Route D: 53.2 miles	Same as Alternative 2.	Same as Alternative 2.	Yes; 44.0 miles.
Disturbance in previously undisturbed areas?	Impacts would occur as a result of various actions in lieu of the Project, but the extent of such impacts is not known.	Yes.	Yes, but greater than Alternative 2.	Yes, but greater than Alternative 2.	Yes; extent unknown without additional information.	Yes; extent unknown without additional information.	Yes; extent unknown without additional information.
Potential for unanticipated discoveries during construction.	Impacts would occur as a result of various actions in lieu of the Project, but the extent of such impacts is not known.	Yes.	Yes, but greater than Alternative 2.	Yes, but greater than Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Yes, but greater than Alternative 2.

Background Research

Pacific Legacy, Inc. and Applied EarthWorks, Inc. conducted records searches and background research for the proposed Project and Project alternatives. Principal repositories of baseline data were the Archaeological Information Centers of the California Historical Resources Information System, including:

- Southern San Joaquin Valley Information Center, Department of Anthropology, California State University, Bakersfield
- The South Central Coastal Information Center, Department of Anthropology, California State University, Fullerton
- San Bernardino Archeological Information Center, San Bernardino County Museum, Redlands

In addition to the data contained on their site location and survey coverage base maps, the Information Centers also provided records of properties listed in the following historic registers maintained by the State of California:

- National Register of Historic Places (Directory of Determinations of Eligibility, California Office of Historic Preservation, Volumes I and II, 2001)
- California Inventory of Historic Resources (State of California 1976)
- California Historical Landmarks (State of California 1996)
- California Points of Historical Interest listing (State of California 1992)
- Historic Property Data File (State of California 2005)

In addition, the Supervisor's Office of the Angeles National Forest, Arcadia, California, provided information on cultural resource inventories and cultural properties within the Forest. At each of these facilities, survey coverage base maps were examined along with relevant historic maps, excavation and survey reports, and cultural resource records. Existing site forms were obtained for recorded sites within one-quarter mile of transmission lines and other facilities. The records searches revealed that 443 prior cultural resource studies had been completed within one mile of the APE; 97 of these studies were located on the ANF. Of these prior studies, 148 crossed or encompassed some portion of the APE, including 83 on the ANF. Specific details of the records searches and field surveys are discussed by individual Project alternative below.

Native American Consultation

Pacific Legacy, Inc. submitted a request to the California Native American Heritage Commission (NAHC) for a search of their Sacred Lands Inventory files to identify culturally significant properties along Project segments. In a letter dated February 20, 2007, the NAHC replied that no sacred lands were known to the NAHC in the TRTP or the immediate vicinity. As a result of changes in the Project description a second request was sent to the NAHC on April 4, 2007. The NAHC replied on April 23, 2007, that several sites known to contain human remains exist in the vicinity of the TRTP. They recommended that organizations and individuals on the NAHC contacts list for Kern and Los Angeles counties be consulted. Additional details on the proponent's efforts to consult concerned Native American representatives are presented in the Proponent's Environmental Assessment.

The Forest Service also conducted independent tribal consultation regarding the Project. In a letter dated August 31, 2007, the ANF invited 57 Native American representatives of 30 different tribal governments to comment on the TRTP as part of the scoping process for the EIR/EIS. To date, the ANF has received one written response; the Soboba Band of Luiseño Indians requested that they be included in continuing consultation as the Project proceeds, and that Native American monitors observe ground disturbing

construction work. In December 2008 and January 2009, the ANF conducted follow-up consultation with the tribes regarding the development of a Plan of Action for compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) (see Section 3.5.3.1, below).

Field Inventory of Cultural Resources

On behalf of SCE, Pacific Legacy, Inc. performed an archaeological survey of the proposed Project and alternatives between November 11, 2006, and April 4, 2007. Applied EarthWorks, Inc. (Æ) conducted supplemental field inspections between September 2007 and December 2008 to augment the data collected by Pacific Legacy and examine alternatives to SCE's proposed Project identified subsequent to their survey, verify the locations of previously identified resources, assist with impact assessments, and cover previously unsurveyed lands within the APE. In particular, Æ conducted field surveys of selected routing alternatives, temporary construction sites, helicopter staging areas, and other ancillary Project areas likely to be disturbed during construction but not identified at the time of the original surveys by Pacific Legacy. These selected surveys included the Chino Hills Routes A, B, C, and D (Alternative 4), West Lancaster (Alternative 3), and underground and reroute elements of the 66-kV Subtransmission Alternative (Alternative 7), as well as sections of service/access roads to be upgraded during proposed Project activities along Segment 4 and several proposed temporary construction areas (wire setup sites) within Segment 10. In addition, Æ surveyed seven helicopter staging areas proposed by SCE for Alternative 2 (SCE's Proposed Project) and 11 helicopter staging areas proposed by the ANF for Alternative 6 (Maximum Helicopter Construction in the ANF).In most areas the survey corridor measured 125 feet on either side of the existing transmission line, for a total width of 250 feet. In the ANF, however, the survey corridor expanded to 250 feet on either side of the transmission line, for a total width of 500 feet. Within these corridors, parallel survey transects were spaced no more than 12.2 meters (40 feet) apart. Cultural resources discovered during the surveys were documented using the standard State of California cultural resource records (DPR 523 forms). Records for previously recorded sites were updated using the same forms. A Trimble GeoExplorer XT global positioning system (GPS) unit was used to record site boundaries (calibrated to NAD 83).

As described in Sections 3.5.2.2 through 3.5.2.7 below, 135 archaeological and historical sites have been recorded within the APE of the proposed Project, with additional resources along some Project alternatives. Data provided by SCE's consultant did not distinguish between previously recorded sites and those identified during surveys conducted specifically for the TRTP. Approximately 40 percent of the identified sites dated to the prehistoric era, while approximately 56 percent were historical and four percent contained both prehistoric and historical components. Of the prehistoric archaeological sites, approximately 25 percent were habitation sites containing midden deposits while 50 percent were lithic tool and debris scatters. Other prehistoric site types included bedrock milling stations, hunting blinds, trails, quarries, and rock art.

Nearly half of the historic-era resources were roads, trails, or other transportation features. Approximately 15 percent were refuse scatters, while another 15 percent were associated with energy generation or transmission. Other historical themes represented in the inventory include mining, ranching/farming, water distribution, and national defense. One historic district and one potential district also were identified.

3.5.2.1 Regional Setting

Prehistoric Cultural Setting

Archaeologists have defined a series of cultural traditions and periods for this region beginning at the end of the Pleistocene Period (~12,000 years before present [B.P.]) and running through the Contact Period (~A.D. 1700/300 B.P.). These periods are often overlapping in duration and regional distribution. The following is a summary of these periods. For a more detailed treatment of the prehistory of this region, the reader is directed to works such as Warren (2004) and Sutton (1988).

Terminal Pleistocene/PaleoIndian (12,000-10,000 B.P.)

Within the Western Mojave Desert region the Terminal Pleistocene/PaleoIndian period featured increasing post-glacial temperatures and unstable climates. Archaeologists hypothesize that the earliest occupants of the region led a foraging lifestyle focused around lakeshore or wetland environments (Davis 1978; Moratto 2004). Population density was presumably quite low. The toolkit included large lanceolate and fluted points (e.g., Clovis or Folsom) for hunting game, as well as crescents, gravers, scrapers, choppers, perforators, and numerous small formalized and informal flake tools (Davis 1978). Ground stone implements were rare, indicating that processed seeds or nuts did not play a significant dietary role. While no archaeological sites dating to this period have been noted within the study area, at least one Clovis style projectile point has been recovered from the nearby Tehachapi Mountains (Glennan 1987:26-27).

Early Holocene/Lake Mojave (10,000-7,000 B.P.)

As climatic conditions became warmer and more arid during the transition from the late Pleistocene to the early Holocene, human populations responded by focusing their subsistence efforts on a wider variety of faunal and floral resources. It is presumed that the adaptive strategy continued to be one of generalized hunting and gathering focused on the exploitation of wetland resources (Basgall and Hall 1993; Warren 1980, 1984). The Lake Mojave tool kit contains crescents, knives, scrapers, gravers and perforators (Earl et al. 1997), as well as the diagnostic Mojave and Silver Lake projectile points. While a Mojave point was recovered from the lower levels of site CA-KER-303 (within 0.25 mile of Project corridor) it was considered to be an anomaly (R.W. Robinson in Sutton 1988:32).

Pinto Period (7,000-4,000 B.P.)

In the desert regions of southern California, the Pinto Period succeeded the Lake Mojave Period, beginning at approximately 7000 B.P. and lasting to 4000 or 3500 B.P. Relatively recent paleoecological and paleohydrological evidence suggests maximum aridity in the desert regions between ca. 7000 and 5000 B.P., with amelioration beginning at approximately 5500 B.P. and continuing through 4000 B.P. (Spaulding 1991, 1995). During this period, it is believed that populations diminished and dispersed due to the decrease in permanent wetland habitats; thus, the Pinto Period reflects a settlement pattern in which the population relocated from the ancient lakeshores to seasonal water sources. As an adaptive response to these changing climatic conditions, greater emphasis was placed on the exploitation of plants and small animals than during the preceding Lake Mojave Period (Warren 1980, 1984). Sites dating to this period tend to be small temporary seasonal camps located near streams and seasonal water sources. They lack developed middens but contain a diverse toolkit consisting of Pinto projectile points, large and small leaf-shaped bifaces, domed and heavy-keeled scrapers, numerous core/cobble tools, large blocky grinding slabs (metates) evincing minimal wear and small, thin, extensively used milling slabs, and shaped and

unshaped handstones (manos). The appearance of milling tools indicates an increased reliance on seeds and nuts from the scrub and chaparral plant communities as wetland resources diminished. Rhyolite, fine-grained basalts, and poorer quality chert and quartz materials tend to dominate the lithic assemblages.

Gypsum Period (4000–1500 B.P.)

As a result of increased precipitation after 5000 B.P., modern vegetation and climate conditions were well established by 4300 B.P. Mesquite trees, oaks on the valley margins, and piñon were readily available; manos and milling slabs continued to be used, but mortars and pestles also were introduced to process mesquite pods, acorns, pine nuts, yuccas, and agaves. Large village sites appear in the archaeological record, reflecting a transition from seasonal migration to year-round or semi-sedentary settlement (Sutton 1988). In general, the projectile points of this cultural period are fairly large (dart point size), but also include more refined notched (Elko), concave base (Humboldt), and small stemmed (Gypsum) forms. In addition to diagnostic projectile points, Gypsum Period sites include leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, and occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Other artifacts include shaft smoothers, incised slate and sandstone tablets and pendants, bone awls, Olivella shell beads, and Haliotis beads and ornaments. A wide range of perishable items dating to this period was recovered from Newberry Cave, located along the Mojave River near the southern end of the Troy Lake Basin, including atlatl hooks, dart shafts and foreshafts, sandals and S-twist cordage, and tortoise-shell bowls. The presence of coastal marine shell artifacts (e.g., *Olivella* beads) and Coso obsidian indicate that long distance exchange systems were in place. Ritual activities also became important during the Gypsum Period, as evidenced by split-twig figurines (likely originating from northern Arizona), petroglyphs depicting hunting scenes, and elaborate mortuary rituals reflecting a high degree of social complexity.

Saratoga Springs Period (1500–800 B.P.)

Paleoenvironmental conditions were little changed from the preceding period, and throughout much of the California deserts cultural trends during the Saratoga Springs Period essentially continued Gypsum Period adaptations. Unlike the preceding period, however, the Saratoga Springs Period is marked by strong regional cultural developments, especially in the southern California desert area, which was heavily influenced by the Hakataya (Patayan) culture of the lower Colorado River (Warren 1984:421–422). The initial date for the first Hakataya influence on the southern Mojave Desert remains unknown; however, it does appear that by about 1000 to 1100 B.P. the Mojave Sink was heavily influenced, if not occupied by, lower Colorado River peoples.

Turquoise mining and long distance trade networks appear to have attracted both the Anasazi and Hakataya peoples into the California deserts from the east and southeast; these networks moved Buff and Brownware pottery and Cottonwood and Desert Side-notched projectile points from the interior to the coast in exchange for large quantities of shell beads and steatite items. Various other local products, including stone beads and schist and steatite ground stone artifacts, reflect the development of a regional stone trade. Schist and steatite stone workshops have been identified at habitation sites along Amargosa Creek west of Palmdale (Earle 2003).

Late Period (800–300 B.P.)

The Late Period saw the end of the obsidian trade an increased use of local cryptocrystallines. Earle (2003) suggests that changes in regional networks of raw material exchange may be associated with a drought episode (circa 850–650 B.P.) and the migration of Numic-speaking populations out of

southeastern California. Global warming after 1000 B.P. Global warming between about 1,000 and 500 years ago also may have prompted cultural changes. Thereafter, and lasting throughout the ensuing Contact/Ethnographic Period, cooler temperatures and greater precipitation ushered in the Little Ice Age, during which time ecosystem productivity greatly increased along with the availability and predictability of water (Spaulding 2001).

With the return of wetter conditions around 500 B.P., there is some evidence of population increase in southern California and archaeological evidence indicates that the Late Period populations utilized a greater variety of subsistence resources, including both small and large mammals, and in some areas, fish. The continuation of milling technologies reflects a persistence of seed collecting, and the frequency of special purpose sites increases proportionally with a growing awareness of resource availability and potential (McIntyre 1990).

Contact Period/Ethnographic

When Europeans arrived in southern California, the western Mojave Desert, San Gabriel Mountains, and Eastern Los Angeles Basin were inhabited by at least three distinct cultural groups with the occasional presence of several others. These groups include members of the Kitanemuk, Tataviam, Vanyume, and Gabrieliño tribes.

At the northern end of the Project area, the Kitanemuk spoke a Takic language and inhabited the region along the southern foothills of the Tehachapi Mountains (Blackburn and Bean 1978). While no clearly identified Kitanemuk sites lie within the Project APE, CA-KER-303 appears to fall within the Kitanemuk area; no ethnic affiliation was made during investigations at that site. Along the south side of the Antelope Valley and into the San Gabriel Mountains lived the Tataviam, another Takic speaking people (King and Blackburn 1978). Several different tribes are thought to have shared the Antelope Valley proper, including the Kitanemuk to the north and the Vanyume/Serrano groups up from the Mojave River area. The Vanyume or Dessert Serrano, another Takic speaking tribe, came up from the Mojave River Region. The region from the eastern San Gabriel Mountains and south into the Los Angeles Basin was inhabited by the Gabrieliños, another Takic speaking group (Bean and Smith 1978). While no clearly identified Tataviam or Gabrieliño sites are noted within the Project APE, CA-LAN-1128/H could prove to be a village site associated with either of these tribal groups. The alternate routes of this Project that pass through the Chino Hills area pass near the Gabrieliño community of *Pashiinonga*, who's native population, along with most of these groups, was forcibly relocated to Mission San Gabriel Archangel in the late 1700s (McCawley 1996:48-49).

Historic Period

Spanish/Mexican Period (1760s-1848):

The Spanish development of Alta California began in earnest with the establishment of the chain of 21 Franciscan Missions stretching from San Diego to San Francisco The two Missions that most influenced the region through which the Project corridor passes are Mission San Gabriel Archangel (1771) and Mission San Fernando Rey de Espania (1797).

The first Europeans to enter the Antelope Valley were Spanish soldiers and missionaries exploring the interior of Alta California. In 1772, Captain Pedro Fages passed through the valley while searching for mission deserters; his expedition took him through the Tejon Pass and ultimately into the San Joaquin Valley. Four years later, Father Francisco Garces traveled through the Antelope Valley along the Mojave

Indian Trail. California Historic Landmark No. 130 in Rosamond marks the location where the Franciscan friar stopped at Willow Springs (Tipton 1988). By the 1800s, significant population reduction had occurred as Native populations were forcibly relocated to the above mentioned missions. American explorers and pioneers did not reach the Antelope Valley until the 1820s, when Jedediah Smith and Kit Carson led trapping expeditions into the region. They were followed by John Fremont in 1844.

In 1821, Mexico declared its independence from Spain. After this time the Missions were secularized and Mission lands were broken into large land grants and ranchos. Lumbering in the mountains and ranching in the valleys and basins characterize local resource exploitation during this period.

American Period (1848-Present)

With the end of the Mexican American War and the treaty of Guadalupe Hidalgo, California was ceded to the United States of America. California's accession to the union in 1850 led to several developments in the region. In 1854, Fort Tejon was established to protect the major north south throughway west of the Project area. The Butterfield Stage began service through the Antelope Valley in 1858. A telegraph line between Los Angeles and San Francisco was run through the region in 1860. Sparse ranches were established in the region throughout the 1860s.

With construction of the Southern Pacific Railway through the Antelope Valley in 1876, farming became popular in the area. The towns of Acton, Alpine (Palmdale), Lancaster, and Rosamond were established along the rail line. Ranching declined due to a series of severe droughts in the late 1800s, but the completion of the Los Angeles Aqueduct (CA-KER-3549H / CA-LAN-2105H) between the Owens Valley and Los Angeles in 1913 brought increased agriculture and ranching to the area.

Throughout the late eighteenth and nineteenth centuries, the San Gabriel Mountain region was used for a variety of commercial enterprises including lumbering, mining, herding stock, as well as for hunting, camping, and other recreation. Beginning in the 1770s, lumber was cut for the construction of the missions and later for the construction of the communities of the Los Angeles Basin. The first gold rush in the San Gabriel's was triggered by Francisco Lopez in 1842 (Robinson 1991:17). Early copper mining occurred in the Ravennna area of Soledad Canyon, and a few years latter (1857) northwest of Little Rock Reservoir (Earl 2003). Several historic mines are located in the Project vicinity, including the western adits of Falcon Mine (CA-LAN-2206H) where several hundred tons of gold were recovered between 1939 to 1942 (Robinson 1991:51) and the Gold Bar Mining Claim (CA-LAN-1315H). Cattle and sheep from ranches in the Los Angeles Basin used the mountains and higher reaches during times of drought throughout the 1800s and early 1900s.

Land in the eastern Los Angeles Basin was settled throughout the mid to late nineteenth century, beginning with El Monte, at the terminus of the Santa Fe Trail, in 1852. Rosemead was settled in the 1870s though its post office was not established until 1927; Pasadena was established shortly thereafter and received a post office in 1874, followed by Irwindale in 1899. Baldwin Park developed around the Pacific Electric Station in 1912 (Gudde 1988). The alternate routes of this Project that pass through the Chino Hills, cross grazing lands once foraged by the Frank Pellissier dairy cattle herd (1880s – 1940s) as well as the Rolling M Ranch, which was active from the late 1940s through the 1980s when the area was purchased by the State of California for the Chino Hills State Park. Intensive agriculture and citrus groves began with the missions and culminated in the major commercial growing boom of the early 20th Century.

3.5.2.2 Alternative 2: SCE's Proposed Project

Archival research and pedestrian surveys conducted by Pacific Legacy and augmented by Applied Earthworks, Inc. identified 135 cultural resources within the APE of SCE's proposed Project (see Section 3.5.2 above for a description of the APE). Of these, 57 date from prehistoric times, 73 are from the historic period, and five contain both prehistoric and historical remains. Prehistoric cultural resources encompass a variety of site types including large villages and residential sites, smaller campsites, lithic scatters, milling stations and processing areas, and rock art sites. Historic cultural resources include roads and trails, structural remains, mines and mining related features, refuse dumps, and artifact scatters. Table 3.5-2 lists all cultural resources encountered within the APE of SCE's proposed Project. The table provides the numeric designation of each site (Smithsonian trinomial, State primary number, Forest Service number, and/or temporary field number), the period of association, and available information on National Register eligibility.

3.5.2.3 Alternative 3: West Lancaster Alternative

Applied EarthWorks, Inc. performed a comprehensive pedestrian survey of the Project reroute proposed under Alternative 3, the West Lancaster Alternative, and did not identify any cultural resources. No known sites are avoided by this alternative. Thus, the affected environment for Alternative 3 is identical to that described for Alternative 2 (SCE's proposed Project) above (see Table 3.5-2).

Table 3.5-2. Cultural Resources Inventory: Alternative 2

Segment	Temporary Designation	Trinomial	Primary	Forest Service	Period	National Register Eligibility
4	PL-SCE-Tehachapi-02H				Historic	Not Evaluated
	PL-SCE-Tehachapi-03/H				Prehistoric/ Historic	Not Evaluated
		CA-KER-303	P-15-000303		Prehistoric	Not Evaluated
		CA-KER-2172	P-15-002172		Prehistoric	Not Evaluated
		CA-KER-733	P-15-000733		Prehistoric	Not Evaluated
		CA-LAN-1783	P-19-001783		Prehistoric	Not Evaluated
		CA-LAN-3795	P-19-003795		Prehistoric	Not Evaluated
			P-19-003477		Historic	Not Evaluated
	PL-SCE-Tehachapi-04				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-06				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-07				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-08				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-09				Prehistoric	Not Evaluated
	Pl-SCE-Tehachapi-30H				Historic	Not Evaluated
	PL-SCE-Tehachapi-54H				Historic	Not Evaluated
	PL-SCE-Tehachapi-ISO02				Prehistoric	Not Eligible
	PL-SCE-Tehachapi-ISO17				Prehistoric	Not Eligible
	PL-SCE-Tehachapi-ISO18				Prehistoric	Not Eligible
5		CA-LAN-1636			Prehistoric	Not Evaluated
		CA-LAN-1770	P-19-001770		Prehistoric	Not Evaluated
		CA-LAN-1771	P-19-001771		Prehistoric	Not Evaluated
		CA-LAN-1956	P-19-001956		Prehistoric	Not Evaluated
		CA-LAN-1957	P-19-001957		Prehistoric	Not Evaluated
		CA-LAN-806			Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-13				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-14				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-16				Prehistoric	Not Evaluated

Table 3.5-2. Cultural Resources Inventory: Alternative 2

Segment	Temporary Designation	Trinomial	Primary	Forest Service	Period	National Register Eligibility
5 continued	PL-SCE-Tehachapi-17				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-18				Prehistoric	Not Evaluated
			P-19-003385		Historic	Not Evaluated
			P-19-003477		Historic	Not Evaluated
	PL-SCE-Tehachapi-10H				Historic	Not Evaluated
6				05015400076	Historic	Not Evaluated
				05015199008	Prehistoric	Not Eligible
				05015100156	Historic	Not Evaluated
			P-19-186877	05015500187	Historic	Not Evaluated
			P-19-186876	05015500186	Historic	Not Evaluated
		CA-LAN-1299	P-19-001299	05015100045	Prehistoric	Not Evaluated
		CA-LAN-1300	P-19-001300	05015100046	Prehistoric	Not Evaluated
		CA-LAN-1382	P-19-001382	05015500025	Prehistoric	Not Evaluated
		CA-LAN-2212	P-19-002212	05015100067	Prehistoric	Not Evaluated
		CA-LAN-2363	P-19-002363	05015500076	Prehistoric	Not Evaluated
		CA-LAN-2411	P-19-002411	05015500082	Prehistoric	Not Evaluated
		CA-LAN-3009	P-19-003009	05015500172	Prehistoric	Not Evaluated
		CA-LAN-3031	P-19-003031	05015100091	Prehistoric	Eligible
		CA-LAN-3032	P-19-003032	05015100094	Prehistoric	Eligible
			P-19-003018	05015100092	Prehistoric	Not Evaluated
			P-19-003025	05015500149	Prehistoric	Not Evaluated
			P-19-003136	05015100147	Prehistoric	Not Evaluated
				05015100148	Historic	Not Evaluated
				05015200133	Historic	Not Evaluated
				05015200136	Historic	Not Evaluated
		CA-LAN-1315H	P-19-001315	05015100029	Historic	Not Evaluated
		CA-LAN-1357H	P-19-001357	05015100018	Historic	Not Evaluated
		CA-LAN-2206H	P-19-002206	05015500048	Historic	Not Evaluated
			P-19-003037	05015100111	Historic	Not Eligible
			P-19-003606	05015400226	Historic	Not Evaluated
			P-19-120074	05015100098	Historic	Not Evaluated
			P-19-186545	05015500116 05015500158	Historic	Not Eligible
			P-19-186875	05015500188	Historic	Not Evaluated
			P-19-186917	05015200102	Historic	Not Evaluated
			P-19-186921	05015100102	Historic	Not Evaluated
			P-19-186925	05015500194	Historic	Not Evaluated
			P-19-187713	05015500185	Historic	Not Eligible
		CA-LAN-1128/H CA-LAN-2131	P-19-001128	05015500006 05015500120	Prehistoric/ Historic	Not Evaluated
			P-19-120072	05015500184	Prehistoric/ Historic	Not Evaluated
	LA-09-L				Historic	Not Eligible
	PL-SCE-Tehachapi-02				Historic	Not Evaluated
	PL-SCE-Tehachapi-23H				Historic	Not Evaluated
7			P-19-186917	05015200102	Historic	Not Evaluated
	Woodland Duck Farm				Historic	Not Eligible
	Montebello Hills Oil Field				Historic	Not Evaluated
8			P-19-100277		Historic	Not Eligible
			P-19-120031		Prehistoric	Not Evaluated
			P-19-120032		Prehistoric	Not Evaluated

Table 3.5-2. Cultural Resources Inventory: Alternative 2

Segment	Temporary Designation	Trinomial	Primary	Forest Service	Period	National Register Eligibility
8 continued			P-36-012533		Historic	Not Evaluated
			P-36-012621		Historic	Not Evaluated
			P-36-012622		Historic	Not Evaluated
	PL-SCE-Tehachapi-024H				Historic	Not Evaluated
9			P-19-003477		Historic	Not Evaluated
			P-19-186870	05015100143	Historic	Not Evaluated
			P-19-187713	05015500185	Historic	Not Eligible
			P-19-186876	05015500186	Historic	Not Evaluated
	PL-SCE-Tehachapi-ISO02				Prehistoric	Not Eligible
10	PL-SCE-Tehachapi-25				Prehistoric	Not Evaluated
		CA-KER-6340	P-15-010951		Historic	Not Evaluated
		CA-KER-3549H	P-15-0003549		Historic	Eligible
		CA-KER-6937H	P-15-012247		Historic	Not Evaluated
	PL-SCE-Tehachapi-34H				Historic	Not Evaluated
	PL-SCE-Tehachapi-ISO06				Historic	Not Eligible
	PL-SCE-Tehachapi-ISO07				Prehistoric	Not Eligible
	PL-SCE-Tehachapi-ISO08				Prehistoric	Not Eligible
	PL-SCE-Tehachapi-ISO09				Prehistoric	Not Eligible
11		CA-LAN-2350	P-19-002350	05015500069	Prehistoric	Not Evaluated
		CA-LAN-2412	P-19-002412	05015500083	Prehistoric	Not Evaluated
			P-19-002998	05015500166	Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-22				Prehistoric	Not Evaluated
	PL-SCE-Tehachapi-35				Prehistoric	Not Evaluated
				05015100006	Historic	Eligible/listed
				05015100063	Historic	Not Evaluated
				05015100086	Historic	Not Evaluated
				05015100087	Historic	Not Evaluated
				05015100192	Historic	Not Evaluated
				05015100203	Historic	Eligible/listed
				05015500223	Prehistoric	Not Evaluated
				05015599014	Prehistoric	Not Eligible
			P-19-186925	05015500194	Historic	Not Evaluated
			P-19-100439	05015599010	Prehistoric	Not Eligible
			P-19-100496	05015599011	Prehistoric	Not Eligible
		CA-LAN-3152	P-19-003152	05015100037	Historic	Not Eligible
			P-19-003037	05015100111	Historic	Not Eligible
			P-19-003090	05015100123	Historic	Contributing element, Mt. Lowe Historic District
			P-19-003099	05015100114	Historic	Not Evaluated
			P-19-003638	05015100199	Historic	Not Evaluated
			P-19-180689	05015100128 05015100129	Historic	Contributing element, Mt. Lowe Historic District
			P-19-186860	05015100138	Historic	Not Evaluated
			P-19-186870	05015100143	Historic	Not Evaluated
			P-19-186871	05015100142	Historic	Not Evaluated
			P-19-186872	05015100144	Historic	Not Evaluated
			P-19-186873	05015100145	Historic	Not Evaluated
			P-19-186876	05015500186	Historic	Not Evaluated

Table 3.5-2. Cultural Resources Inventory: Alternative 2

Segment	Temporary Designation	Trinomial	Primary	Forest Service	Period	National Register Eligibility
11 continued			P-19-186877	05015500187	Historic	Not Evaluated
			P-19-186921	05015100102	Historic	Not Evaluated
			P-19-186923	05015100103	Historic	Not Evaluated
			P-19-187713	05015500185	Historic	Not Eligible
	PL-SCE-Tehachapi-02				Historic	Not Evaluated
	PL-SCE-Tehachapi-21H				Historic	Not Evaluated
	PL-SCE-Tehachapi-23H				Historic	Not Evaluated
	PL-SCE-Tehachapi-33H				Historic	Not Evaluated
	PL-SCE-Tehachapi-ISO10				Prehistoric	Not Eligible
		CA-LAN-2343H	P-19-002343	05015100073	Prehistoric/ Historic	Eligible
		CA-LAN-3295/H		05015500193	Prehistoric/ Historic	Not Evaluated
	AE-TRTP-RSS-1				Prehistoric	Not Evaluated
	AE-TRTP-3			Possibly 05015500235	Prehistoric	Not Evaluated
	AE-TRTP-ISO-1			Possibly 050155990011	Prehistoric	Not Eligible

3.5.2.4 Alternative 4: Chino Hills Route Alternatives

Applied EarthWorks, Inc. performed record searches at the South Central Coastal Information Center of the California Historical Resources Information System, Department of Anthropology, California State University, Fullerton to identify previously recorded resources along the Chino Hills alternatives in Orange and Los Angeles Counties. Æ also performed records searches at the San Bernardino Archeological Information Center, San Bernardino County Museum, Redlands to identify previously recorded resources along the Chino Hills alternatives in San Bernardino County. One prehistoric archaeological site, four prehistoric isolates, and three historical sites had been recorded previously within 0.25 mile of the Chino Hills Route Alternatives; however, only one resource had been identified previously within the 250 foot wide APE. CA-SBR-3690/H is located along the Chino Hills Alternative B and contains both prehistoric and historic remains. In addition, four previously recorded sites (two prehistoric lithic scatters and two historical sites) are located along the three all-weather access routing options to the switching station.

Applied EarthWorks, Inc. performed pedestrian surveys of the four routing alternatives in Chino Hills from December 8-13, 2008. These surveys did not cover the Aerojet property traversed by Alternative 4, nor were proposed all-weather access roads covered during the survey. Three previously undocumented historical sites and one isolated artifact were discovered and recorded during this survey; one of these is an oil well installation while the others are agricultural. Æ field teams also relocated CA-SBR-3690/H and updated the site record to include the historic elements of the site, which had not been recorded previously.

Five resources along Segment 8A to the west of the point where the Chino Hills Alternative Routes diverge from the proposed Project would be avoided if this alternative were selected. They are listed in Table 3.5-4. Thus, the affected environment for Alternative 4 includes 139 cultural resources, encompassing those described for Alternative 2 above (see Table 3.5-2) as well as the additional resources listed in Table 3.5-3, but excluding those listed in Table 3.5-4. Of these, 58 date from prehistoric times,

75 are from the historic period, and six contain both prehistoric and historical remains. Most of the added resources are related to the historical themes of ranching and agriculture.

Table 3.5-3. Additional Cultural Resources Along Alternative 4

Temporary Designation	Trinomial	Primary	Period	National Register Eligibility
AE-1641-1H			Historic	Not Evaluated
AE-1641-2H			Historic	Not Evaluated
AE-1641-3H			Historic	Not Evaluated
AE-1641-4H			Historic	Not Eligible
	CA-SBR-3690		Prehistoric/ Historic	Not Evaluated
	CA-SBR-6021		Prehistoric	Not Evaluated
	CA-SBR-4033H		Historic	Not Evaluated
	CA-SBR-5097H		Historic	Not Evaluated
	CA-SBR-5283		Prehistoric	Not Evaluated

Table 3.5-4. Cultural Resources Avoided as a Result of Alternative 4 Reroutes

Temporary Designation	Trinomial	Primary	Period	National Register Eligibility
		P-19-120032	Prehistoric	Not Evaluated
		P-36-012533	Historic	Not Evaluated
		P-36-012622	Historic	Not Evaluated
PL-SCE-Tehachapi-024H			Historic	Not Evaluated
PL-SCE-Tehachapi-05H			Historic	Not Evaluated

3.5.2.5 Alternative 5: Partial Underground Alternative

Alternative 5 follows existing alignments and does not diverge geographically from SCE's proposed Project (Alternative 2). As a result, the affected environment for Alternative 5 is identical to that described for Alternative 2 above (see Table 3.5-2).

3.5.2.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Alternative 6 was first developed in June and July 2008 and expanded in October and November 2008. To identify prior cultural resource surveys and previously identified archaeological and historical sites in the expanded APE for the Maximum Helicopter Alternative (i.e., at helicopter staging areas and landing zones, wire setup sites, and construction yards), Applied EarthWorks, Inc. conducted a records search at the South Central Coastal Information Center of the California Historical Resources Information System, housed at California State University, Fullerton and the ANF, Arcadia, California. The records searches covered a one-half mile radius surrounding each of the proposed helicopter staging and work areas. Sixteen previously identified cultural resources are located within the proposed helicopter staging and construction areas, while 12 are located immediately adjacent and 80 more are within the half mile study radius.

Between July and December 2008, Applied EarthWorks, Inc. performed cultural resource surveys of 18 proposed helicopter staging areas, one wire setup site, and three construction yards. Three proposed staging areas were subsequently eliminated, leaving 15 staging areas under consideration, ten of which (and all of the construction yards) also would be used for helicopter construction under Alternative 2. A

field crew composed of one or two archaeologists surveyed each area on foot using transects spaced at 10 to 15 meter intervals. All landforms likely to contain prehistoric or historical resources were examined. Steep hillsides (greater than 25 degrees) were excluded from survey as they were deemed unlikely to contain cultural resources. As shown on Table 3.5-5, Æ relocated 16 previously recorded cultural resources and discovered five previously unrecorded sites (TRTP-RSS-1, Æ-TRTP-1, -2, -3, and –ISO-1) in the staging areas and other locations under consideration. The five newly discovered resources include four low density prehistoric lithic scatters and one isolated obsidian flake, while the previously recorded resources include lithic scatters and temporary camps as well as two larger Native American habitation sites. Historical sites are principally linear features such as trails, roads, and transmission lines, several of which intersect more than one staging area.

Of the 21 identified resources, 14 are also within the affected environment for Alternative 2 because they also intersect the main transmission corridor or are within staging areas that would be used during construction of either alternative. It remains to be determined whether any resources would be avoided by adoption of the Maximum Helicopter Alternative (Alternative 6). Thus, the affected environment for Alternative 6 contains 142 cultural resources, including those described for Alternative 2 above (see Table 3.5-2) as well as seven additional resources listed in Table 3.5-5.

Table 3.5-5. Cultural Resources within or Immediately Adjacent to Alternative 6 Helicopter Staging Areas

Staging Area	Sites Designation	Period	National Register Eligibility
Site 1*	CA-LAN-1128/2131/H*	P/H	Not evaluated
	19-186925*	H	Not evaluated
Site 2	AE-TRTP-3	P	Not evaluated
	AE-ISO-1	P	Ineligible
	CA-LAN-2412*	P	Not evaluated
Site 3	AE-TRTP-1	P	Not evaluated
	AE-TRTP-2	P	Not evaluated
	CA-LAN-2365	P	Ineligible
Site 4	19-186921*	H	Not evaluated
	05015500033	H	Ineligible
Site 6	05015100205	P	Not evaluated
Site 7*	LA-09-L*	H	Ineligible
SCE#6B	050151000156*	H	Not evaluated
Site 8*	19-186860*+	H	Not evaluated
SCE#3B	19-186877*+	H	Not evaluated
Site 9* SCE#7	19-186917*+	H	Not evaluated
Site 10	19-187713*+	H	Ineligible
Site 11* SCE#8	10-186917*+	H	Not evaluated
SCE#1*	19-186921*+	H	Not evaluated
SCE#2*	19-186876*+	H	Not evaluated
	19-186877*+	H	Not evaluated
SCE#3*	19-186876*+	H	Not evaluated
	19-186877*+	H	Not evaluated
SCE#4*	19-186871*	H	Not evaluated
SCE#6*	19-186877*+	H	Not evaluated

Table 3.5-5. Cultural Resources within or Immediately Adjacent to Alternative 6 Helicopter Staging Areas

Staging Area	Sites Designation	Period	National Register Eligibility
Marshalling Yard*	CA-LAN-3295/H*	P	Not evaluated
	TRTP-RSS-1*	P	Not evaluated
	19-186877*+	H	Not evaluated
	CA-LAN-2412*	P	Not evaluated
Fly yard*	19-187713*+	H	Ineligible
Assembly and Fly Yard*	19-186860*+	H	Not evaluated
	19-186877*+	H	Not evaluated

* also included in Alternative 2
+ linear site intersects multiple staging areas

3.5.2.7 Alternative 7: 66-kV Subtransmission Alternative

Alternative 7 was developed in August 2008. In September 2008 Applied EarthWorks, Inc. performed a records search at the South Central Coastal Information Center of the California Historical Resources Information System, Department of Anthropology, California State University, Fullerton, to identify previously recorded resources along the Alternative 7 alignments in Los Angeles County. The records search revealed that 21 archaeological and historical sites have been identified within 0.25 miles of the 66-kV subtransmission routes, including three Native American sites, four sites associated with the original Mission San Gabriel (Mission Vieja) or early post-mission settlement, two late nineteenth to early twentieth century residential sites, and several other historical buildings and structures. Historic commercial and industrial sites within 0.25 miles include six sites associated with late nineteenth to early twentieth century agriculture, the historic Montebello Hills Oil Field, the filming location for *The Birth of a Nation*, the Briano Winery, and the Woodland Duck Farm. In addition, the Whittier Narrows 66-kV Underground and Overhead reroute elements of Alternative 7 traverse the Whittier Narrows Archaeological District, which contains the Mission Vieja site, several early adobes and homesteads, and other important prehistoric and historical sites. Roberts and Brock (1987) also note the high potential for the Narrows generally and areas along the San Gabriel River and Rio Hondo specifically to harbor buried archaeological deposits without surface indicators.

Applied EarthWorks, Inc. performed a field reconnaissance along the proposed underground and reroute alignments in Segments 7 and 8A to determine whether any of these resources would be affected by adoption of this alternative. Floods, fires, industrial and residential development, flood control projects, and other historical activities have all served to obscure the native ground surface in this area and limit the utility of archaeological surface surveys. As a result, the precise locations of several early historical sites have not been pinpointed, but both Roberts and Brock (1987) and Sundberg and Whitney-Desautels (1991) have concluded that the original Mission Vieja and Basye Adobe were located at the foot of the Montebello Hills overlooking Rio Hondo, which would place them within or close to the west-central portion of the Whittier Narrows 66-kV Overhead element of Alternative 7. As listed in Table 3.5-6, eight other cultural resources are located within 250 feet of this element, including the La Merced Adobe site and numerous other resources. Most of these have not been evaluated formally for significance. One site, CA-LAN-1311/H, contains Native American remains as well as historical materials from both Mission and post-Mission times (Roberts and Brock 1987). Additionally, the Montebello Hills Oil Field is within the APE of both Alternative 2 and Alternative 6, and thus has been included in Table 3.5-2 above.

Five historical structures erected in the mid-1950s as part of the Audubon Center of Southern California, now the Whittier Narrows Nature Center (WNNC), are found along the Whittier Narrows 66-kV Underground element of Alternative 7 (Table 3.5-6). Strauss et al. (2007) evaluated these resources and concluded they were not significant or eligible for the NRHP or CRHR.

The Duck Farm 66-kV Underground element of Alternative 7 passes through the Woodland Duck Farm Site. Established at this location in 1951, the site includes seven standing buildings as well as remnants of several former farm buildings and agricultural features. Strauss (2007) evaluated the standing structures and archaeological remains of the Woodland Duck Farm and concluded that the Louise Ward Residence at 12936 Valley Boulevard in La Puente qualified for the CRHR because of its significant architectural characteristics; the remaining buildings and archaeological remains did not meet NRHP or CRHR significance criteria. Strauss (2007) notes, however, that additional archaeological remains may be present at this site, and these could be significant if they retain integrity and clear historical associations.

Although none of these sites had been included in the original inventory of cultural resources for Alternative 2 (SCE's Proposed Project), the Montebello Hills Oil Field is within the Alternative 2 APE and therefore has been included in Table 3.5-2 above. The affected environment for Alternative 7 thus includes the 16 new sites listed in Table 3.5-6 as well as those described for Alternative 2 (SCE's proposed Project) above (see Table 3.5-2). No cultural resources are avoided as a result of the Alternative 7 re-routes or undergrounding.

Table 3.5-6. Additional Cultural Resources at Alternative 7

Temporary Designation	Trinomial	Primary	Period	Description	National Register Eligibility
Whittier Narrows 66-kV Overhead Element					
	CA-LAN-1311/H		Prehistoric/ Historic	Native American and Mission period remains	Eligible
Mission Vieja Complex			Historic	Site of original Mission San Gabriel; location uncertain	Eligible
Basye Adobe Site			Historic	Mid-19th to mid-20th century commercial/residential	Eligible
La Merced Adobe			Historic	Mid-19th century homestead; location uncertain	Not Evaluated
Estratta Farm			Historic	Late 19th/early 20th century agriculture	Not Evaluated
Nutt Farm			Historic	Late 19th/early 20th century agriculture	Not Evaluated
Briano Winery			Historic	Late 19th/early 20th century commerce	Not Evaluated
Battista Ciocca Dairy			Historic	Early 20th century agriculture	Not Evaluated
Battista Ciocca Groves and Structures			Historic	Early 20th century agriculture and residential	Not Evaluated
Farmer Home			Historic	Early 20th century residence	Not Evaluated
Whittier Narrows 66-kV Underground Element					
		P-19-188114	Historic	WNNC Police Station	Not eligible
		P-19-188115	Historic	WNNC Main Building	Not eligible
		P-19-188116	Historic	WNNC Restroom	Not eligible
		P-19-188117	Historic	WNNC Maintenance Garage and Shed	Not eligible
		P-19-188118	Historic	WNNC Picnic Shelter	Not eligible
Duck Farm 66-kV Underground Element					
Louise Ward Residence			Historic	Farm house	Eligible

3.5.3 Applicable Laws, Regulations, and Standards

3.5.3.1 Federal

National Historic Preservation Act (Section 106; 36 CFR Part 800) (NHPA)

The National Historic Preservation Act (NHPA) has become the foundation and framework for historic preservation in the United States. Briefly, the Act authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places (NRHP); it establishes an Advisory Council on Historic Preservation (ACHP) as an independent federal entity; it requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the ACHP a reasonable opportunity to comment on any undertaking that may affect properties listed, or eligible for listing, in the NRHP; and it makes the heads of all federal agencies responsible for the preservation of historic properties owned or controlled by their agencies.

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP. Undertakings include any federally funded, licensed, or permitted project.

To clarify the responsibilities of federal agencies with regard to Section 106 compliance, the ACHP has issued 36 CFR Part 800: Protection of Historic Properties, Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process. These regulations guide the implementation of Section 106. They identify the participants in the Section 106 compliance process; define key terms; and delineate the process of review and consultation. Revised regulations (36 CFR 800) were issued in 1999 to incorporate changes mandated by the 1992 Amendments of the NHPA. The regulations were further revised in August 2004.

Under the authority of Sections 101 and 110 of the NHPA, the National Park Service issued Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. These standards are not regulatory, and they do not set or interpret agency policy, but they are "intended to provide technical advice about archeological and historic preservation activities and methods" [48 FR 44716]. Accordingly, the document presents standards and guidelines for preservation planning, identification of historic properties, evaluation of historic properties in keeping with four explicit standards, registration of historic properties, historical documentation, architectural and engineering documentation, and archaeological documentation. Importantly, the Standards and Guidelines also present minimal professional qualifications standards for history, prehistoric and historical archaeology, architectural history, architecture, conservation, cultural anthropology, curation, folklore, historic preservation, land use/community planning, landscape architecture, and traditional cultural property expertise. Although these proposed professional qualifications standards have not been adopted in final form, they are nonetheless widely applied in both federal and state historic preservation programs.

Archeological and Historic Preservation Act of 1974 (AHPA)

If a project will affect historic properties that have archeological value, the AHPA may impose additional requirements on an agency. Notifying the Department of the Interior that you are doing something under AHPA does not constitute compliance with Section 106.

Archeological Resources Protection Act of 1979 (ARPA)

If federal or Indian lands are involved, ARPA may impose additional requirements on an agency. ARPA prohibits unauthorized excavation on federal and Indian lands; establishes standards for permissible excavation; prescribes civil and criminal penalties for illicit artifact trafficking and other violations of the Act; requires agencies to identify archeological sites; and encourages cooperation between federal agencies and private individuals.

American Indian Religious Freedom Act of 1978 (AIRFA)

AIRFA affirms the right of Native Americans to have access to their sacred places. If a place of religious importance to American Indians may be affected by an undertaking, AIRFA promotes consultation with Indian religious practitioners, which may be coordinated with Section 106 consultation. Amendments to Section 101 of NHPA in 1992 strengthened the interface between AIRFA and NHPA by clarifying that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined to be eligible for inclusion on the National Register. In carrying out its responsibilities under Section 106, a federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to any such properties.

Native American Graves Protection and Repatriation Act of 1990 (NAGPRA)

For activities on federal lands, NAGPRA requires consultation with "appropriate" Indian tribes (including Alaska Native villages) or Native Hawaiian organizations prior to the intentional excavation, or removal after inadvertent discovery, of several kinds of cultural items, including human remains and objects of cultural patrimony.

In brief, NAGPRA requires agencies to: Inventory Native American cultural items; repatriate Native American cultural items; and consult with Native American groups about permits to excavate on federal or tribal lands.

For activities on Native American or Native Hawaiian lands, which are defined in the statute, NAGPRA requires the consent of the Indian tribe or Native Hawaiian organization prior to the removal of cultural items. The law also provides for the repatriation of such items from federal agencies and federally assisted museums and other repositories. NAGPRA defines Native American cultural items as human remains; associated funerary objects; unassociated funerary objects; objects of sacred value and cultural patrimony.

In 1992, amendments to NHPA strengthened NAGPRA by encouraging "protection of Native American cultural items . . . and of properties of religious or cultural importance to Indian tribes, Native Hawaiians, or other Native American groups" [Section 112(b)(3)] and by stipulating that a federal ". . . agency's procedures for compliance with Section 106 . . . provide for the disposition of Native American cultural items from federal or tribal land in a manner consistent with Section 3(c) of the Native American Graves Protection and Repatriation Act . . . ."

Executive Order 11593 (1971), Protection and Enhancement of the Cultural Environment

The federal government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation. This executive order (EO) addresses the NRHP and provides guidance to those involved with federal properties that should be inventoried and nominated for listing on the NRHP.

Executive Order 13007 (1996), Protection and Preservation of Native American Sacred Sites

This EO is meant to improve the management of these sites. The EO strives to protect and preserve Indian religious practices. Section 1 of the EO states that "In managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites."

Executive Order 13175 (2000), Consultation and Coordination with Indian Tribal Governments

This EO was issued to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications; to strengthen the United States government-to-government relationships with Indian tribes; and to reduce the imposition of unfunded mandates upon Indian tribes. "Indian tribe" means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a. Relevant federal agencies are directed to establish policies and procedures for implementing consultation with federally recognized tribes on a government-to-government basis.

Executive Order 13287 (2003), Preserve America

This EO establishes, among other things, that it is the policy of the federal government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of historic properties owned by the federal government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties.

3.5.3.2 State

Health and Safety Codes

The disposition of human remains is governed by Section 7050.5 of the California HSC and Sections 5097.94 and 5097.98 of the PRC, and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

3.5.3.3 Local

- **Kern County (General Plan, Land Use/Conservation/Open Space Element)** promotes the preservation of cultural and historic resources (Kern County 2004).
- **Los Angeles County (General Plan, Land-Use Element, LU-A21)** provides for the preservation of its cultural resources in the Land-Use Element of the General Plan. This section describes new developments' responsibilities to the preservation of cultural heritage resources and the mitigation of damages that may incur (Los Angeles County 1993). Los Angeles County also has Local Plans tailored to fit specific un-incorporated areas of the county, and some of these also address historic preservation. The Antelope Valley General Plan (V17) addresses cultural resource preservation in its Policy Statements Element under Natural Resources. It

provides for the protection of historic and archaeological resources and the mitigation of negative impacts by new developments (Los Angeles County 1986). The Antelope Valley General Plan includes the un-incorporated jurisdictions of Acton and Antelope Acres (Los Angeles County 1986).

- **San Bernardino County (General Plan, Conservation Element; County of San Bernardino Development Code, Chapter 82.12)** promotes the preservation of its cultural resources by providing for the preservation of cultural resources and mitigation of negative impacts from new developments. Additional regulations create a Cultural Resources Preservation Overlay district within which measures are laid out in detail to meet the goals of the Conservation Element (San Bernardino County 2007a; San Bernardino County 2007b).
- **The City of Baldwin Park (Municipal Code, Chapter 153, Baldwin Park Historic Resources Code)** designates the Planning Commission of the City of Baldwin Park as the Historic Resource Advisory Committee. This committee is responsible for upholding the Baldwin Park Historic Resource Code, including overseeing the preservation of cultural resources, the mitigation of negative impacts by new development, the maintenance of a Local Official Register of Historic Resources, and the creation of historic districts (City of Baldwin Park 2006).
- **The City of Chino (General Plan, Open Space Conservation Ordinance)** does not directly address cultural resources in its General Plan or Municipal Code; however, an Open Space Conservation Ordinance can be applied to historic resources (Chuck Coe, personal communication 2007).
- **The City of Duarte (Historic Preservation Element, General Plan)** outlines the city's goals for the preservation of cultural resources and the development of a Historic Resources Ordinance for the city (City of Duarte 2006).
- **The City of Industry (Historic Preservation Element, General Plan)** addresses cultural resources (Troy Helling personal communication).
- **The City of La Canada Flintridge** has no ordinances or General Plan Elements that directly address cultural resources; however, an Open Space Zone in its Municipal Code can be used to preserve historic areas (City of La Canada Flintridge).
- **The City of Lancaster (Plan for the Living Environment-Historical, Archaeological, and Cultural Resources)** addresses cultural resources in its 2020 General Plan. This plan outlines the policies for new development and mitigation of negative impacts on cultural resources (City of Lancaster 1997).
- **The City of Montebello (General Plan, Conservation Element)** recognizes the importance of historic preservation to Montebello and supports additional research into the city's history (City of Montebello 1975).
- **The City of Monterey Park (Municipal Code, Chapter 2.62, Historical-Heritage Commission; General Plan, Resources Element)** outlines the City of Monterey Park's preservation guidelines and the city's goal to preserve local resources (City of Monterey Park 2006; City of Monterey Park 2007).
- **The City of Ontario (Development Code, Article 26, Historic Preservation Ordinance; Local Historic Listing for Landmarks and Districts)** addresses the city's Historic Preservation Program and maintains a local list of historic landmarks and districts (City of Ontario 2002).
- **The City of Pasadena (Municipal Code, Title 2, Chapter 2.75; Zoning Code, Chapter 17.62)** outlines the organization and administration of the city's Historic Preservation Commission, which is responsible for designating historic resources as outlined in the Zoning Code (City of Pasadena 2005).
- **The City of San Gabriel (General Plan, Chapter 11)** lists known historic resources, outlines its Historic Preservation Ordinances, and suggests improvements to its existing preservation efforts. Title XV of the Municipal Code describes the procedures for designated historic buildings and enforces local, State and federal law (City of San Gabriel 2004; City of San Gabriel 1996).
- **The South El Monte Municipal Code, Chapter 17.78 (Historic Preservation)** addresses the creation of a Cultural Resources Management Commission with powers to designate historic buildings and enforce local, State and federal law (City of South El Monte 1995).
- **The Temple City General Plan, Resource Management Element** states that the city has no known cultural resources and has not been surveyed for cultural resources (Joe Lambert, personal communication 2007).

- **The City of Whittier (Municipal Code, Chapter 2.50; General Plan)** forms a Historic Resources Commission which oversees the city's policies towards historic preservation as laid out in its General Plan (City of Whittier 2006).

3.5.4 Impact Analysis Approach

3.5.4.1 Criteria for Determining Impact Significance

Cultural resources are places or objects that are important for historical, scientific, and religious reasons and are of concern to cultures, communities, groups, or individuals. These resources may include buildings and architectural remains, archaeological sites and other artifacts that provide evidence of past human activity, human remains, or traditional cultural properties.

In the context of a federally permitted undertaking, such as the TRTP, the responsible agency official must take into account the effects of the undertaking on historic properties (i.e., properties eligible for the NRHP). To be eligible for the NRHP, a resource must meet one or more of the criteria of significance (36 CFR 60.4) and retain integrity; such resources must be managed in compliance with the Advisory Council's regulations implementing Section 106 of the NHPA, found at 36 CFR 800.

CEQA, the State CEQA Guidelines, and the California Public Resources Code also contain provisions for the protection and preservation of significant cultural resources (i.e., "historical resources" and "unique archaeological resources"). State CEQA Guidelines §15064.5 provides criteria for assessing the significance of cultural resources parallel to the federal criteria. The State CEQA Guidelines also require consideration of unique archaeological sites (§15064.5) (see also Public Resources Code Section 21083.2[h]). The ANF, U.S. Army Corps of Engineers (USACE), and CPUC have agreed that the eligibility criteria for listing a property in the NRHP (at 36 CFR Part 60.4) shall be the criteria used in determining the historical significance, and thus the NRHP or CRHR eligibility, of any cultural resources in the TRTP APE. Cultural resources in the APE that will be avoided and preserved in place need not be evaluated for NRHP eligibility provided that the ANF, USACE, and CPUC agree.

Resources included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified as significant in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code), also are considered "historical resources" for the purposes of CEQA. A resource must also retain the integrity of its physical identity that existed during its period of significance. Integrity is evaluated with regard to retention of location, design, setting, materials, workmanship, feeling, and association. Finally, under both federal and State law, Native American human remains and associated grave goods are granted special significance.

To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the proposed Project and alternatives. Appropriate criteria have been identified and utilized to make these impact significance conclusions. The following significance criteria for cultural resources impacts were derived from previous environmental impact assessments and from the State CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX). Impacts of the proposed Project or alternatives would be considered significant and would require mitigation if:

- Criterion CR1: The Project would cause an adverse effect on a historic property or Traditional Cultural Property as defined by federal guidelines (as noted above, the ANF, USACE, and CPUC have agreed that the federal guidelines shall apply to all aspects of the Project and shall supersede State criteria for historical significance).
- Criterion CR2: The Project would cause a substantial adverse change in the characteristics of a cultural resource included in a local register of historical resources.

- Criterion CR3: The Project could uncover, expose, and/or damage Native American human remains.

Significance conclusions for individual impacts are not required for compliance with NEPA. Therefore, conclusions presented in the following analysis regarding the significance of identified impacts are provided for the purposes of CEQA and NHPA compliance only.

3.5.4.2 Applicant-Proposed Measures (APMs)

APMs were identified by SCE in the PEA. Table 3.5-7 presents the APMs that are relevant to the issue area of cultural resources. APMs are a commitment by the Applicant (SCE) and are considered part of the proposed Project. Therefore, the following discussions of impact analysis assume that all APMs will be implemented as defined in the table. Additional mitigation measures are recommended in this section if it is determined that APMs do not fully mitigate the impacts for which they are presented.

Table 3.5-7. Applicant-Proposed Measures – Cultural Resources

APM CR-1	Conduct an intensive archaeological inventory of all areas that may be disturbed during construction and operation of the Project.
APM CR-2	Avoid and minimize impacts to significant or potentially significant cultural resources wherever feasible.
APM CR-2a	Project Final Design shall avoid direct impacts to significant or potentially significant cultural resources.
APM CR-2b	Conduct a pre-construction Worker Education Program.
APM CR-2c	Establish and maintain a protective buffer zone around each recorded archaeological site within or immediately adjacent to the R-O-W.
APM CR-3	Evaluate the significance of all cultural resources that cannot be avoided.
APM CR-3a	Evaluate the significance of archaeological resources potentially eligible for CRHR or NRHP listing.
APM CR-3b	Evaluate the significance of buildings and structures potentially eligible for CRHR or NRHP listing.
APM CR-3c	Consult Native Americans regarding traditional cultural values that may be associated with archaeological resources.
APM CR-4	Minimize unavoidable impacts to significant cultural resources, including Unique Archaeological Sites, Historical Resources, and Historic Properties.
APM CR-4a	Implement measures to minimize impacts to significant archaeological sites.
APM CR-4b	Implement measures to minimize impacts to significant buildings and structures.
APM CR-5	Prepare and Implement a Construction Monitoring and Unanticipated Cultural Resources Discovery Plan.
APM CR-6	Inadvertent Discovery of Human Remains.
APM CR-7	Native American Participation.

3.5.4.3 Impact Assessment Methodology

For cultural resources, impact assessment is based on a comparison of known resource locations with the placement of ground disturbing Project activities that have the potential to remove, relocate, damage, or destroy the physical evidence of past cultural activities. If such ground disturbance overlaps recorded site locations, then a direct impact may occur. Historical buildings and structures may be directly impacted if the nearby setting and context is modified substantially, even if the building or structure itself is not physically affected. Indirect impacts may occur if activities occur near, but not directly on, known cultural resources.

For the TRTP, Applied EarthWorks, Inc. performed a GIS-based impact analysis using data on the locations of known sites and Project elements (ArcView shape files) provided by SCE, their subcontractors, and Aspen Environmental Group, augmented by field survey data collected by Æ. The accuracy of the analysis is dependent on the accuracy of the original GIS data. In most cases Æ did not verify site locations recorded in the field by SCE or its subcontractors.

3.5.5 Alternative 1: No Project/Action

No Project-related cultural resource impacts would result from Alternative 1 (no Project/Action) since the proposed facilities would not be built. Under Alternative 1, likely resource impacts within the Project area would be confined to natural erosion, disturbances associated with the routine maintenance of existing transmission lines and service roads, as well as periodic unauthorized surface artifact collecting or more severe site vandalism. However, additional cultural resource impacts may occur outside of the existing Project area as a result of efforts by others to interconnect and integrate new wind generation in the TWRA. Such additional impacts would be comparable to those anticipated for the proposed Project.

In the absence of the proposed Project, it is assumed that some currently unknown plan would be developed to provide the transmission upgrades necessary to interconnect renewable generation projects in the Tehachapi area and to address the existing transmission problems south of Lugo Substation. Similarly, other yet unspecified transmission upgrades presumably would be proposed in the future to provide the needed capacity and reliability to serve growing electrical load in the Antelope Valley. To interconnect wind projects in the Tehachapi area, it is possible that other electrical utilities with transmission facilities in the area, such as LADWP, might purchase some of the power from Tehachapi wind developers and integrate it into their system. Another possibility is for the development of a private transmission line, similar to the existing Sagebrush line that could connect wind projects to the electrical grid. This would involve combinations of upgrading existing transmission infrastructure or building new transmission facilities along different alignments than was assumed for the proposed Project and alternatives.

Construction methods, resulting impacts to cultural resources, and regulatory requirements associated with transmission projects that might occur without the proposed Project would be similar to those identified for the proposed Project. It is also assumed that the number of projects would most likely increase from a single project to several smaller projects that would be constructed in the same general area as the proposed Project with potentially overlapping construction schedules, in order to meet the RPS goals. The impacts of several smaller projects with overlapping timeframes would likely be greater than impacts associated with the proposed Project because of the probable need for increased transmission line miles and their associated roads, staging areas, and other ancillary facilities.

3.5.6 Alternative 2: SCE's Proposed Project

The APE for Alternative 2 includes 135 cultural resources. Of these, 24 are isolated artifacts or other resources that have been evaluated and judged ineligible for the National Register. These 24 sites are not considered historic properties, and thus any effects on them are not considered significant impacts. No further management consideration is warranted for these sites.

The remaining 111 resources in the APE of Alternative 2 either have been evaluated and judged significant historic properties, or have not been evaluated. Of these sites, 55 sites may be affected by tower replacement, access roads, or other elements of the proposed Project. These potentially affected sites are listed in Table 3.5-8, which also shows their National Register status (eligible or unevaluated), project actions that may affect them (e.g., tower construction, use of existing road), and potential impact criteria (CR1 through CR3). Most of these sites are located along potential Project access roads; 14 are at known tower locations, ten are at wire setup sites, and three are at substations. Only one site, CA-LAN-3795, located along an access road, has been evaluated and found eligible for the NRHP; the remaining sites are unevaluated.

3.5.6.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Impact C-1: Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places (NRHP).

Direct Effects

As shown on Table 3.5-8, properties that are eligible for the NRHP (i.e., "historic properties" as defined at 36 CFR 800.16(l)), as well as properties that may be eligible but have not been evaluated, occur within and near several tower sites and at other locations within or adjacent to the APE. Direct impacts are any ground-disturbing activities, including tower site preparation and construction, grading of new access or spur roads, reconductoring, tower removal, transportation, storage, and maintenance of construction equipment and supplies, staging area and material yard preparation and use, and use or improvement of existing access roads, that have the potential to disturb known cultural resources. Impacts could also result from inadvertent trespass out of designated work areas or roads.

Adverse effects to individual sites cannot be precisely identified until the final tower locations are defined, specific tower sites are determined, detailed engineering plans for all Project roads and facilities are completed, the precise relationship of these Project elements to known sites is determined, and final NRHP eligibility of cultural resources has been evaluated; thus planning for these activities must account not only for sites determined eligible for the NRHP, but also for unevaluated sites.

If direct impacts to these sites cannot be avoided, the CPUC, Forest Service, and the USACE, in consultation with the California SHPO, would make a final determination of adverse effect. Since this is a complex undertaking that will be built in phases, and since the CPUC, a non-federal agency, has decision-making responsibilities, the Forest Service, USACE, CPUC, and SCE will execute a Programmatic Agreement (PA) with the SHPO that will guide the resolution of adverse effects to historic properties.

Table 3.5-8. Alternative 2 (SCE's Proposed Project) Potentially Affected Cultural Resources

Segment	Site Designation	Forest Service Designation	Period	National Register Eligibility	Impact Criterion			Potential Impact				
					CR1	CR2	CR3	Substation	Access Road	Wire Setup Site	Tower Site	Helipad/ Staging Area
4	PL-SCE-Tehachapi-02H		H	Not Evaluated	x				x			
	PL-SCE-Tehachapi-03/H		P/H	Not Evaluated	x				x			
	PL-SCE-Tehachapi-04		P	Not Evaluated	X				x		x	
	PL-SCE-Tehachapi-07		P	Not Evaluated	x				x			
	PL-SCE-Tehachapi-08		P	Not Evaluated	x				x		x	
	PL-SCE-Tehachapi-30H		H	Not Evaluated	x				x			
	PL-SCE-Tehachapi-54H		H	Not Evaluated	x				x			
	CA-KER-303		P	Not Evaluated	x		x		x			
	CA-KER-733		P	Not Evaluated	x				x			
	CA-KER-1783		P	Not Evaluated	x				x			
	CA-LAN-3795		P	Eligible	x				x			
5	PL-SCE-Tehachapi-10H		H	Not Evaluated	x				x			
	PL-SCE-Tehachapi-13		P	Not Evaluated	x				x			
	PL-SCE-Tehachapi-14		P	Not Evaluated	x				x			
	P-19-003385		H	Not Evaluated	x				x		x	
	P-19-003477		H	Not Evaluated	x			x				
	CA-LAN -806		P	Not Evaluated	x				x		x	
6		05015400076	H	Not Evaluated	x				x			
		05015200136	H	Not Evaluated	x				x			
		05015100148	H	Not Evaluated	x						x	
		05015100156	H	Not Evaluated	x							x
	P-19-003025	05015500149	P	Not Evaluated	x				x	x	x	
	P-19-003136	05015100147	P	Not Evaluated	x				x	x		
	P-19-003606	05015400226	H	Not Evaluated	x						x	

Table 3.5-8. Alternative 2 (SCE's Proposed Project) Potentially Affected Cultural Resources

Segment	Site Designation	Forest Service Designation	Period	National Register Eligibility	Impact Criterion			Potential Impact				
					CR1	CR2	CR3	Substation	Access Road	Wire Setup Site	Tower Site	Helipad/ Staging Area
6 (continued)	P-19-120072	05015500184	P/H	Not Evaluated	x				x			
	P-19-120074	05015100098	H	Not Evaluated	x				x	x	x	
	P-19-186917	05015200102	H	Not Evaluated	x				x		x	x
	P-19-186921	05015100102	H	Not Evaluated	x						x	
	P-19-186877		H	Not Evaluated	x							x
	P-19-186925	05015500194	H	Not Evaluated	x				x		x	
	CA-LAN-1128/H CA-LAN-2131	05015500006 05015500120	P/H	Not Evaluated	x		x		x	x	x	
	CA-LAN-2363	05015500076	P	Not Evaluated	x				x			
	CA-LAN-2411	05015500082	P	Not Evaluated	x				x			
	CA-LAN-2249	05015100020	P	Not Evaluated	x				x			
	P-19-003004	05015100095	P	Not Evaluated	x				x			
	P-19-003008	05015500171	P	Not Evaluated	x				x			
7	P-19-186917	05015200102	H	Not Evaluated	x				x	x	x	
	Montebello Hills Oil Field		H	Not Evaluated	x				x		x	
8	P-36-012621		H	Not Evaluated	x				x			
9	P-19-003477		H	Not Evaluated	x			x				
	P-19-186870	05015100143	H	Not Evaluated	x			x				
10	PL-SCE-Tehachapi-25		P	Not Evaluated	x					x		
	PL-SCE-Tehachapi-34H		H	Not Evaluated	x				x			
11		05015500194	H	Not Evaluated	x					x		
	PL-SCE-Tehachapi-35		P	Not Evaluated	x				x			
	TRTP-3		P	Not Evaluated	x							x
	TRTP-RSS-1		P	Not Evaluated	x							x
	P-19-002998	05015500166	P	Not Evaluated	x				x			
	P-19-186860	05015100138	H	Not Evaluated	x							x
	P-19-186871	05015100142	H	Not Evaluated	x							x
	P-19-186877	05015500187	H	Not Evaluated	x				x	x		x
	P-19-186876	05015500186	H	Not Evaluated	x							x
	P-19-186921	05015100102	H	Not Evaluated	x					x		x

Table 3.5-8. Alternative 2 (SCE's Proposed Project) Potentially Affected Cultural Resources

Segment	Site Designation	Forest Service Designation	Period	National Register Eligibility	Impact Criterion			Potential Impact				
					CR1	CR2	CR3	Substation	Access Road	Wire Setup Site	Tower Site	Helipad/ Staging Area
11 (continued)	P-19-186923	05015100103	H	Not Evaluated	x					x		
	CA-LAN-2350	0501550069	P	Not Evaluated	x				x			
	CA-LAN-3295/H	05015500193	P/H	Not Evaluated	x							x

Indirect Effects

Indirect impacts may occur to properties eligible for the NRHP within and in the vicinity of the Project APE during operation and long-term presence of the proposed Project. Increased erosion could result as an indirect Project impact. This impact is potentially significant, but can be mitigated to a level that is less than significant by implementing site protection measures and monitoring procedures, as detailed in Mitigation Measure C-1i (Protect and monitor NRHP-eligible properties), described below.

Mitigation Measures for Impact C-1

C-1a **Development and Execution of a Programmatic Agreement (PA).** Since the Project's effects on historic properties cannot be fully determined before the Project has been approved, and the CPUC is a non-federal agency with decision-making responsibilities, the Forest Service, USACE, CPUC, and SCE, along with the Advisory Council on Historic Preservation if they choose to participate, will develop and execute a PA for the TRTP with the SHPO in accordance with 36 CFR 800.14(b)(ii) and (iii). The PA will guide the resolution of adverse effects to historic properties. Consultation to develop the PA will follow 36 CFR 800.6. The PA will contain minimum standards and guidelines for identifying historic properties and evaluating their significance. It will include requirements for development and implementation of Historic Properties Treatment Plans, Construction Phase Management Plans, archaeological monitoring, reporting, professional qualifications, artifact curation, Native American consultation, treatment of human remains, discovery of unknown cultural resources, cost, dispute resolution, amendment, termination, confidentiality, annual meetings, and duration.

C-1b **Inventory cultural resources in the APE.** APM CR-1 calls for intensive archaeological inventories of areas that may be disturbed by construction. As described in Section 3.5.2, cultural resource inventories have been completed for most of the APE. However, some elements of the Project remain undefined and additional inventories may be necessary. Prior to construction and all other surface disturbing activities, SCE shall submit cultural resources inventory reports to the Forest Service, USACE, and CPUC for any portions of the APE which have not been inventoried previously, including but not limited to existing and newly proposed access and spur roads, construction turn-arounds, guard pole locations, marshalling yards, wire setup areas, helicopter staging areas, helicopter landing zones, and any other projected areas of potential ground disturbance outside of the previously surveyed areas. The nature and extent of additional inventory shall be determined by the Forest Service, USACE, and CPUC in consultation with the State Historic Preservation Officer (SHPO) and shall be based upon Project engineering specifications. Results of these inventories shall also be filed with all affected local governments and the appropriate Information Centers of the California Historical Resources Information System. Site-specific field surveys also shall be undertaken at all projected areas of impact within the previously surveyed corridor that coincide with previously recorded resource locations to further refine the assessment of potential Project effects. The selected tower locations and other direct impact areas shall be staked prior to the cultural resource field surveys.

C-1c **Avoid and protect resources.** APMs CR-2, CR-2a, and CR-2c call for avoidance of impacts through Project redesign or use of protective buffer zones. The Forest Service, USACE, and CPUC may require the relocation of transmission lines, ancillary facilities, or temporary facilities or work areas, if any, where relocation would avoid or reduce damage to cultural resource values. Where operationally feasible, NRHP-eligible resources shall be protected from direct Project impacts by Project redesign and inclusion of sites in exclusion areas.

All cultural resources that will not be impacted directly but are within 50 feet of direct impact areas shall be designated as Environmentally Sensitive Areas (ESAs). Protective fencing or other markers, at the Forest Service, USACE, or CPUC's discretion, shall be erected and maintained to protect ESAs from inadvertent trespass for the duration of construction in the vicinity. Construction personnel and equipment shall be instructed on how to avoid ESAs. ESAs shall not be identified specifically as cultural resources. A monitoring program shall be developed as part of the Historic Properties Treatment Plan (see Mitigation Measure C-1e, Develop and implement a Historic Properties Treatment Plan) and implemented by the SCE to ensure the effectiveness of ESAs.

C-1d **Evaluate the significance of cultural resources that cannot be avoided.** APMs CR-3, CR-3a, and CR-3b call for formal significance evaluation of archaeological sites and historical buildings and structures that cannot be avoided during construction. APM CR-3c calls for consultation with Native Americans regarding traditional cultural values that may be associated with archaeological sites. Where the Forest Service, USACE, and/or CPUC decide that cultural resources cannot be protected from direct impacts by Project redesign or avoidance, SCE shall undertake additional studies to evaluate the resources' NRHP eligibility and to recommend further treatment, if necessary. The nature and extent of this evaluation shall be determined by the Forest Service in consultation with the USACE, CPUC, and the SHPO and shall be based upon final Project engineering specifications. Consultation shall include direct contact with Native American tribal representatives to seek their views on resource significance. Significance evaluations will be based on surface remains, subsurface testing, archival and ethnographic resources, and in the framework of the historic context and research questions important to the general Project area. Results of those evaluation studies and recommendations for mitigation of Project effects shall be incorporated into a Historic Properties Treatment Plan consistent with Mitigation Measure C-1e (Develop and implement a Historic Properties Treatment Plan).

C-1e **Develop and implement Historic Properties Treatment Plan.** Upon Forest Service, USACE, and CPUC approval of the inventory report and the NRHP eligibility evaluations, consistent with Mitigation Measures C-1b (Inventory cultural resources in the Final APE), C-1c (Avoid and protect resources), and C-1d (Evaluate the significance of cultural resources that cannot be avoided), SCE shall prepare and submit for approval a Historic Properties Treatment Plan (HPTP) for NRHP -eligible cultural resources to mitigate or avoid identified impacts. Treatment of cultural resources shall follow the procedures established by the Advisory Council on Historic Preservation for compliance with Section 106 of the National Historic Preservation Act and the Secretary of Interiors Standards and Guidelines for the Treatment of Historic Properties. Mitigation alternatives may include, but are not limited to, avoidance, recordation, additional analysis of existing collections, and data recovery excavation. The HPTP shall be submitted to the Forest Service, USACE, and CPUC for review and approval.

As part of the HPTP, SCE shall prepare a research design and a scope of work for data recovery or additional treatment of significant sites that cannot be avoided. Data recovery on most resources would consist of sample excavation and/or surface artifact collection, and site documentation. A possible exception would be a site where human remains or sacred features are discovered that cannot be avoided.

The HPTP shall define and map all known significant properties in or within 50 feet of all areas affected by the Project, and shall identify the cultural values that contribute to their eligibility for the NRHP. A cultural resources protection plan shall be included that details how eligible properties will be avoided and protected during construction. Measures shall include, at a minimum, designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and effectiveness reporting. The plan shall detail what measures

will be used; how, when, and where they will be implemented; and how protective measures and enforcement will be coordinated with construction personnel.

The HPTP shall also define any additional areas that are considered to be of high-sensitivity for discovery of buried NRHP-eligible cultural resources, including burials, cremations, or sacred features. The HPTP shall detail provisions for monitoring construction in these high-sensitivity areas. It shall also detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native Americans, assessing NRHP-eligibility in the event that unknown cultural resources are discovered, and the timelines for assessing NRHP-eligibility, formulating a mitigation plan, and implementing treatment. Treatment plans for unanticipated discoveries shall be approved by the Forest Service, USACE, and CPUC, appropriate local governments, appropriate Native Americans, and the SHPO prior to implementation.

The HPTP shall include provisions for analysis of data in a regional context, reporting of results within one year of completion of field studies, and curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by Forest Service, USACE, and CPUC, and dissemination of reports to local and State repositories, libraries, and interested professionals. The Forest Service will retain ownership of artifacts collected from Forest Service managed lands. SCE shall attempt to gain permission for artifacts from privately held land to be curated with the other Project collections. The HPTP shall specify that archaeologists and other discipline specialists conducting the studies meet the Secretary of the Interior's Professional Qualifications Standards (per 36 CFR 61).

C-1f **Conduct data recovery excavation or other actions to reduce adverse effects.** If NRHP eligible resources, as determined by the CPUC, Forest Service, USACE, and SHPO, cannot be protected from direct impacts of the Project, data-recovery investigations shall be conducted by SCE to reduce adverse effects to the characteristics of each property that contribute to its NRHP eligibility. For archaeological sites eligible under Criterion d, significant data would be recovered through excavation and analysis. For properties eligible under Criteria a, b, or c, data recovery may include historical documentation, photography, collection of oral histories, architectural or engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation. Data gathered during the evaluation phase and the research design element of the Historic Properties Treatment Plan (HPTP) shall guide plans and data thresholds for data recovery; treatment will be based on the resource's research potential beyond that realized during resource recordation and evaluation studies. If data recovery is necessary, sampling for data-recovery excavations will follow standard statistical sampling methods, but sampling will be confined, as much as possible, to the direct impact area. Data-recovery methods, sample sizes, and procedures shall be detailed in the HPTP consistent with Mitigation Measure C-1e (Develop and implement Historic Properties Treatment Plan) and implemented by SCE only after approval by the Forest Service, USACE, and CPUC. Following any field investigations required for data recovery, SCE shall document the field studies and findings, including an assessment of whether adequate data were recovered to reduce adverse Project effects, in a brief field closure report. The field closure report shall be submitted to the Forest Service, USACE, and CPUC for their review and approval, as well as to the appropriate State repositories and local governments. Construction work within 100 feet of cultural resources that require data-recovery fieldwork shall not begin until authorized by the Forest Service, USACE, or CPUC, as appropriate.

C-1g **Conduct cultural resources monitoring.** APM CR-5 calls for preparation of a construction monitoring and inadvertent discovery plan. A professional archaeologist shall monitor subsurface construction disturbance at all locations identified in the HPTP (see Mitigation Measure C-1e, Develop and implement a Historic Properties Treatment Plan). Full-time

monitoring shall occur when ground disturbance takes place at all archaeological High-Sensitivity Areas described above and at all cultural resource Environmentally Sensitive Areas (ESAs). These locations and their protection boundaries shall be defined and mapped in the HPTP. Intermittent monitoring may occur in areas of moderate archaeological sensitivity at the discretion of the Forest Service, USACE, and/or CPUC. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historical and prehistoric resources that could be encountered within the Project APE, and under direct supervision of a principal archaeologist. The qualifications of the principal archaeologist and archaeological monitors shall be approved by the Forest Service, USACE, and CPUC. A Native American monitor may be required at culturally sensitive locations specified by the Forest Service, USACE, or CPUC following government-to-government consultation with Native American tribes. The monitoring plan in the HPTP shall indicate the locations where Native American monitors will be required and shall specify the tribal affiliation of the required Native American monitor for each location. SCE shall retain and schedule any required Native American monitors.

Compliance with and effectiveness of the cultural resources monitoring plan shall be documented by SCE in a monthly report to be submitted to the Forest Service, USACE, and CPUC, for the duration of Project construction. In the event that cultural resources are not properly protected by ESAs, all Project work in the immediate vicinity shall be diverted by the archaeological monitor until authorization to resume work has been granted by the Forest Service, USACE, and CPUC. SCE shall notify the Forest Service of any damage to cultural resource ESAs. SCE shall consult with the Forest Service, USACE, and CPUC to mitigate damages and to increase effectiveness of ESAs. At the discretion of the Forest Service, USACE, and CPUC, such mitigation may include, but not be limited to modification of protective measures, refinement of monitoring protocols, data-recovery investigations, or payment of compensatory damages in the form of non-destructive cultural resources studies or protection.

C-1h **Train construction personnel to identify cultural resources.** APM CR-2b calls for a pre-construction worker education program. All construction personnel shall be trained regarding the recognition of possible buried cultural remains and protection of all cultural resources, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. SCE 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. Training shall inform all construction personnel that Environmentally Sensitive Areas (ESAs) must be avoided and that travel and construction activity must be confined to designated roads and areas. All personnel shall be instructed that unauthorized collection or disturbance of artifacts or other cultural materials on or off the ROW by SCE, their representatives, or employees will not be allowed. Violators will be subject to prosecution under the appropriate State and federal laws and violations will be grounds for removal from the Project. Unauthorized resource collection or disturbance may constitute grounds for the issuance of a stop work order. The following issues shall be addressed in training or in preparation for construction:

- All construction contracts shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits, their responsibility to avoid and protect all cultural resources, and the penalties for collection, vandalism, or inadvertent destruction of cultural resources.
- SCE shall provide a background briefing for supervisory construction personnel describing the potential for exposing cultural resources, the location of any potential ESA, and procedures and notifications required in the event of discoveries by Project personnel or archaeological monitors. Supervisors shall also be briefed on the consequences of intentional or inadvertent damage to cultural

resources. Supervisory personnel shall enforce restrictions on collection or disturbance of artifacts or other cultural resources.

- Upon discovery of potential buried cultural materials by archaeologists or construction personnel, or damage to an ESA, work in the immediate area of the find shall be diverted and SCE's archaeologist notified. Once the find has been inspected and a preliminary assessment made, SCE's archaeologist will consult with the Forest Service, USACE, or CPUC, as appropriate, to make the necessary plans for evaluation and treatment of the find(s) or mitigation of adverse effects to ESAs.

SCE shall provide to the CPUC, USACE, and Forest Service a list of construction personnel who have completed the cultural resources identification training prior to start of construction, and this list shall be updated by SCE as required when new personnel start work. No construction worker may work in the field for more than 5 days without participating in the cultural resources identification training.

C-1i **Protect and monitor NRHP-eligible properties.** SCE shall design and implement a long-term plan to protect NRHP-eligible sites from direct impacts of Project operation and maintenance and from indirect impacts, such as erosion, that result from the presence of the Project. The plan shall be developed in consultation with the Forest Service, USACE, and CPUC to design measures that will be effective against Project maintenance impacts and Project-related vehicular impacts. The plan shall also include protective measures for significant properties within the TRTP corridor that will experience operational and access impacts as a result of the proposed Project. The proposed measures may include restrictive fencing or gates, permanent access and spur road closures, signage, stabilization of erosion, site capping, site patrols, interpretive/educational programs, and/or other measures that will be effective for protecting cultural resources. The plan shall be property specific and shall include provisions for monitoring and reporting its effectiveness and for addressing inadequacies or failures that result in damage to significant properties. The plan shall be submitted to the Forest Service, USACE, and CPUC for review and approval at least 30 days prior to Project operation.

Monitoring of selected sites shall be conducted annually by a professional archaeologist for a period of five years following completion of Project construction. Monitoring shall include inspection of all site loci and defined surface features, documented by photographs from fixed photo-monitoring stations and written observations. A monitoring report shall be submitted to the Forest Service, USACE, and CPUC within one month following the annual resource monitoring. The report shall indicate any properties that have been impacted by erosion or vehicle or maintenance impacts. For properties that have been impacted, SCE shall provide recommendations for mitigating impacts and for improving protective measures. After the fifth year of resource monitoring, the Forest Service, USACE, or CPUC, as appropriate, will evaluate the effectiveness of the protective measures and the monitoring program. Based on that evaluation, the Forest Service, USACE, or CPUC may require that SCE revise or refine the protective measures, or alter the monitoring protocol or schedule. If the CPUC, USACE, and Forest Service (for NFS lands) do not authorize alteration of the monitoring protocol or schedule, those shall remain in effect for the duration of Project operation.

If the annual monitoring program identifies adverse effects to NRHP-eligible properties from operation or long-term presence of the Project, or if, at any time, SCE, Forest Service, USACE, or CPUC become aware of such adverse effects, SCE shall notify the Forest Service, USACE, and CPUC immediately and implement mitigation for adverse effects, as directed by the agencies. At the discretion of the Forest Service, USACE, and CPUC, such mitigation may include, but not be limited to modification of protective measures, refinement of monitoring protocols, data-recovery investigations, or payment of compensatory damages in the form of non-destructive cultural resources studies or protection.

Environmental Effects of Mitigation Measure C-1c

While Mitigation Measure C-1c is recommended to reduce impacts to ESAs, this measure may adversely affect other issue areas. The relocation of transmission lines, ancillary facilities, or temporary facilities or work areas to avoid or reduce damage to cultural resource values would potentially disturb sensitive biological resources that may be located in the vicinity of the rerouted area. Such potential impacts are similar to the effects of other Project activities, and would require the implementation of mitigation measures presented in Section 3.4 (Biological Resources).

CEQA Significance Conclusion

In many cases, direct impacts may be avoided through minor design modifications and Project effects would be reduced to a less-than-significant level (Class II) by the avoidance and protection measures listed in Mitigation Measures C-1a through C-1h, above; this is the preferred treatment for all cultural resources. Once final design is completed and the APE has been defined fully, additional surveys and evaluations may be necessary, as discussed in Mitigation Measure C-1b (Inventory cultural resources in the APE). Using best available data, known cultural resources should be avoided wherever possible through Project redesign and engineering modifications as described in Mitigation Measure C-1c (Avoid and protect significant resources). If cultural resources are identified through additional surveys or construction activities, then Mitigation Measures C-1e (Develop and implement Historic Properties Treatment Plan), C-1f (Conduct data recovery excavation or other actions to reduce adverse effects), C-1g (Conduct cultural resources monitoring), and C-1h (Train construction personnel to identify cultural resources) as detailed above, shall be implemented by SCE to ensure discovery, evaluation, and treatment of unknown buried prehistoric and historical archaeological sites. Mitigation Measure C-1i would also serve to minimize indirect Project impacts.

Implementation of these measures would reduce impacts to less-than-significant levels. However, it is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse (Class I). Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse (Class I).

Substantial adverse change in a resource included in a local register (Criterion CR2)

Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected by the proposed Project. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Impact C-2: Native American human remains could be uncovered, exposed, and/or damaged during Construction.

Native American human remains or sacred features, in the form of primary inhumations, cremations, ceremonial bundles, or mourning ceremony features, could be inadvertently uncovered, exposed, and/or otherwise damaged during construction.

Mitigation Measure for Impact C-2

C-2 **Treatment of human remains discovered during construction.** APM CR-6 addresses the inadvertent discovery of human remains. If human remains are discovered during construction, all work will be diverted from the area of the discovery and the CPUC, USACE, and Forest Service authorized officer will be informed immediately. SCE shall follow all State and federal laws, statutes, and regulations that govern the treatment of human remains. As requested, SCE shall assist and support the CPUC, USACE, and Forest Service with the preparation of a NAGPRA Action Plan and all required government-to-government consultations with Native Americans and appropriate agencies and commissions. SCE shall comply with and implement all required actions and studies that result from such consultations, as directed by the CPUC, USACE, and/or Forest Service.

CEQA Significance Conclusion

Exposure of unanticipated Native American human remains or sacred features during construction would be a significant and unavoidable impact (Class I) to the remains and an adverse effect under the regulations in the NHPA. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant.

3.5.6.2 Cumulative Effects Analysis

Geographic Extent

For cultural resources, the geographic extent of cumulative impacts encompasses a relatively broad area because the significance or importance of any individual resource can only be judged in terms of its regional context and relationship to other resources. Thus, the significance of impacts on any given resource or group of resources must be examined in light of the integrity of the regional resource base. Because the number of cultural resources is finite, limited, and non-renewable, any assessment of cumulative impacts must take into consideration the impacts of the proposed Project on resources within the Area of Potential Effects; the extent to which those impacts degrade the integrity of the regional resource base; and impacts other projects may have on the regional resource base. If these effects, taken together, result in a collective degradation of the resources base, then those impacts are considered cumulatively considerable.

For the TRTP, the regional resource base is defined geographically, ethnographically, and with reference to the specific relevant administrative and management units. The geographic scope of the cumulative impact analysis takes in a broad region encompassing the entire western Antelope Valley, western San Gabriel Valley, and the intervening San Gabriel Mountains. The analysis also takes into consideration the cultural geography of the Serrano and Gabrieliño people who occupied the region prehistorically, considering the integrity of the entire suite of resources that make up the cultural patrimony of these groups. Finally, the cumulative impact analysis takes into account the resource base under the direct management and care of the ANF.

Existing Cumulative Conditions

Sections 3.5.2.2 through 3.5.2.7 describe the inventory of cultural resources within the APE of the proposed Project and alternatives. Between 135 and 151 cultural resources are known to exist within the various proposed and alternative Project alignments, as the APE is currently defined. The classes of resources found within the TRTP APE largely reflect the types of sites found within the broader geographic, cultural, and administrative region considered for the cumulative analysis.

The condition of these resources varies depending on the relative effects of numerous natural and cultural agents which can diminish the integrity of any resource or group of resources. The most apparent impacts on cultural resources in the TRTP region are the result of human activities, including the following:

- Settlement, urbanization, and continuing population growth;
- Recreation, particularly increasing recreational uses in the ANF;
- Ranching, agriculture, and silviculture; and
- Development of roads, transmission lines, and other infrastructure.

The principal natural factors affecting the integrity of the resources are erosion, sedimentation, and soil deflation. The effects of natural impact agents can be exacerbated by human interventions which may increase their influence. For example, road construction can destabilize slopes and increase erosion of archaeological sites; desirable recreational sites are frequently coincident with the locations of cultural resources; and certain agricultural practices can increase erosion or create other damage to cultural resources.

Some resources have been seriously degraded by these natural and cultural activities. Virtually every cultural resource in the area of analysis has been affected to some extent by one or a combination of these factors. In some cases, effects have been sufficient to damage or destroy the most important qualities of the resource.

Reasonably Foreseeable Future Projects and Changes

Trends that have led to degradation of the regional cultural resource base, and are expected to continue in the future, include continuing population growth in the Antelope Valley and the concomitant demand for new housing and infrastructure; continuing and increasing recreational use of the Forest landscape; continued ranching and agricultural activities; continuing urban development in the Los Angeles Basin; on-going transportation development and improvement; and the development of wind, solar, and other resources and the infrastructure to connect such resources with their points of consumption.

Major projects that may contribute in the foreseeable future to cumulative impacts on cultural resources include planned wind and solar power generation facilities such as the PdV/Manzana, Alta, and Pine Tree projects and their related transmission lines that will tie into the existing electrical grid system. Several other similar projects are also in the early planning stages. Development of transportation infrastructure such as the California High Speed Rail and Metro Gold Line Extension also has the potential to create direct, indirect, and cumulative impacts on the regional cultural resource base. As described in Section 2.9 (Cumulative Projects), dozens of smaller energy, housing, and recreation projects planned in jurisdictions throughout the region also have the potential to impact cultural resources. Both the list and projection methods of identifying foreseeable projects are appropriate for defining cumulative impacts on cultural resources.

Cumulative Impact Analysis

The significance of the TRTP's cumulative impacts on cultural resources is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. Adverse effects to individual sites cannot be precisely identified until the final transmission structure locations are defined, specific structure sites are determined, detailed engineering plans for all Project roads and facilities are completed, the precise relationship of these Project elements to known sites is determined, and the final NRHP eligibility of cultural resources has been evaluated. If direct impacts to significant sites cannot be avoided, then a significant impact may occur. The magnitude of the Project's

impacts on cultural resources, and thus its cumulative effect in combination with similar impacts from other projects, would depend on the number of sites affected adversely and the nature and extent of individual effects.

Based on the current analysis, as many as 55 prehistoric and historical sites may be affected adversely. Most of these sites are located along potential Project access roads; 14 are at known transmission structure locations, ten are at wire setup sites, and three are at substations. Only one site, CA-LAN-3795, located along an access road, has been evaluated and found eligible for the NRHP; the remaining sites have not been evaluated. If the Project can be redesigned so that most of these sites are avoided and few sites are impacted significantly, if the extent of impacts is minor relative to the nature and extent of the individual site, if the types of sites impacted by the Project are common throughout the region, and if those impacts can be mitigated to less than significant through application of the Project APMs and other mitigation measures, then the combination of those impacts with similar impacts of other projects would not be cumulatively considerable.

If the Project cannot be redesigned so that most of these sites are avoided, and the affected sites prove after evaluation to be historic properties eligible for the NRHP, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.7 Alternative 3: West Lancaster Alternative

The direct and indirect effects on cultural resources of construction activities associated with Alternative 3, as well as subsequent mitigation measures, are identical to those presented for Alternative 2 because they follow the same route and use the same construction methods. No additional cultural resources were identified along the West Lancaster re-route, and thus the affected environment is identical to Alternative 2.

3.5.7.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Impacts associated with Criterion CR1 for Alternative 3 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Construction activities and methods would be identical to those of Alternative 2 and there would be no substantial increase in the potential for Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places) to occur. Implementation of Mitigation Measures C-1a through C-1i would reduce

impacts to less-than-significant levels (Class II). Similarly, it is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse. Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse.

Substantial adverse change in a resource included in a local register (Criterion CR2)

Impacts associated with Criterion CR2 for Alternative 3 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Impacts associated with Criterion CR3 for Alternative 3 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Construction activities and methods would be identical to those of Alternative 2 and there would be no substantial increase in the potential for Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction) to occur. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant (Class I).

3.5.7.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent of cumulative effects for Alternative 3 would be the same as for Alternative 2, as discussed in Section 3.5.6.2.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 3 are the same as for Alternative 2, as discussed in Section 3.5.6.2.

Reasonably Foreseeable Future Projects and Changes

For Alternative 3, trends that have led to degradation of the regional cultural resource base, and are expected to continue in the future, as well as reasonably foreseeable future projects, are identical to those discussed for Alternative 2 (see Section 3.5.6.2).

Cumulative Impact Analysis

As for Alternative 2, the significance of cumulative impacts for Alternative 3 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available (see Section 3.5.6.2). If more than a few sites are impacted significantly, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.8 Alternative 4: Chino Hills Route Alternatives

The APE for Alternative 4 includes 139 cultural resources. Of these, 25 are isolated artifacts or other resources that have been evaluated and judged ineligible for the National Register. These 25 sites are not considered historic properties, and thus any effects on them are not considered significant impacts. No further management consideration is warranted for these sites.

The remaining 114 resources in the APE of Alternative 4 either have been evaluated and judged significant historic properties, or have not been evaluated. Of these sites, 59 may be affected by structure replacement, access and spur roads, or other elements of the Project. Fifty-five potentially affected sites are the same as those described for Alternative 2; additional details on these sites are presented in Section 3.5.6 above. Four additional potentially affected sites are located along or adjacent to the proposed all-weather access road routes to the new switching station required under Alternative 4 (Table 3.5-9). Two of these are prehistoric sites while two date from the historical era; none have been evaluated for significance or eligibility to the NRHP. Thus, the direct and indirect effects on cultural resources of construction activities associated with Alternative 4, as well as subsequent mitigation measures, are comparable to those presented for Alternative 2. Specific impacts would be slightly different because four additional potentially affected sites are located along the all-weather access road routes to the new switching station.

Cumulative impacts of Alternative 4 also are comparable to Alternative 2 because the existing cumulative conditions for Alternative 4 and trends that have led to degradation of the regional cultural resources base are similar to Alternative 2.

Table 3.5-9 Additional Potentially Affected Cultural Resources, Alternative 4

Site Designation	Period	National Register Eligibility	Impact Criterion			Potential Impact				
			CR1	CR2	CR3	Substation	Access Road	Wire Setup Site	Tower Site	Staging Area
CA-SBR-6021	P	Not Evaluated	x				x			
SBR-4033H	H	Not Evaluated	x				x			
SBR-5097H	H	Not Evaluated	x				x			
SBR-5283	P	Not Evaluated	x				x			

Key: P/H = Prehistoric/Historic; H = Historic; P = Prehistoric

3.5.8.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Impacts associated with Criterion CR1 for Alternative 4 would be comparable to impacts associated with this criterion for Alternative 2. Construction activities and methods would be identical to those of Alternative 2 (see Section 3.5.6.1). Specific impacts would be slightly different because four additional sites are located along the proposed all-weather access road routes to the new switching station. In general, however, there would be no substantial increase in the potential for Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places) to occur. Implementation of Mitigation Measures C-1a through C-1i would reduce impacts to less-than-significant levels (Class II). Similarly, it is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse. Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse.

Substantial adverse change in a resource included in a local register (Criterion CR2)

Impacts associated with Criterion CR2 for Alternative 4 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Impacts associated with Criterion CR3 for Alternative 4 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Construction activities and methods would be identical to those of Alternative 2. Specific impacts would be slightly different because four additional sites are located along the proposed all-weather access road routes to the new switching station. In general, however, there would be no substantial increase in the potential for Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction) to occur. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant (Class I).

3.5.8.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent of cumulative effects for Alternative 4 would be the same as for Alternative 2, as discussed in Section 3.5.6.2.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 4 are similar to Alternative 2. However, cultural resources along the new ROW would not have suffered from disturbance associated with construction, operation, and maintenance of the existing lines; thus existing cumulative impacts are not as great as along the existing ROW.

Reasonably Foreseeable Future Projects and Changes

For Alternative 4, trends that have led to degradation of the regional cultural resource base, and are expected to continue in the future, as well as reasonably foreseeable future projects, are identical to those discussed for Alternative 2 (see Section 3.5.6.2).

Cumulative Impact Analysis

As for Alternative 2, the significance of cumulative impacts for Alternative 4 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available (see Section 3.5.6.2). If more than a few sites are impacted significantly, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable. However, the cumulative impacts of Alternative 4 are not expected to be greater than for Alternative 2 because the current Project design will not impact cultural sites along the new ROW required for the Chino Hills reroutes, although four sites along the proposed all-weather access road route to the switching station may be affected.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.9 Alternative 5: Partial Underground Alternative

The direct and indirect effects on cultural resources of construction activities associated with Alternative 5, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts may be slightly different because of the construction methods unique to Alternative 5, including portals, air/service shafts, bore holes, and other features related to underground construction. The direct and indirect impacts of these unique construction methods would be comparable, though they may be greater, than those presented for Alternative 2.

3.5.9.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Depending on the number of bore holes, vents, portals, shafts, access roads, and other facilities associated specifically with underground construction, the magnitude of impacts along Segment 8A associated with Criterion CR1 could be greater than impacts associated with this criterion for Alternative 2. These specific underground construction features may disturb a greater area than their comparable above ground construction methods, thus resulting in greater physical impacts to cultural resources that cannot be avoided. Construction activities and methods along other Project segments would be identical to those of

Alternative 2 (see Section 3.5.6.1) and there would be no substantial increase in the potential for Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places) to occur in those segments.

Implementation of Mitigation Measures C-1a through C-1i would reduce impacts to less-than-significant levels (Class II). Similarly, it is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse. Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse.

Substantial adverse change in a resource included in a local register (Criterion CR2)

Impacts associated with Criterion CR2 for Alternative 5 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Although the likelihood of encountering human remains along Segment 8A is low, the potential exists and increased ground disturbance associated with specific underground construction techniques could result in greater physical impacts to cultural resources that cannot be avoided. Construction activities and methods along other Project segments would be identical to those of Alternative 2 (see Section 3.5.6.1) and there would be no substantial increase in the potential for Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction) to occur in those segments. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant (Class I).

3.5.9.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent of cumulative effects for Alternative 5 would be the same as for Alternative 2, as discussed in Section 3.5.6.2.

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 5 are identical to Alternative 2, as discussed in Section 3.5.6.2.

Reasonably Foreseeable Future Projects and Changes

For Alternative 5, trends that have led to degradation of the regional cultural resource base, and are expected to continue in the future, as well as reasonably foreseeable future projects, are identical to those discussed for Alternative 2 (see Section 3.5.6.2).

Cumulative Impact Analysis

As for Alternative 2, the significance of cumulative impacts for Alternative 5 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available (see Section 3.5.6.2). If more than a few sites are impacted significantly, if the impacts are

extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The direct and indirect effects on cultural resources of construction activities associated with Alternative 6, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts would be slightly different because cultural resources at proposed helicopter staging areas may be affected, while impacts associated with construction in Segments 6 and 11 using standard techniques may be reduced. Impacts along all other segments would remain the same. Thus, overall direct and indirect impacts of this alternative are expected to be comparable to Alternative 2.

The APE for Alternative 6 includes 142 cultural resources. Of these, 27 are isolated artifacts or other resources that have been evaluated and judged ineligible for the National Register. These 27 sites are not considered historic properties, and thus any effects on them are not considered significant impacts. No further management consideration is warranted for these sites.

The remaining 115 resources in the APE of Alternative 6 either have been evaluated and judged significant historic properties, or have not been evaluated. Of these sites, 59 may be affected by transmission structure replacement, access and spur roads, or other elements of the Project, including six unevaluated sites in the five alternative helicopter staging areas to be used if Alternative 6 is adopted. These potentially affected sites include the 55 sites that are listed in Table 3.5-2 for Alternative 2 and four additional sites that lie exclusively within helicopter staging areas to be used if Alternative 6 is adopted. Table 3.5-10 shows the National Register status (eligible or unevaluated), Project actions that may affect them (e.g., structure construction, use of existing road), and potential impact criteria (CR1 through CR3) for these four resources.

Table 3.5-10 Additional Potentially Affected Cultural Resources, Alternative 6

Site Designation	Period	National Register Eligibility	Impact Criterion			Potential Impact				
			CR1	CR2	CR3	Substation	Access Road	Wire Setup Site	Tower Site	Staging Area
AE-TRTP-1	P	Not Evaluated	x							x
AE-TRTP-2	P	Not Evaluated	x							X
AE-TRTP-3	P	Not Evaluated	x							X
05015100205	P	Not Evaluated	x							X

Key: P/H = Prehistoric/Historic; H = Historic; P = Prehistoric

3.5.10.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Impacts associated with Criterion CR1 for Alternative 6 would be similar to impacts associated with this criterion for Alternative 2. Specific impacts would be slightly different because cultural resources at proposed helicopter staging areas may be affected, while impacts associated with construction in Segments 6 and 11 using standard techniques may be reduced. Impacts along all other segments would remain the same (see Section 3.5.6.1). In general, there would be no substantial increase in the potential for Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places) to occur. Implementation of Mitigation Measures C-1a through C-1i would reduce impacts to less-than-significant levels (Class II). Similarly, it is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse. Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse.

Substantial adverse change in a resource included in a local register (Criterion CR2)

Impacts associated with Criterion CR2 for Alternative 6 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Impacts associated with Criterion CR3 for Alternative 6 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Specific impacts would be slightly different because cultural resources at proposed helicopter staging areas may be affected, while impacts associated with construction in Segments 6 and 11 using standard techniques may be reduced. Impacts along all other segments would remain the same. In general, there would be no substantial increase in the potential for Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction) to occur. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant (Class I).

3.5.10.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent of cumulative effects for Alternative 6 would be the same as for Alternative 2 (see Section 3.5.6.2).

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 6 are similar to Alternative 2. In general, cultural resources at proposed helicopter staging areas may not have suffered from disturbance associated with construction, operation, and maintenance of the existing lines; however, most proposed staging areas have been used previously, and thus sites at these locations have still suffered some prior disturbance. Thus existing cumulative impacts are comparable.

Reasonably Foreseeable Future Projects and Changes

For Alternative 6, trends that have led to degradation of the regional cultural resource base, and are expected to continue in the future, as well as reasonably foreseeable future projects, are identical to those discussed for Alternative 2 (see Section 3.5.6.2).

Cumulative Impact Analysis

As for Alternative 2, the significance of cumulative impacts for Alternative 6 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. However, the cumulative impacts of Alternative 6 may be greater than for Alternative 2 if effects on significant resources at the proposed helicopter staging areas are not offset by the reduced effects of helicopter construction. If more than a few sites are impacted significantly, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.11 Alternative 7: 66-kV Subtransmission Alternative

The direct and indirect effects on cultural resources of construction activities associated with Alternative 7, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts may be greater because of the greater archaeological and historical sensitivity of the reroute and underground alignments and higher potential for buried remains, including human remains. Impacts along

all other segments would remain the same. Thus, overall direct and indirect impacts of this alternative are expected to be greater than Alternative 2.

3.5.11.1 Direct and Indirect Effects Analysis

Adverse effect on historic properties (Criterion CR1)

Impacts associated with Criterion CR1 for Alternative 7 would be similar to impacts associated with this criterion for Alternative 2. Specific impacts may be greater because there are 16 identified cultural resources along the three elements of Alternative 7, four of which are already considered historic properties and 12 of which have not been evaluated (see Table 3.5-6). Some of these resources may be affected by construction of this alternative. Additionally, there is a high potential for buried archaeological remains in the Whittier Narrows vicinity. Thus, there is a substantial increase in the potential for Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places) to occur.

Impacts along all other segments would remain the same as Alternative 2 (see Section 3.5.6.1). Implementation of Mitigation Measures C-1a through C-1i would reduce impacts to less-than-significant levels (Class II). It is important to note that if direct impacts to NRHP properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the NHPA regulations, effects would still be considered adverse. Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse.

Substantial adverse change in a resource included in a local register (Criterion CR2)

Impacts associated with Criterion CR2 for Alternative 7 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected. As a result, there is no impact under Criterion CR2.

Expose and/or damage to Native American human remains (Criterion CR3)

Impacts associated with Criterion CR3 for Alternative 7 would be the same as impacts associated with this criterion for Alternative 2 (see Section 3.5.6.1). Specific impacts may be greater because of the greater archaeological sensitivity and potential for buried archaeological remains in the Whittier Narrows area, and the potential for burials associated with the Mission Vieja site, whose general location is known but whose specific location has not been pinpointed. Thus, there is a substantial increase in the potential for Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction) to occur. Impacts along all other segments would remain the same. Implementation of Mitigation Measure C-2 would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant (Class I).

3.5.11.2 Cumulative Effects Analysis

Geographic Extent

The geographic extent of cumulative effects for Alternative 7 would be the same as for Alternative 2 (see Section 3.5.6.2).

Existing Cumulative Conditions

The existing cumulative conditions for Alternative 7 are similar to Alternative 2. In general, cultural resources along proposed Alternative 7 re-routes and undergrounding have suffered past effects from floods, fires, industrial and residential development, flood control projects, and other historical activities. These cumulative impacts are comparable to those along other portions of Segments 7 and 8A in the Whittier Narrows area. Thus existing cumulative impacts are comparable to Alternative 2.

Reasonably Foreseeable Future Projects and Changes

For Alternative 7, trends that have led to degradation of the regional cultural resource base and are expected to continue in the future, as well as reasonably foreseeable future projects, are identical to those discussed for Alternative 2 (see Section 3.5.6.2).

Cumulative Impact Analysis

As for Alternative 2, the significance of cumulative impacts for Alternative 7 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. However, the cumulative impacts of Alternative 7 may be greater than for Alternative 2 because there are more resources recorded along the alternative elements, and a comparable number are not avoided by the proposed re-routes and undergrounding. If more than a few sites are impacted significantly, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable. The overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures. As a result, cumulative impacts would be Class I, significant and unavoidable.

Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

For Impact C-1 (Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places), preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the TRTP's contribution to cumulative degradation of the regional resource base. For Impact C-2 (Native American human remains could be uncovered, exposed, and/or damaged during Construction), there is no feasible additional mitigation to reduce its contribution to cumulative effects.

3.5.12 Impact Significance Summary

Table 3.5-11 summarizes the direct and indirect environmental impacts of the proposed Project (Alternative 2) and the other alternatives related to cultural resources. The direct and indirect effects of the Project and alternatives have been fully described in Sections 3.5.6 through 3.5.11 above. Alternative 1 (No Project/No Action) impacts are fully described in Section 3.5.5; however, since no potential future project information is available an impact significance level for Alternative 1 is not included in the table below.

Table 3.5-11. Summary of Impacts and Mitigation Measures – Cultural Resources

Impact	Impact Significance								Mitigation Measures
	Alt. 1+	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	NFS Lands*	
C-1: Construction may diminish the integrity of properties eligible for the National Register of Historic Places.	N/A	Class II	Class II	Class II	Class II	Class II	Class II	Yes	C-1a: Develop and execute a Programmatic Agreement. C-1b: Inventory cultural resources in the Final APE. C-1c: Avoid and protect significant resources. C-1d: Evaluate the significance of cultural resources that cannot be avoided. C-1e: Develop and implement Historic Properties Treatment Plan. C-1f: Conduct data recovery excavation or other actions to reduce adverse effects. C-1g: Conduct cultural resources monitoring. C-1h: Train construction personnel to identify cultural resources. C-1i: Protect and monitor NRHP-eligible properties.
C-2: Native American human remains could be uncovered, exposed, and/or damaged during Construction.	N/A	Class I	Class I	Class I	Class I	Class I	Class I	Yes	C-2: Treatment of human remains discovered during construction.

N/A = Not Available

* Indicates whether this impact is applicable to the portion of the Project on National Forest System lands.

+ Potential projects would likely traverse the same geographic regions as either the proposed Project or Alternatives 3 through 7, and subsequently introduce similar types of impacts.