

FINAL

HISTORIC PROPERTIES MANAGEMENT PLAN
for the
APPROVED SAN DIEGO GAS & ELECTRIC
SUNRISE POWERLINK FINAL ENVIRONMENTALLY
SUPERIOR SOUTHERN ROUTE,
SAN DIEGO AND IMPERIAL COUNTIES, CALIFORNIA

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MANAGEMENT SUMMARY/ABSTRACT

This Historic Properties Management Plan (HPMP) presents the measures that will be implemented to address the avoidance, minimization of impacts and mitigation of possible impacts to cultural resources along the 118-mi.-long Final Sunrise Powerlink (SRPL) Environmentally Superior Southern Route (FESSR) in Imperial and San Diego counties. The SRPL is a 230-kV/500-kV transmission line that will traverse from the San Diego Gas & Electric Company's (SDG&E) Imperial Valley Substation near El Centro, Imperial County, to SDG&E's Sycamore Canyon Substation near Interstate 15 in coastal San Diego. This HPMP was prepared by ASM Affiliates in consultation with USDI Bureau of Land Management (BLM), California Public Utilities Commission (CPUC), and SDG&E in compliance with the Programmatic Agreement (PA) Stipulation IV (Appendix A).

Compliance by the SRPL project with the National Historic Preservation Act (NHPA) is required. Pursuant to 36 CFR § 800, regulations implementing the NHPA, a PA for the SRPL project was signed in December 2008 by the BLM, USDA Forest Service (USFS), Marine Corps Air Station Miramar (MCAS Miramar), U.S. Army Corps of Engineers (USACE), CPUC, SDG&E, California State Historic Preservation Officer as signatory parties, and the Agua Caliente Band of Mission Indians as a concurring party. The project route was approved by the CPUC in December 2008 and by the BLM in January 2009. Stipulation IV of the PA requires the development of a Historic Properties Management Plan (HPMP) and the development of one or more Historic Property Treatment Plans (HPTP).

The HPMP, which is detailed here, is intended to:

- a. Summarize the results of the survey and identification of potential historic properties including any Traditional Cultural Properties (TCP) in the area of potential effects (APE) of the selected alternative.
- b. Describe a process for evaluation of cultural resources for eligibility for inclusion on the National Register of Historic Places (NRHP).
- c. Develop a process for incorporating design changes to the project to avoid or minimize adverse effects on historic properties.
- d. Develop ways to avoid, minimize, or mitigate adverse effects on historic properties in a manner consistent with the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS).
- e. Demonstrate the incorporation of conditions and stipulations set forth in the FEIR/EIS to meet both CPUC and BLM requirements.
- f. Incorporate or adhere closely to the Mitigation Monitoring Plan developed by the CPUC.
- g. Determine the process for requiring on-site monitoring by cultural resource professionals and Native American participants.
- h. Determine the curation process for all recovered cultural resources as a result of the project.

- i. Address the assessment of effects and how adverse effects to historic properties will be resolved in consultation with the Applicant and other consulting parties.
- j. Establish the process for managing unanticipated discoveries
- k. Confirm the process for managing discovery of human remains taking into account applicable state laws, local laws, and the Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. § 3001) on federal lands.
- l. Identify the requirements for Historic Properties Treatment Plans (HPTPs) for eligible historic properties that will be directly impacted and cannot be avoided through project design or avoidance.

Historic properties referred to above are defined as those cultural resources determined eligible for or listed in the National Register of Historic Places.

Ongoing Native American consultation for the project is being conducted by the BLM with the Agua Caliente Band of Mission Indians, Augustine Band of Cahuilla Indians, Barona Band of Diegueño Indians, Cahuilla Band of Indians, Campo Kumeyaay Nation, Cocopah Indian Tribe, Ewiiapaayp Band of Kumeyaay Indians, Fort Yuma Quechan Tribe, Kwaaymii Laguna Band of Indians, La Jolla Band of Luiseño Indians, La Posta Band of Kumeyaay Indians, Los Coyotes Band of Cahuilla and Cupeño Indians, Manzanita Band of Kumeyaay Indians, Mesa Grande Band of Mission Indians, Pauma/Yuima Band of Mission Indians, Pechanga Band of Mission Indians, Ramona Band of Cahuilla Indians, Rincon Luiseño Band of Indians, San Pasqual Band of Diegueño Indians, Santa Ysabel Band of Diegueño Indians, Soboba Band of Luiseño Indians, Sycuan Band of Kumeyaay Nation, Torres-Martinez Desert Cahuilla Indians, and Viejas Band of Kumeyaay Indians (see the Programmatic Agreement in Appendix A).

ASM Affiliates (ASM) completed a Class III Inventory of the cultural resources within the area of direct impacts (ADI) of the SRPL FESSR APE (Garcia-Herbst et al. 2010) as a mitigation requirement intended as the first element of this Management Plan. Based on the Class III inventory results, 720 sites and isolates are identified within or adjacent to the SRPL FESSR project as defined in January 2010. Of these resources, 301 sites and isolates are recommended as ineligible for NRHP-listing, based on the limited quantity, quality, and variety of artifacts and cultural features. At 413 sites, investigation to determine the presence and integrity of a subsurface deposit would be required for a definitive determination of eligibility, meaning that additional evaluation beyond survey level assessment is necessary to determine their eligibility status. For the purposes of this project, these sites are categorized as unevaluated but are afforded the protection and management consideration of eligible sites until eligibility is ascertained. Five sites within the project APE are recommended as eligible, and one site is listed in the National Register of Historic Places/California Register of Historical Resources (NRHP/CRHR). Of the sites in the project ADI of the APE with assumed National Register eligibility status, 37 are in areas of the project with potential direct impacts from proposed project activities which may not be avoidable. This number may increase or decrease due to project redesign prior to construction and the table provided in Appendix D will be updated to reflect any changes. The remaining sites are in areas where no direct ground disturbance is anticipated or where establishing an ESA around the perimeter of the known sites will preclude direct impacts.

Historic built environment resources in the APE will be addressed in a separate inventory report that is in preparation at this time (Ní Ghabhláin et al. 2010).

This management plan addresses various proposed methods to reduce adverse effects to these cultural resources including: minimization and avoidance through project redesign; the establishment of Environmentally Sensitive Areas (ESAs) that would be off-limits to all ground disturbing activities; and appropriate treatment for those resources that cannot be protected from direct impacts, and may require eligibility testing, and possibly, data recovery. The HPMP also provides as part of management of historic properties during construction a construction monitoring plan and an unanticipated discovery treatment plan for the construction phase of the project, including Native American participation and consultation. Finally, this management plan defines the methods for the adoption, amendment, and review of this HPMP and for curation of the archaeological materials recovered as a result of this project.

1. INTRODUCTION

This HPMP describes the measures that will be implemented to mitigate the impacts to cultural resources in the SDG&E Final SRPL FESSR, in San Diego and Imperial counties, California (Figure 1). ASM has prepared this HPMP in consultation with SDG&E, BLM, CPUC, and all consulting parties in compliance with the Programmatic Agreement (PA) Stipulation IV (see Appendix A). The following introductory sections present a description of the project, the regulatory framework for the project, and an introduction to the resources management objectives.

PROJECT DESCRIPTION

The SRPL FESSR, a 118-mi. 230-kV/500-kV transmission line that will traverse from SDG&E's Imperial Valley Substation near El Centro, Imperial County, to SDG&E's Sycamore Canyon Substation near Interstate 15 in coastal San Diego, was approved by the CPUC in December 2008 and by the BLM in January 2009. The approved SRPL primarily consists of new electric transmission lines between the Imperial Valley Substation and the western portion of SDG&E's service area in San Diego, as well as a new substation in central San Diego County, along with other system upgrades and modifications (Figure 2).

The SRPL FESSR traverses both public and private land. The project begins at the Sycamore Substation, which is between Interstate 15 and State Route 67 north of U.S. Marine Corps Air Station Miramar (MCAS Miramar). The line then turns south past San Vicente Reservoir, along the north side of El Monte Valley, and across the western end of El Capitan Reservoir. It crosses to the south side of Interstate 8 (I-8), where it will be constructed underground along Alpine Boulevard through Alpine until it turns south near the I-8/Willow Road interchange towards the community of Barrett Junction where it turns easterly and parallels State Route 94. Just beyond Barrett Junction, again following State Route 94, the route goes east to Cameron Corners, where it turns north to cross Interstate 8 just west of La Posta Reservation. The line continues north, and then turns southeasterly before it reaches the Ewiiapaayp Reservation. It runs southeast through McCain Valley until it reaches Interstate 8; the line crosses Interstate 8 near the community of Boulevard and continues south to meet with the existing Southwest Powerlink right-of-way. From this point, the line parallels the Southwest Powerlink as it follows Interstate 8 and continues north from Ocotillo. These lines swing south again just west of Plaster City, cross Interstate 8, and terminate at the Imperial Valley substation west of El Centro. The route of the FESSR is depicted on a total of 23 California USGS 7.5-minute topographic quadrangles (Alpine, Barrett Lake, Cameron Corners, Carrizo Mountain, Coyote Wells, Descanso, El Cajon, El Cajon Mountain, In-Ko-Pah Gorge, Jacumba, Jacumba OE S, La Mesa, Live Oak Springs, Morena Reservoir, Mount Laguna, Mount Signal, Painted Gorge, Plaster City, Poway, San Vicente Reservoir, Sombrero Peak, Viejas Mountain, and Yuha Basin).

Reroutes

After careful review of the FESSR, the SDG&E Sunrise project team, composed of engineers, construction, and environmental specialists, reviewed the approved project ROW with the goal

of avoiding and minimizing potential impacts to natural and cultural resources and addressing requests by a variety of groups and individuals who would be impacted by the project. As a result of these reviews and adherence to a number of mitigation measures including Land Use (L-2b; Revise project elements to minimize land use conflicts) and Visual (V-3a, VR-APM-1, VA-APM-5, and VA-APM-6), a number of alignment adjustments were made to the approved FESSR. These adjustments fall into two categories- minor and major. The minor adjustments generally were made within the defined or approved FESSR APE and include elimination, or relocation of project elements to avoid or minimize impacts to biological or cultural resources, reduce visual impact, or improve constructability as a result of engineering considerations. The major ROW adjustments were also driven by the goals of avoiding or minimizing project impacts. Many of the adjustments involved significant routing changes, thus these are termed, reroutes.

There is a total of 23 reroutes proposed for the current project. The reroutes are labeled as follows: Sugarloaf; Jade; Quino; Jackson; Rough Acres; JAM; La Posta; Lenac; Rees; Pacific Crest Trail; Potrero; Hermes; Gaskill Peak North; Just; Slaughter/Wilson; Jerney; Loritz Access Road; Star Valley; High Meadow; County Aqueduct; Morgan; Ball; Schmidt; and Stonebridge (Figure 3). Reroutes are based on various project constraints and requirements, including but not limited to archaeological, biological, project design feasibility, and constructability. In addition to reroutes, a number of project modifications were undertaken during the final design phase in order to avoid and minimize impacts to various resources, including cultural resources. These modifications include the reduction in the total number of: new access roads; structures; wire pull sites; and construction yards. These reductions resulted in a net reduction in the total acres of ground disturbance and in the number of cultural resource sites that would be directly impacted during ground disturbance. This HPMP does not assume that these reroutes and project modifications will be approved by the BLM and CPUC. They are currently being reviewed and considered by the stakeholders and the approval or rejection of these alterations does not change the goals or processes described in this Management Plan.

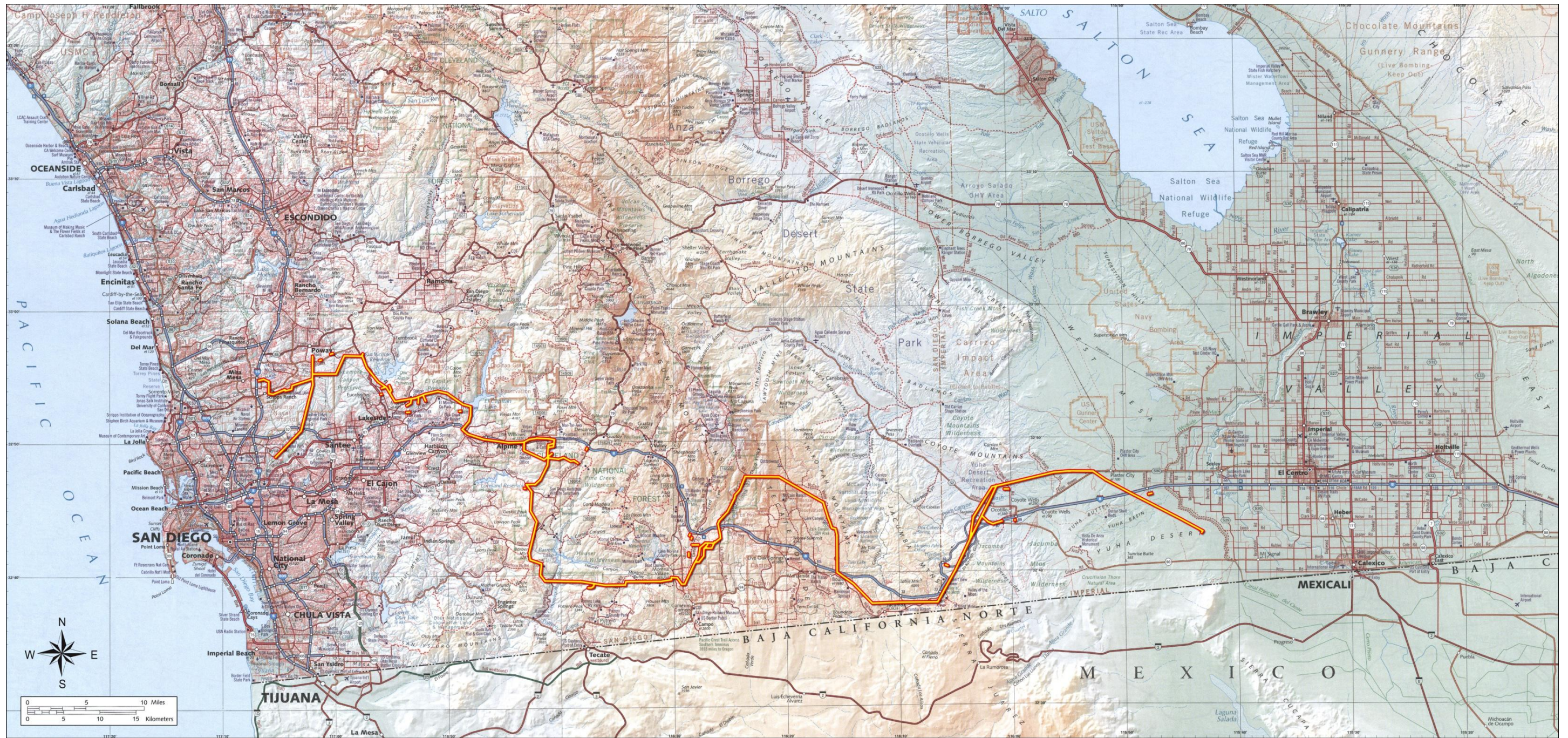


Figure 1. SRPL FESSR project vicinity.

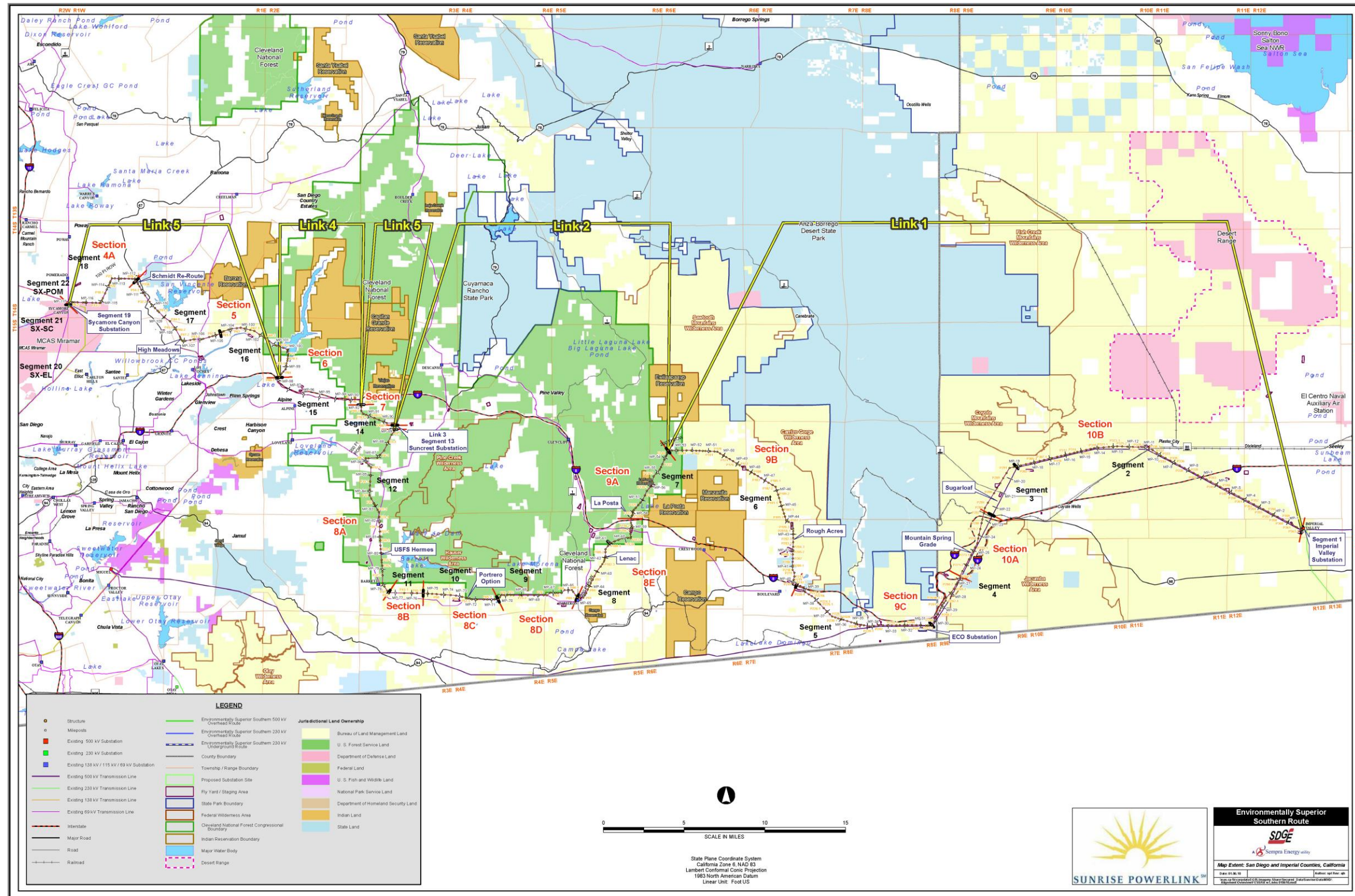


Figure 2. SRPL FESSR project components.

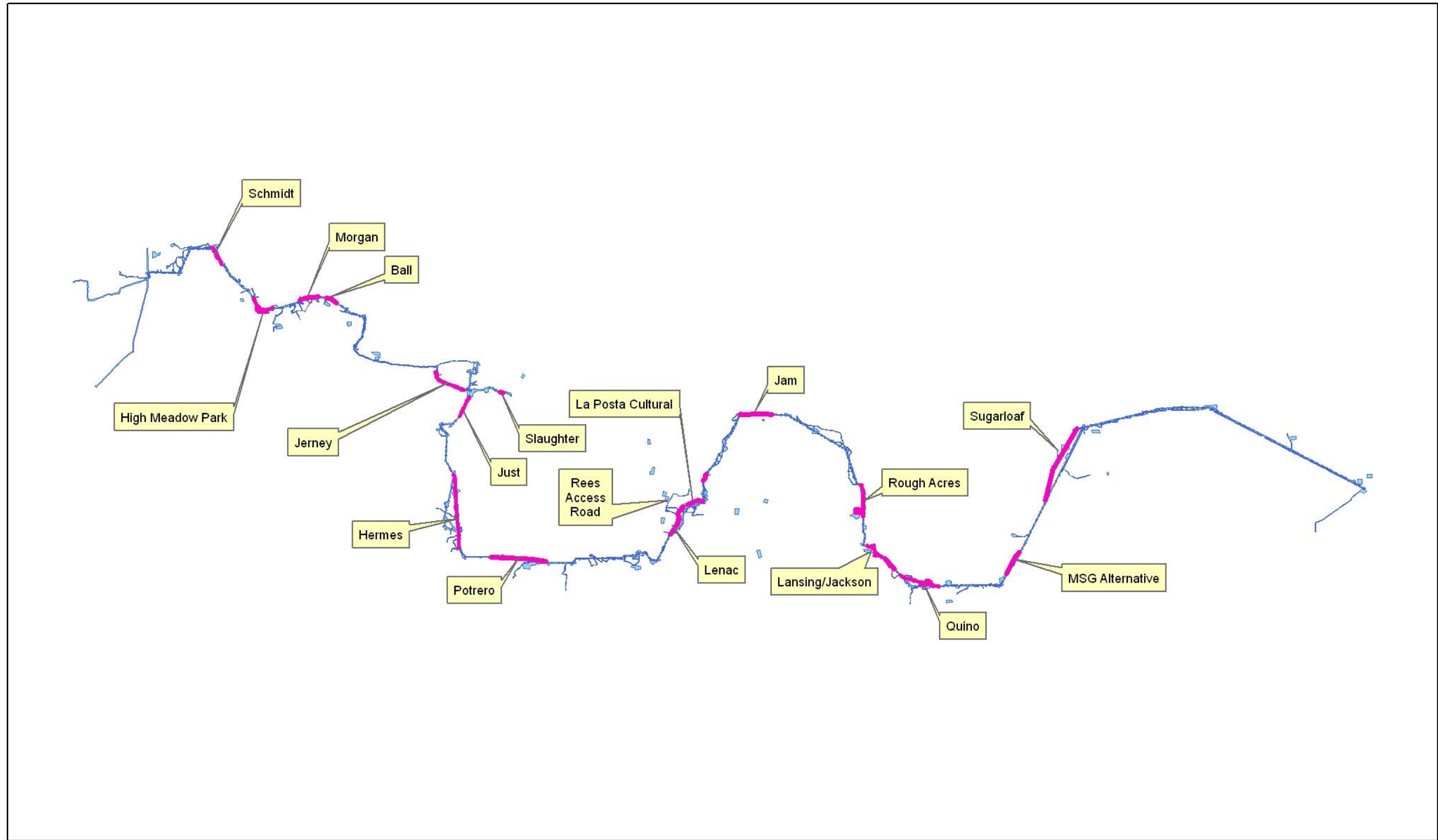


Figure 3. SRPL FESSR reroutes.

All of the proposed reroutes and project modifications outside the approved ROW and proposed modifications of placement of various project features were subjected to a Class III Inventory by ASM (Garcia-Herbst et al. 2010) and incorporated into the final Class III Inventory report.

REGULATORY FRAMEWORK

The basis for determining significance of cultural resources is driven by the National Historic Preservation Act (NHPA), 16 U.S.C. § 470 et seq. In particular, 16 U.S.C. § 470f (Section 106) requires federal agencies to take into account impacts upon resources listed or eligible for listing on the National Register of Historic Places (NRHP).

The Section 106 process has been completed for the SRPL FESSR. Section 106 compliance is in accordance with the Programmatic Agreement [pursuant to 36 CFR §800.14(b)] executed by the BLM and the California State Historical Preservation Officer (SHPO) in December 2008. The USFS, MCAS Miramar, USACE, CPUC, SDG&E, and potentially affected Native American Tribes are invited signatories and/or concurring parties.

The “Programmatic Agreement among the Department of the Interior, Bureau of Land Management, the Department of Agriculture, Forest Service, the Marine Corps Air Station Miramar, the U.S. Army Corps of Engineers, the California Public Utilities Commission, San Diego Gas and Electric Company, and the California State Historical Preservation Officer regarding the Proposed San Diego Gas and Electric Power Company’s Sunrise Powerlink Transmission Line Project, Imperial and San Diego Counties, California” (PA) (Appendix A), describes how historic properties will be managed during the SRPL Project. The PA outlines how historic properties would be treated during planning for and implementation of the SRPL Project. The parties who signed the PA recognized that phased environmental compliance with Section 106 of the NHPA is appropriate for the SRPL Project. Therefore, the PA was developed to describe how Section 106 compliance would be carried out to avoid, minimize, or mitigate any adverse effects from the project. Compliance would be completed before any Notice to Proceed is issued for any portion of the project that could affect historic properties.

The BLM is the federal Lead Agency under the National Environmental Policy Act (NEPA) and for compliance with Section 106 of the NHPA. The CPUC is the Lead Agency under the CEQA. The USFS and the USACE are participating agencies. Also USACE issues permits for the disposal of dredged material into wetlands and/or waters of the United States, pursuant to Section 404 of the Clean Water Act.

CONSTRUCTION METHODS

Construction elements for the proposed project include the installation of steel structures as well as wood poles for overhead components. Steel structures, including lattice towers, tubular poles, and H-frame structures will support the 230/500 kV circuits, while new and replacement wood poles will support a 69 kV circuit in some locations. Overhead construction elements for the project will require the establishment of new access roads and the improvement of existing roads

from minor to major levels of alteration as well as the creation of foundations at each of the individual structure locations. Construction of the proposed structures includes ground-disturbing activities to install concrete foundations to support the superstructures, and the use of heavy equipment in the assembly and erection of the structures, as well as the use of specialized heavy equipment for stringing and tensioning of the transmission lines.

Underground components of the project will require subsurface trenching to facilitate the installation of transmission lines and associated concrete vaults. The bulk of the underground work is proposed for an approximately 6-mile segment through the community of Alpine. Construction of above ground transition structures to accommodate the transition to overhead transmission lines would include the clearing and grading activities and installation techniques similar to those utilized for overhead transmission line structures. Horizontal boring and directional drilling would be used to install underground transmission lines in areas where open trenching is not feasible.

The installation of a new substation and upgrades to existing facilities would entail the clearing and grading of access roads, subsurface excavations for the construction of the facility and associated equipment, and erection of permanent fencing. Staging areas and Construction yards to facilitate the storage and transport of equipment, helicopters, personnel, and construction materials for all aspects of the project could include clearing and grading activities as well as importation of temporary rock layers and installation of temporary fencing.

DESCRIPTION OF AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) is the geographic area or areas, regardless of land ownership, within which an Undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The BLM, in consultation with the SHPO and other consulting parties, has determined and documented the APE as consisting of an alignment encompassing approximately 8,478 acres, stretching from SDG&E's Imperial Valley Substation in Imperial County to SDG&E's Sycamore Canyon Substation in San Diego County.

The APE for the Sunrise Powerlink project is described in the Programmatic Agreement for a Class III Cultural Resources Inventory conducted for the project (see Appendix A):

- A. The APE will apply to federal, state, and private lands included in the transmission line corridor, or included in staging areas, access roads, borrow areas, transmission substations, or other related transmission infrastructure for this Undertaking.
- B. The survey corridor width will meet the accepted convention of 300 feet minimum (150 feet on either side of centerline for the right-of-way) in areas where above ground transmission lines are proposed or 120 feet (60 feet on either side of centerline) where below ground transmission lines are proposed.
- C. The survey corridor width for access roads will be 100 feet (50 feet on either side of centerline).

- D. The survey convention for staging areas, borrow areas, substations, and other transmission infrastructure will include a buffer of 150 feet around the footprint of the proposed activity.

In addition to the survey corridor or ADI of the APE, as required by the BLM Record of Decision and Mitigation Measures C-1c and C-6a, the area within the APE where indirect effects may occur was defined to address indirect visual impacts on National Register eligible historic built environment properties. The area where indirect effects may occur encompassed a radius of 1/2 mi. from the approved project centerline, including around each transmission tower.

In accordance with Mitigation Measure C-4a, SDG&E will provide assistance to the BLM, as requested by the BLM, to complete required government-to-government consultation with interested Native American tribes and individuals (Executive Memorandum of April 29, 1994 and Section 106 of the National Historic Preservation Act) and other Traditional Groups to assess the impact on Traditional Cultural Properties or other resources of Native American concern, such as sacred sites and landscapes, or areas of traditional plant gathering for food, medicine, basket weaving, or ceremonial uses within the approved project APE. As directed by the BLM, SDG&E shall undertake required treatments, studies, or other actions that result from such consultation. Actions that are required during or after construction shall be defined, detailed, and scheduled in a Historic Properties Treatment Plan and implemented by the SDG&E, consistent with Mitigation Measure C-1c.

OBJECTIVES

Per stipulation IV of the PA, the treatment objectives presented in this HPMP address the following issues:

- 1) A process for survey and identification of potential historic properties including any Traditional Cultural Properties in the APE of the selected final route.
- 2) A process for evaluation of cultural resources for eligibility for inclusion on the National Register of Historic Places (NRHP).
- 3) A process for incorporating design changes to the project to avoid adverse effects to historic properties.
- 4) Ways to avoid, minimize, or mitigate adverse effects on historic properties as outlined in the EIR/EIS.
- 5) Incorporation of conditions and stipulations set forth in the EIS/EIR to meet both CPUC and BLM requirements.
- 6) Preparation of a Historic Properties Treatment Plan or Plans
- 7) Provision of a list of the known cultural resources in the Undertaking's APE.

NATIVE AMERICAN CONSULTATION

Native American consultation for the SRPL is being conducted by the BLM for both government-to-government consultation requirements and the Section 106 process with identified Tribal governments, tribal organizations and tribal individuals. ASM is assisting BLM personnel with Native American consultation, including attending consultation meetings with BLM personnel and interested Native American parties and organizing and leading field trips to specific cultural resource sites within the project APE. LSA Associates, Inc. (LSA) is also assisting BLM personnel with Native American consultation, including organizing and documenting consultation meetings with BLM personnel and interested Native American parties. Consultation is an ongoing process and is anticipated to continue through the construction phase of this project. LSA is also conducting ethnographic interviews with local tribal members. The resulting document will be produced under separate cover.

ORGANIZATION AND CONTENTS OF PLAN

Following this introductory chapter, this HPMP presents a cultural context for the project, including previous archaeological research (Chapter 2); cultural resources management objectives, mitigation requirements and a summary of the role and relationship between the HPMP and HPTP (Chapter 3); the methods utilized for the Class III inventory conducted in association with the project, a summary of the inventory results and a discussion of the Buried Site Testing Model and development of a Buried Site Testing Plan (Chapter 4); a discussion of the evaluation of the eligibility status of cultural resources within the SRPL FESSR APE that cannot be avoided (Chapter 5); a discussion of the treatment of historic properties that cannot be protected (Chapter 6); procedures for the issuance of clearances to begin construction including Notices to Proceed (Chapter 7); a plan for the management of historic properties during construction (Chapter 8); a summary of agency roles and responsibilities (Chapter 9); and procedures for reviewing and updating the HPMP (Chapter 10).

Appendices to this HPMP include the original PA (Appendix A); the Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) (Appendix B); a research design for the evaluation of cultural resources and the recovery of scientific data (Appendix C); an impacts analysis of sites within areas of direct project impacts (Appendix D); field and laboratory methods proposed for site evaluation testing, treatment and construction monitoring (Appendix E); San Diego Archaeological Center (SDAC) curation agreement (Appendix F); Native American Graves Protection and Repatriation Act (NAGPRA) Regulations (Appendix G); and the resumes of the preparers of this HPMP (Appendix H).

2. CULTURAL CONTEXT AND ASSOCIATED RESOURCE TYPES

This chapter reviews the prehistoric, ethnohistoric, and historic settings of the project area. Definitions of pertinent resource types are also included. The discussion that follows is a summary describing how pertinent investigations in the general region have contributed to the current constructions of past cultural history, and is not intended to be an exhaustive account of all research conducted in the area.

PREHISTORIC BACKGROUND

Colorado Desert culture history was established based on the pioneering work of Malcolm Rogers (1939, 1945, 1966). Several overviews and syntheses have subsequently been published, with each succeeding effort drawing on the previous studies and adding new data and interpretations (Crabtree 1981; Schaefer 1994; Schaefer and Laylander 2007; Warren 1984; Weide and Barker 1974). Rogers (1929, 1945) also established the basic cultural sequence for San Diego County, which is largely based on coastal sites but also includes information from the peninsular ranges. Subsequent scholars have refined it by subdividing cultures, combining cultures, or renaming the sequence. The most enduring local culture historical classifications are those generated by Rogers (1945) combined with a synthetic treatment by Wallace (1955) that integrates San Diego County with other portions of the southern California coast.

Archaeological investigations in southern California have demonstrated that a diverse range of human occupation extended over the past 12,000 to 10,000 years, until the time of contact with Europeans (Byrd and Raab 2007; Erlandson and Colten 1991; Jones 1991, 1992; Moratto 1984). The prehistory of the Colorado Desert and coastal San Diego can be divided into three temporal periods: Paleoindian, Archaic, and Late Prehistoric.

Paleoindian Period

Colorado Desert

The Paleoindian period of the Colorado Desert is typically referred to as the San Dieguito complex. Rogers defined the San Dieguito complex based on sites in coastal San Diego County, but soon extended it to the Colorado and Sonoran deserts (Rogers 1929, 1939, 1966). He suggested the existence of three phases of the San Dieguito complex in the Central Aspect (that is, the area of the Colorado and Mojave deserts and the western Great Basin). Each phase is characterized by the addition of new and more sophisticated tool types to the existing tool kit. The type-site of the San Dieguito Complex is the C. W. Harris site (SDI-149) in west-central San Diego County, originally investigated by Rogers and later by Warren (1967).

The lithic technology of the San Dieguito complex was based on primary and secondary percussion flaking of cores and flakes. According to Rogers, San Dieguito Phase I and II tools include bifacially and unifacially reduced choppers and chopping tools, concave-edged scrapers (spokeshaves), bilaterally notched pebbles, and scraper planes. Also appearing in the San

Dieguito Phase II are finely made blades, smaller bifacial points, and a larger variety of scraper and chopper types. The San Dieguito Phase III tool kit is appreciably more diverse with the introduction of fine pressure flaking. Tools include pressure-flaked blades, leaf-shaped projectile points, scraper planes, plano-convex scrapers, crescents (amulets), and elongated bifacial knives (Rogers 1939, 1958, 1966; Warren and True 1961; Warren 1967).

Because most desert sites are surface manifestations and lack well-established chronological indicators, it has been difficult to substantiate the validity of Rogers' phase designations as temporal indicators; that is, chronologically successive changes in the tool kit of a long-lived culture. Some of the variation may have developed contemporaneously in response to different resource contexts or cultural circumstances, or it may simply reflect sampling error. Excavations at the C. W. Harris site by Warren (1967) also failed to confirm Rogers' original observations regarding a stratigraphic separation between San Dieguito II and III assemblages (see discussion below). Rogers (1966:39) proposed different settlement patterns for each phase, but Vaughan (1982:6-11) argued that these distinctions were inadequately defined and inconsistently applied. For these reasons, phase distinctions are difficult to determine for the San Dieguito complex. For now, the complex may be better considered as a single archaeological and cultural entity.

The San Dieguito complex appears to represent a hunter-gatherer adaptation based on small mobile bands exploiting small and large game and collecting seasonally available wild plants. The scarcity of milling stones has been viewed as reflecting a lack of hard nuts and seeds in the diet, and as a cultural marker separating the San Dieguito complex from the later patterns (Moratto 1984; Rogers 1966; Warren 1967). On the other hand, portable manos and metates are now being increasingly recognized at coastal sites that are radiocarbon dated in excess of 8000 B.P. For the Colorado Desert, Pendleton (1986:68-74) noted that most ethnographically documented pounding equipment for processing hard seeds, mesquite, and screwbeans was made of wood and would not normally be preserved in the archaeological record.

Site distributions also suggest some basic elements of San Dieguito culture settlement patterns. Sites are sometimes located in flat areas but are particularly likely to occur on mesas and terraces overlooking the larger washes. Where lakes were present, sites are located around the edges of the shoreline. These are areas where a variety of plant and animal resources could be located and where water would at least be seasonally available. It should also be noted, however, that these were locations where relatively old sites are most likely to be preserved, exposed, and encountered.

San Diego Coastal and Mountain Regions

The Paleoindian period in coastal San Diego County is considered to have emerged during the terminal Pleistocene and to have continued into the early Holocene, beginning approximately 10,000 B.P. and ending sometime between 8500 and 7500 B.P. (Byrd and Raab 2007; Moratto 1984; Warren et al. 1993). Elsewhere in the southwestern United States, the Paleoindian period begins with the Clovis tradition. The Clovis tradition, which began in the end of the Pleistocene around 11,200 B.P., was a widespread phenomenon throughout North America and is noted for its distinctive fluted points (Meltzer 1993). Although no Clovis sites have been documented in the coastal region, isolated fluted points have occasionally been recovered, which indicates the potential for discovering terminal Pleistocene occupation.

Archaeologists have used a variety of terms over the years for Paleoindian assemblages in the southern California region. Malcolm Rogers, the first to provide a chronological sequence of archaeological assemblages of the region, introduced and then discarded the terms Scaper-Maker, Malpais, and Playa to label early lithic industries of the region [see Warren (1967) for a more comprehensive review]. Rogers (1939, 1945) coined the term San Dieguito (see above) to refer to the earliest artifact assemblages in San Diego County, and for many it remains a viable concept. Rogers' (1929) use of the term developed out of his work in which he distinguished several lithic scatter sites situated on the San Dieguito Plateau of San Diego County. These San Dieguito sites were initially termed the Scaper-Makers. Key attributes of the San Dieguito sites included distinct scrapers and scraper planes, bifacial knives, rare crescentics, and occasional hand stones and milling stones. These sites were situated on terraces and ridge tops, lacked subsurface material and midden, and were interpreted as evidence of a hunting-focused culture (Meighan 1954; Moriarty 1966; Rogers 1939, 1945; True 1958, 1966, 1970; Warren 1966, 1967, 1987; Warren and True 1961; Warren et al. 1961).

The discovery and subsequent excavation of the C. W. Harris site provided the first stratigraphic evidence to place the San Dieguito in the temporal sequence (Rogers 1938). This multiphase site was exposed in an alluvial cut along the San Dieguito River, and trench excavations revealed San Dieguito and Late Prehistoric occupation episodes. Based on his more extensive research in the southern California deserts, Rogers (1938, 1939) considered the site to be a San Dieguito II or III occupation, a late Paleoindian campsite. Flaked lithic tools such as scrapers and scraper planes, large bifaces, and projectile points characterized the artifact assemblage.

Additional fieldwork was carried out at the Harris site from 1958 to 1967 (Warren 1966, 1967; Warren and True 1961). This research and the publication of Rogers' fieldwork provided the stratigraphic and analytical basis for initially defining the San Dieguito as a Paleoindian hunting culture. Notable aspects of these studies were the absence of ground stone artifacts, stratigraphic superposition below a La Jolla occupation, and radiocarbon dates that placed the initial site occupation at about 9000 B.P. and ending between about 8500 and 7600 B.P. (Warren 1967). The absence of ground stone was considered an important distinction between San Dieguito and subsequent Archaic occupation (Warren 1967) although as previously mentioned, they are increasingly recognized as a minor part of these early assemblages.

Archaic Period

Colorado Desert

The Pinto and Amargosa complexes are regional specializations characterizing the Archaic period in the Colorado Desert. Pinto and Amargosa sites have been identified more frequently in the Great Basin, Mojave Desert, and the Sonoran Desert east of the Colorado River than in the Colorado Desert. Few Pinto or Amargosa (Elko series) projectile points have been found on the desert pavements in the Colorado Desert, although with increasing numbers of investigations the number of points has increased. It has been suggested that environments in the California deserts were unstable during the Archaic, particularly during the so-called Altithermal between 7000 and 4000 B.P., and that environmental deterioration forced these hunter-gatherers into more hospitable regions (Crabtree 1981; Schaefer 1994; Schaefer and Laylander 2007; Weide and

Barker 1974). The limited sensitivity and chronological resolution of available paleoenvironmental data make it difficult to confirm such drastic conditions. If a significant stand of Lake Cahuilla existed at the time, it would have mitigated the constraints on human occupation in the project region.

Some late Archaic sites are known in the Colorado Desert, indicating occupations along the boundary between the low desert and the Peninsular Ranges and at relatively favored habitats. The most substantial of these is Indian Hill Rockshelter in Anza-Borrego Desert State Park, where 1.5 m of deposit was excavated below a Late Prehistoric component (McDonald 1992). Most significant were 11 rock-lined cache pits and numerous hearths. These are indicative of either a residential base or temporary camp in which food storage was integral to settlement and subsistence for these hunter-gatherers. Numerous Elko-Eared dart points were also recovered from the Indian Hill site, as well as flaked and ground stone tools and three inhumations, one of which was radiocarbon dated to 4070 ±100 B.P. Two similar rock-lined pits with an accompanying late Archaic assemblage were excavated at a small rockshelter in Tahquitz Canyon near Palm Springs (Bean et al. 1995). The small number of artifacts suggested strategic storage of food and seed processing equipment that was used by small mobile groups. Several important late Archaic sites have recently been documented in the northern Coachella Valley (Love and Dahdul 2003). Deeply buried midden deposits with clay-lined features and living surfaces, cremations, hearths, and a rockshelter have been found in association with calibrated radiocarbon dates ranging between about 3000 B.P. and 1300 B.P. Radiocarbon dates of almost 3000 B.P. and associated bird and fish bone confirm an Archaic era stand of Lake Cahuilla, as well as interlacustral phases.

Cultural materials from the Archaic have been found at several other sites. A recent inventory at the Salton Sea Test Base produced a cluster of early projectile points, including Lake Mojave, Pinto/Gatecliff, and Elko forms, as well as two San Dieguito eccentric crescentics, scattered among protohistoric sites on the bed of Lake Cahuilla 30 m below sea level (Apple et al. 1997; Wahoff 1999). If these points were *in situ*, as the investigators suggested, presumably they must have escaped burial by lake sediments. Alternatively, they may have been collected from elsewhere for reuse by protohistoric occupants. A very worn, large Elko-like side-notched projectile was documented at the Half Mano Site during the Ocotillo Wells survey. Individual Elko points were also found at the Pot Drop and Mesquite sites, leading to the speculation that either the points were curated at these Lake Cahuilla sites or that this dart point type continued in use much later than generally thought (Hines 2004:157). Direct evidence of an Archaic occupation comes from the Truckhaven flexed burial (IMP-109), dated to 5790 ±250 B.P. (Taylor et al. 1985; Warren 1984:404). More substantial Archaic period occupations may remain to be discovered in deeply buried alluvial situations.

In the scenario of late Archaic occupation that is therefore emerging, mobile hunter-gatherer bands with atlatls for hunting and milling stones for seed and nut processing operated out of a small number of base camps situated in optimal areas on the boundaries of the Salton Trough and, when opportunity arose, on the shoreline of Lake Cahuilla. These Archaic sites may be viewed as cultural precursors of the Late Prehistoric period.

San Diego Coastal and Mountain Region

In the San Diego coastal region, the Archaic period extends from 7500 B.P. (possibly as early as 8500 B.P.) to sometime between 1300 and 800 B.P. (Moratto 1984; Rogers 1966; Warren et al. 1993; see discussion above). Some researchers have divided this period in various ways, including early, middle, and late periods, and differentiating between coastal and inland occupations. Archaic assemblages along the coast are generally highly visible in the archaeological record due to relatively large quantities of ground stone items, flaked cobble tools and cores, and in certain areas, massive quantities of marine shell (Gallegos 1985, 1987, 1992; Meighan 1954; Moriarty 1966; Rogers 1939, 1945; True 1958, 1966, 1970; Warren 1966, 1967, 1987; Warren and True 1961; Warren et al. 1961). The relatively high profile of Archaic assemblages has allowed for more research and theory-building on human behavior than previous periods. Despite the seemingly basic appearance of Archaic assemblages, interpretations of aboriginal behavior from Archaic sites are fairly diverse. Historically, a major distinction has been made between shell midden Archaic sites near the coast and non-shell midden Archaic sites further inland. Coastal Archaic sites (often termed the La Jolla complex) have been characterized by shell middens, flaked cobble tools, basin milling stones, hand stones, and flexed burials, while inland sites in northern San Diego County are often termed the Pauma complex (True 1958), lacking the shell middens and burials. Alternative terminology includes Wallace's (1955) Milling Stone horizon and Warren's (1968) Encinitas tradition. This time period was considered to have differed from the prior San Dieguito adaptation by being more focused on gathering activities that emphasized plant resources, marine mollusks, and occasionally catching fish.

Rogers (1945:170-171) considered the Paleoindian (San Dieguito) and Archaic (La Jolla) occupations to represent different populations, a view also shared by Warren (1968). However, later research considered the potential for cultural continuity to explain the transition at coastal sites (Kaldenberg 1982; Moriarty 1967). As discussed for the Paleoindian/Archaic Transition period, some alternative views consider early Archaic and Paleoindian sites to be contemporaneous expressions of a single settlement system (Bull 1987; Gallegos 1987), or that the early Archaic pattern represents one of the earliest adaptations specifically suited to a southern California environment (Hale 2001). The latter implies that the Harris Site, with its well-dated San Dieguito component (see Warren 1968), might not represent a San Dieguito pattern at all, but rather an anomaly.

Initially, Rogers (1929) noted that archaeological sites of the Shell-Midden people (i.e., La Jolla; see below) were concentrated along major drainages and lagoons, extending up to four miles inland. The largest areal spread of such sites away from the major drainages occurred between Escondido and Agua Hedionda creeks. Shell midden sites were characterized by massive quantities of shellfish, along with hand stones and milling stones, hammerstones, and split cobbles. Rogers (1945:171) later coined the term "La Jolla culture" to refer to these early shell midden sites, and distinguished two phases (La Jolla I and II) within a continuous occupation based on stratigraphic observations. The early phase was characterized by basin milling stones, unshaped hand stones, simple stone cobble tools, cortical flake tools, and inhumations without grave goods. The later phase included greater frequencies of ground stone and flaked artifacts, increased manufacturing sophistication, and inhumations interred in

cemetery areas with grave goods (e.g., shell beads, stone digging-weights), and inverted milling stones over burials.

Subsequent to Rogers' work, later investigations at coastal Archaic shell middens provided additional data along with the analytical basis to reexamine these assemblages (Crabtree et al. 1963; Moriarty et al. 1959; Shumway et al. 1961; Warren et al. 1961). With the introduction of radiocarbon dating, a series of Archaic coastal shell midden sites was examined and produced radiocarbon dates from 9000 to 3000 B.P. As a result of these studies, several proposals were offered regarding temporal change during the coastal Archaic. These interpretations were used to either add or remove archaeological subphases, and to modify the temporal distribution of various archaeological traits (Davis 1976; Harding 1951; Moriarty 1966; Warren 1964).

More recently, the reconstruction of San Diego County coastal adaptations has been, at its essence, the argument originally put forth by Warren (1964). In particular, the prehistory of one area, Batiquitos Lagoon in the central portion of the county, has essentially served as the type locality for the littoral prehistory of San Diego County (Gallegos 1985, 1987; Warren 1964; Warren and Pavesic 1963; Warren et al. 1961). Although refinements have been made by Warren and other scholars based primarily on new excavations (Christensen 1992; Gallegos 1987, 1992; Gallegos and Kyle 1988; Warren 1968; Warren et al. 1993), the broad perception of coastal adaptations for the last 7,000 years has remained largely unchanged.

The normative view of the coastal Archaic is that exploitation of the San Diego County littoral zone began early in the Holocene and was clustered around resource-rich bays and estuaries (Warren 1964, 1968). Shellfish have been interpreted as a dietary staple, although plant resources (nuts and grasses) were also an important dietary component. Major changes in human adaptations were considered to have occurred when lagoon silting became so extensive as to cause a decline in associated shellfish populations. This occurred between 4000 and 3000 B.P. at Batiquitos Lagoon and possibly later at other larger lagoons. The decline in littoral shellfish resources, Torrey pine nuts, and drinking water is thought to have drastically affected human populations, forcing a major depopulation of the coastal zone. Populations shifted inland to a river valley orientation and intensified exploitation of terrestrial small game and plant resources (e.g., acorns), which was originally proposed by Rogers (1929:467). The coast was either abandoned or subject to only seasonal, often short-term occupation. The principal, well-recognized exception to this abandonment was the southern third of the coastline associated with Mission and San Diego bays where occupation continued as before unaffected by lagoon silting (but see Christenson 1992).

Currently, inland Archaic adaptations in San Diego County are not as well understood, primarily because of the lack of well-dated archaeological deposits. This has probably led to a biased perspective that Archaic occupation is predominately a coastal phenomenon, partly due to the high visibility of shell remains and datable materials at coastal archaeological sites. Historically, our understanding of the inland Archaic is primarily based on a series of 25 sites that predate the Late Prehistoric period in inland northern San Diego County, sites that were termed the Pauma complex by True (1958). These sites were set on hills overlooking drainages, and associated with Holocene sediments. Together, they were considered distinct from coastal Archaic sites, given their surficial nature, predictable lack of shellfish, and perceived differences in the lithic

assemblage. Given the predominance of grinding stones in the tool assemblages, the economy at these sites was thought to be oriented toward seed-gathering. While many similarities to coastal Archaic adaptations were recognized, milling stones were claimed to be more frequent in the Pauma complex sites, while scraping, planing, and hammer/chopper tools were thought to be more common along the coast (True and Beemer 1982). For example, excavations at the Pankey site in the Pauma Valley found an inverted basin milling stone above a burial and low frequencies of shellfish remains (True and Pankey 1985). As a result of the work at the Pankey site, True and Pankey (1985) hypothesized that the Pauma complex represents an inland, possibly seasonal, expression of the coastal Archaic (La Jolla). Since Pauma sites are poorly understood in terms of a temporal framework, interpretations of broader Archaic settlement and subsistence practices should currently be viewed as problematic.

Perhaps this is why Warren (1968) originally collapsed the inland (Pauma) and coastal (La Jolla) Archaic into the Encinitas Tradition. Warren (1968) viewed the Encinitas Tradition as a lifeway generally centered around a gathering and processing economy, whether inland, along drainages, or along the coast, and occupying large, centralized habitation sites. These large sites have also been interpreted as sedentary villages (see Hale 2001). An alternative explanation, however, is that large Archaic sites are simply reoccupied regularly for similar purposes over a long period of time (Hale 2001). In this interpretation, highly visible ground and battered stone implements that dominated the assemblages were subject to situational use and discard, creating large assemblages spread out over an extended area. Furthermore, in this view, large Archaic sites were components of a highly flexible and generalized economy, able to accommodate exploitation of resources from inland to coastal environments.

Late Prehistoric Period

Colorado Desert

Sites dating to the Late Prehistoric period are more numerous than any other in the Colorado Desert region. This period has conventionally been divided into four phases, including a pre-ceramic transitional phase from 1500 to 1200 B.P. Major innovations during this time include the introduction of cremations, bow and arrow technology, pottery production, and floodplain agriculture (Rogers 1945).

Malcolm Rogers established the first systematic culture history and artifact typologies for the Colorado Desert in California. His investigations of Yuman ceramics and culture history (Rogers 1936, 1945) remain the foundation of current archaeological research in the area. He designated three phases of Late Prehistoric ceramics-based technology in the Colorado Desert as Yuman I, II, and III. Rogers' scheme was closely tied to the presumed chronology of Lake Cahuilla, which he believed to have been absent before about A.D. 1000 (Yuman I), present between about A.D. 1000 and 1500 (Yuman II), and absent once again post-A.D. 1500 (Yuman III). Subsequent studies have confirmed a more complex lacustrine chronology, with stands of the lake occurring prior to A.D. 1000 and as late as A.D. 1650, alternating with non-lacustrine intervals during the Yuman II period (Laylander 1997ab; Love and Dahdul 2003; Schaefer 1994; Schaefer and Laylander 2007; Waters 1982; Wilke 1978). In applying the term "Yuman," Rogers also implied identification between the archaeological complex and the Yuman linguistic family. Some

subsequent investigators have rejected this identification, and the terms “Patayan” or “Hakatayan” have often been preferred for essentially the same archaeological pattern.

Key Late Prehistoric innovations, including ceramics and agriculture, seem to have appeared earliest in the lower Colorado River and probably represent cultural diffusion from southern Arizona or Sonora (McGuire and Schiffer 1982; Rogers 1945; Schroeder 1975, 1979). West of the Colorado River, ceramics first appear around 1000 B.P., with sites dating before this time in the Coachella Valley lacking ceramics (Love and Dahdul 2003). Precise dating of the introduction of agriculture during the Late Prehistoric or Ethnohistoric period is uncertain.

Within the Late Prehistoric period, desert peoples of this region developed a diversified resource procurement pattern emphasizing a collector pattern of residential bases and logistically organized temporary camps that were often scheduled to fit the ripening seasons of staple plant resources. Mobility was an important element of this pattern, with increased travel between the Colorado River and Lake Cahuilla. A diversity of sites and assemblages associated with Lake Cahuilla indicate considerable variability in prehistoric and protohistoric social and ecological adaptations related to the lake, including house pits associated with fish camps (Wilke 1978). Fish traps at these sites range from single specimens to long lines suggestive of cooperative fishing ventures. Some excavated house pits have exhibited substantial midden deposits and diverse artifact types suggestive of seasonal temporary camps, while others have sparse artifact assemblages suggestive of brief fishing expeditions. Faunal assemblages vary from primarily fish or migratory waterfowl to more diverse assemblages (including rabbits and large mammals). This variability in site typology and assemblage content has yet to be correlated in a systematic manner with possible variables such as stages in the recession of Lake Cahuilla, localized geography and paleoenvironments, ethnicity, and/or other factors.

Long-range travel to special resource collecting zones and ceremonial locales, trading expeditions, and possibly warfare are reflected by the numerous trail systems throughout the Colorado Desert. Pot drops, trailside shrines, and other evidence of transitory activities are associated with the trails (McCarthy 1993). Trade and travel is also seen in the distribution of localized resources such as Obsidian Butte obsidian, wonderstone from the south end of the Santa Rosa Mountains, soapstone from Table Mountain and the Cuyamaca Mountains, marine shell, and nonlocal ceramic types. The Elmore Site near Kane Springs, for example, contained evidence of *Olivella* shell bead manufacturing and other shell processing, trade, and craft specialization (Laylander 1997ab; Rosen 1995). Evidence of sandstone metate manufacture has also been documented at several sites in the Superstition Mountain area where outcrops of Imperial Formation sandstone afforded a ready local material for milling equipment (Schaefer 1988). Arrowmaking workshops have also been identified in the same area near Superstition Mountain as well as on “Arrowmaker Ridge” in Dulzura.

San Diego Coastal and Mountain Regions

Between about 2000 and 1000 B.P., a Late Prehistoric non-ceramic Yuman horizon, presumed to be ancestral to the Kumeyaay occupation, appears to have emerged at certain La Jolla sites along the Pacific coast. Malcolm Rogers (1945:173-174) first postulated a non-ceramic Yuman pattern in the Mojave Desert with small triangular arrowheads, shallow-basined metates, unshaped manos, round portable mortars, triangular knives, bone awls, and cremation burials. A non-

ceramic Yuman assemblage was documented at the Oro Grande site on the Mojave River near Victorville (Rector et al. 1983). A typical Late Prehistoric assemblage was found there, although no Desert Side-notched points or ceramics were discovered. Radiocarbon dates ranged between 1200 and 700 B.P., placing it within the Saratoga Spring period (1500-800 B.P.) of the Mojave Desert sequence (Warren and Crabtree 1986:191). The nature of this cultural change and its specific dates in San Diego County remains uncertain, leading to temporal gaps and inconsistencies in several of the culture histories of the area (McDonald et al. 1993).

Moriarty (1966) used radiocarbon data from the stratified Spindrift site to chronicle changes in artifact assemblages through time in San Diego County during the Late Prehistoric period. He noted an increased use of exotic cryptocrystalline silicates occurring around 3000 B.P., and the diversification of pressure-flaked lithic artifacts. Cremations replaced inhumation burials around 2500 B.P. Moriarty suggested that within this time frame and by 2000 B.P., a pre-ceramic Yuman culture had come from the Colorado River area and merged with the local La Jolla culture. These dates and the stratigraphic integrity of the Spindrift site remain questionable, however, and it appears that many elements of a late Archaic assemblage remained until 1300 B.P. (Warren et al. 1993). No dates have yet been provided for the introduction of Cottonwood Triangular and Desert Side-notched projectile points that signal the shift from atlatl and dart to bow-and-arrow hunting technology.

Non-ceramic assemblages with Cottonwood Triangular points have been observed in stratified multicomponent sites on the San Diego River, but efforts to verify their chronological validity with appropriate early dates have been thwarted by less than ideal stratigraphic integrity (Carrico et al. 1994; McDonald et al. 1994). However, these sites did demonstrate a shift in obsidian sources from the Coso Range of the Mojave Desert during the Archaic period to Obsidian Butte in the Colorado Desert during the Late Prehistoric period.

The fully developed Late Prehistoric period in San Diego County (1000-300 B.P.) is characterized by sites with small pressure-flaked projectile points, cremation burials, the introduction of ceramics, and an emphasis on inland plant food collection, processing, and storage, especially of acorns. Inland semi-sedentary villages were established along major waterways, and montane areas were seasonally occupied to exploit acorns and pinyon nuts, resulting in permanent milling stations on bedrock outcrops (May 1975; True 1970). Mortars for acorn processing increased in frequency relative to seed-grinding basins. Several coastal or near-coastal village sites were occupied and maritime resources continued to contribute to the native diet and lifeways.

Although the Yuman populations exploited the same ecological zones as the La Jolla, each relied on slightly different subsistence and settlement modes. In both economies, however, gathered seed foods were important. Finally, food storage technology enhanced by baskets and/or ceramic vessels could have provided a means to acquire food surplus.

ETHNOGRAPHY

The APE is within the traditional aboriginal territory of the Yuman-speaking Diegueño or Kumeyaay (Ipai-Tipai). These include the Kumeyaay, the Kamia, and groups living in northern Baja California (Meigs 1939). In general, the Kumeyaay ranged from the coast through the Peninsular Ranges, and the Kamia resided in Imperial Valley and on the Colorado River during historic times (Luomala 1978). Animal resources for the Kumeyaay consisted mostly of small game such as rabbits (*Sylvilagus* spp.), hares (*Lepus californicus*), woodrats (*Neotoma* spp.), lizards, some snakes, and grasshoppers (Gifford 1931:14; Shipek 1991:32; Spier 1923:335-336). Larger game, mostly mule deer (*Odocoileus hemionus*) and possibly pronghorn (*Antilocapra americana*, now locally extinct) were also hunted.

The Kamia or Desert Kumeyaay occupied areas along the New and Alamo rivers, as well as springs and wells in Imperial Valley. During ethnohistoric times, the Kamia were associated with the Quechan-Mohave alliance in opposition to the Cocopah and Halchidhoma. They especially maintained good relations with the Quechan at the confluence of the Colorado and Gila rivers and were permitted a farming rancheria at the large Quechan settlement of *Xuksil* (“sandstone” in the Quechan language), located a few miles south of the modern town of Algodones in Baja California. The people of this settlement were collectively known as the *Kavely cadom*, or “south dwellers”, and were known to the early Spanish expeditions as the rancherias of San Pablo, whose leader was named Captain Pablo. They were estimated to number 800 people when the Anza expedition passed through in 1774 (Bolton 1930(II):51; Forde 1931:101).

The Kamia practiced a mixed economy of horticulture, hunting, and gathering. Mesquite (*Prosopis pubescens*) was the most important wild staple crop, as was true for other groups in the Colorado Desert. Acorns were obtained either directly by travel to the Peninsular Ranges or through trade with the western Kumeyaay in exchange for cultigens, especially watermelons. The Kamia procured baked and dried agave cakes from the Kumeyaay, but otherwise did not participate in the early spring agave harvest. Tule pollen and roots were gathered from sloughs, one favorite spot being Seven Wells on the east-west portion of the Alamo River south of the international border. Gifford (1931:24) reported another marsh plant called *wāró*. The seed capsules were pulled off by hand over a ceramic pot and the capsules were rubbed until the seeds were freed. The pods were winnowed away, using a ceramic dish. The seeds were then ground on a metate and eaten dry. Either wooden mortars or stone metates were used on various wild seeds, which were then cooked. Gifford’s (1931:27) consultants apparently had no knowledge of the widespread practice of parching seeds prior to grinding. Among the seed resources were saltbush (*Atriplex* sp.), yerba mansa (*Anemopsis californica*), and sedge (*Cyperus erythrorhizos*). As with Colorado River Yumans, fish was a principal protein source, supplemented by rabbit and large mammals.

Descendants of the Late Prehistoric people, the ethnohistoric Ipai-Tipai/Kumeyaay, had a society organized around patrilineal residence groups, with hereditary positions of political and ceremonial importance (Luomala 1978). Permanent villages and campsites were located in oak woodland valleys and catchment basins in the coastal zone, the western foothills, the Peninsular Range and, to a lesser extent, in the desert further east. Resource extraction and processing sites were clustered in an optimal manner around the settlements. Temporary camps and other

gathering sites were located in more distant areas. Seasonal movements were within communally owned village territories. These movements were directly related to the changing availability of critical resources.

Kumeyaay culture and society began to change dramatically with the advent of missionization and displacement by Hispanic populations during the late eighteenth and early nineteenth centuries. The effects of missionization, along with the introduction of Old World diseases, greatly reduced the native population of southern California (Cook 1976). By the early 1820s, California was under Mexican rule. The establishment of numerous ranchos under the Mexican land grant program further disrupted the way of life of the native inhabitants.

In 1834, California's missions were secularized (Luomala 1978). Indians were given half the mission lands to use, to make them Mexican farmers and colonists, and were to work on community projects. As quickly as they received the lands, they typically lost them. Secular administrators functioned like feudal lords and ignored their responsibilities to the Indians. As a result, Ipais and Tipais became serfs, trespassers on ancestral lands, rebels or mountain fugitives. Indians with hunting-gathering tracts or new gardens planted with mission seeds that fell within any large land grant Mexico made to attract settlers met a similar fate. Fortunately, a few Mission Indians secured such land grants.

After the United States' conquest of California in 1846-1848, the region's Indians initially received little attention from the federal government (Luomala 1978). The U.S. Senate rejected treaties negotiated in 1851-1852 with California Indians groups. European-American pressures on Kumeyaay lands intensified as California boomed after the Civil War, and after gold was discovered in Julian in 1870. Diseases such as smallpox and measles continued to take their toll on native people during this period. Often, explorers and settlers interpreted seasonally occupied villages as permanently abandoned when they encountered them off-season, burning down structures and confiscating material culture. One of the more egregious situations occurred when the Jacum band left Jacumba after hostilities broke out with local ranchers. Efforts by the Indians to secure legal titles or have Mexican titles acknowledged failed. White squatting was hastened by non-Indian attempts to set aside land for the Indians in places like fertile San Pasqual.

Legal reservations began to set aside portions of eastern San Diego County for Native groups during the Grant and Hayes administrations, and were subsequently expanded during the following decades. Reservations in the vicinity of the Sunrise project include Capitan Grande (established in 1875), Campo (1893), La Posta (1893), Manzanita (1893), Ewiiapaayp (Cyuapaip, 1983), Barona (1932), and Viejas (Baron Long, 1939) (Shipek 1978). The newly established reservations were inadequate to sustain either the aboriginal economy or, more commonly, a mixture of aboriginal and new-style economies. By the 1880s, the Ipai-Tipai were living in dire conditions. Overgrazing and diversion of water, including underground resources, had destroyed grassland and woodland on the reservations. Grazing on coastal grasslands, source of food seeds for the Indians, was a key factor in Indian attacks on the old mission. The removal of all White settlers from reservations and patenting of lands to Indian residents was recommended in 1883 by Helen Hunt Jackson, a special federal agent who investigated the situation. However, no action resulted except to authorize the Indian Bureau to remove squatters, with military aid, from reservation lands. By the 1890s, many Indian men and women,

industrious but poorly paid, labored on ranches, in mines, and in towns, but returned to the reservations for fiestas and family events. Coastal groups, first and hardest hit by the region's changes, lived in San Diego's slums, camped in nearby hills, or drifted down to less populated lands in Baja California (Luomala 1978).

Into the twenty-first century, local Native Americans continued to maintain elements of their traditional culture, as well as playing a role in the larger community. Recent reservation community historical themes revolve around struggles for enhanced tribal sovereignty, social justice, economic independence, and prosperity, as well as balancing traditional values with modernity (Luomala 1978; Shipek 1987). In particular, the development of Indian casinos has revitalized several groups and expanded their role in the economy and society that surrounds their reservation lands.

HISTORICAL BACKGROUND

European contact with coastal southern California began as early as 1542, with the voyage of Juan Rodríguez Cabrillo. However, intensive interactions and contacts with interior areas only came after the establishment of the Spanish presidio and mission of San Diego in 1769. During the Spanish period, exploratory probes into eastern San Diego County were made by Pedro Fagés and others, and the southern immigrant trail came into use by colonists from Sonora. Thus, the mission culture may have begun to impact Aboriginal culture on the western extreme of the present APE.

With the achievement of Mexico's independence from Spain in 1821, California's administrators began to shift their focus away from the Franciscan mission system and toward Hispanic lay settlement of the province. Avenues for foreign trade were opened, and private land grants became more numerous and extended farther inland from the coast.

During the Mexican-American War of 1846-1848, California was occupied and subsequently annexed by the United States. Land ownership was complicated by this transition. The Treaty of Guadalupe-Hidalgo, signed in February 1848, obligated the United States government to recognize legitimate land claims in Alta California. While Mexicans initially made up the majority of the population, the Gold Rush after 1849 stimulated large-scale immigration into the region. With large land holdings and a strong cattle industry, many "*gente de rason*" or upper class nevertheless found themselves overextended when the northern California miners' demand for meat dwindled. In order to pay their taxes and bills, some were forced to offer up their lands at public auction (Garcia 1975:22). Many small farmers had difficulty maneuvering through the process and acquiring land (Garcia 1975:16). Settlers increasingly squatted on land that belonged to Mexicans, citing their preemption rights, which was the tradition that squatters had the first opportunity to buy the unimproved, unclaimed land for a fair price before auction (Garcia 1975:22). Squatters increasingly challenged the validity of Spanish-Mexican claims through the Board of Land Commissioners created by the California Land Claim Act of 1851 (Garcia 1975:22-23). Most Californios did not retain their original land holdings by 1860, including Santiago Arguello, who was granted the former Mission San Diego land in 1846 and eventually lost \$24,000 in property (Garcia 1975:24).

By 1860, most of the land in San Diego was unimproved farmland that included ranches (Garcia 1975:15). Settlement of the area primarily occurred through homesteading authorized by the Homestead Act during the Civil War by Abraham Lincoln on May 20, 1862. The Act offered 160 acres to settlers for a nominal filing fee in return for five years of residency and cultivation. At the end of five years, a settler would receive a land patent if the terms were met and the examiner was satisfied with the results (Robinson 1948:168-169). Another option for land settlement was the Timber Culture Act, passed on March 13, 1873. This act required a 10-year cultivation period of healthy trees, a requirement that was later amended to reduce the necessary time and acreage. Some speculators and ranchers used this law as a way to obtain land for purposes other than what the patent stated. In the 1870s and 1880s, small farming communities were quickly established throughout San Diego County as settlers took up homestead claims on government land or small holdings purchased from real estate developers.

The transcontinental railroad reached southern California in November 1885, resulting in an unprecedented real estate boom for the city and county of San Diego. Settlers poured into San Diego, lured by real estate promotions offering a salubrious climate, cheap land, and the potential to realize great profits in agriculture and real estate. The population of San Diego increased by 700 percent from a total population of 5,000 in 1885 to 40,000 in 1889 (Hector et al. 2004:18). Population continued to expand, irregularly but persistently, during the century that followed, approaching 2,000,000 by the year 2000. However, most of the growth was concentrated in the coastal areas and adjacent inland valleys, west of the present APE. Imperial County finally began to experience significant development during the first decade of the twentieth century, with the inauguration of an irrigation system tapping the waters of the Colorado River.

A variety of themes characterized the history of the APE and its vicinity during the twentieth century (Pryde 2004). Road and rail transportation routes were created or improved to link urban San Diego with regions of the country farther east. In the 1920s, Highway 80 served as the west-east connection between San Diego and Imperial Valley and Highway 101 provided a coastal route to Los Angeles and on to San Francisco. Construction of a new interstate freeway, Interstate 8, began in San Diego in 1958 connecting downtown with El Cajon and eventually Imperial County by June 1975. The new freeway alignment assumed much of Highway 80 with wider right-of-ways. Some segments of old Highway were merely by passed, such as portions of the Mountain Springs grade segment. Other sections of old highway 80 remain as main streets in El Cajon, Alpine, Pine Valley, and Jacumba with the road surface and width as remnants of the old U.S. 80 (Lortie 2001:6). Additionally, the San Diego & Arizona Eastern (a consolidated railroad line) passed through the Jacumba area from Carrizo Gorge in the Jacumba Mountains, connecting San Diego with Imperial County and Yuma, Arizona.

Limited amounts of development for farming and grazing occurred in the inland valleys. Mining in this portion of the Peninsular Range and in the adjacent Imperial County desert were generally small-scale and of limited economic importance, in contrast to locations farther north, for instance around Julian. Substantial areas were set aside for resource protection or recreational use, as portions of Cleveland National Forest and Anza-Borrego Desert State Park. Large blocks of land in both the Peninsular Range and the Colorado Desert were given wilderness designation.

DEFINITION OF RESOURCE TYPES

The use of a basic typological framework to characterize cultural resources helps in efficient management of the diverse resources present in the project area.

Prehistoric resource types within the project area include:

Habitation Site. These are relatively substantial deposits, typically including at least three different types of cultural evidence, such as flaked lithics, ground stone, ceramics, faunal remains, features, fire-affected rock (FAR), and midden. They are likely to represent overnight occupations by a social unit larger than an individual or a small task group, probably over an extended period or on repeated occasions.

Bedrock Milling Site. These are sites that consist primarily or exclusively of bedrock milling features (mortars, basins, and/or slicks). They are interpreted as work stations used to process materials, probably in most cases hard plant food resources such as seeds or acorns.

Lithic Scatter. These consist primarily or exclusively of flaked lithic materials, such as debitage, cores, and tools. They represent areas where stone tools were manufactured or reworked, ranging from heavily used workshops to flaking stations where activity was more casual and transient.

Ceramic Scatter. These consist primarily or exclusively of ceramic potsherds. They may range of potdrops, where pieces from a single vessel were discarded, to extensive, multiple-vessel scatters that may represent habitation, resource processing, or pottery manufacturing.

Artifact Scatter. These sites generally contain a combination of lithic, ceramic, and/or ground stone scatters, but do not contain additional debris such as faunal remains or FAR indicative of longer-term habitation.

Rock Feature. Rock rings, cleared circles, cairns, and roasting pits may occur in isolation from other remains, or they may be found as elements within other site types, such as habitation sites.

Trail. Segments of trails are most likely to be observable in the eastern extreme of the project area. They occur as linear areas within desert pavements that are largely cleared of larger rocks through repetitive trampling. Trails may be associated with other remains, such as potdrops or small lithic scatters, and they may cross more substantial habitation sites or work areas.

Isolate. Occurrences of one or two prehistoric artifacts within a 25-m² area are classified as isolates. As a rule, such remains do not require further consideration within the resource management process. Isolated artifacts do provide indications of the presence or intensity of prehistoric human presence in an area, nonetheless.

Historic-period sites are generally both functionally more diverse and more readily interpretable than most prehistoric sites. Among the types that occur in the study area are residential sites, refuse scatters, transportation routes and facilities, water facilities, areas of military activity, mining sites, and isolated historic-era artifacts. Remains that are not recognizably more than 50 years old are not normally treated as historic properties and are not recorded (36 CFR §60.4).

Historic built environment resources within the APE are addressed in a separate document that is in preparation by ASM (Ní Ghabhláin et al. 2010). The resources under consideration are buildings, structures, features such as walls or cairns, roads, and water control and storage constructions.

Another type of resource that may be present in the survey area is the traditional cultural property. A traditional cultural property is defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998). Examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

3. CULTURAL RESOURCES MANAGEMENT

OBJECTIVES

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings licensed or executed by the agency, on historic properties listed or eligible for listing in the NRHP, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (16 U.S.C. 470f). The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of Section 106 consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize, or resolve any adverse effects on historic properties.

The Section 106 process includes the following steps:

1. Make a good faith and reasonable effort to identify and document historic properties within the APE. This includes recording all resources greater than 50 years in age and applying the NRHP criteria to those resources that cannot be avoided.
2. Assess the effects of the proposed action on any historic properties.
3. Consult with the SHPO, Tribal Historic Preservation Officers (THPO), interested parties, and the ACHP on all phases of the project.
4. Treat impacts, as necessary.

MITIGATION REQUIREMENTS IN ACCORDANCE WITH EIR/EIS

Relationship between Section 106 PA and CEQA Mitigation Measures

As part of compliance with NEPA and CEQA, the BLM and CPUC prepared the FEIR/FEIS for the SRPL Project (Aspen Environmental Group, 2008) to identify the general alternative alignments, comparatively examined the relative effects of the alternatives on known historic properties, and identified CEQA mitigation measures that would reduce adverse effects to historic properties. This HPMP is being developed subsequent to the issuance of the BLM NEPA Record of Decision (ROD). Additionally, the execution of the PA as evidence that the BLM has afforded the ACHP the opportunity to comment (as required by Section 106 of the NHPA) mandates the preparation of a HPMP taking into account the CPUC Mitigation Monitoring Plan. This HPMP specifies how each task will be carried out, when it will be completed for each segment of the Undertaking, and provides sufficient flexibility to permit Notices-to-Proceed for segments of the Undertaking on a phased (tiered) basis. The CEQA cultural resource mitigation

measures for the alternative chosen (the Final Environmentally Superior Southern Route, FESSR) in the BLM ROD are incorporated into this HPMP below.

Mitigation Measures

Mitigation measures were developed as part of the EIR/EIS process to treat adverse effects to historic properties as per Section 106 and reduce significant impacts to historical resources as per CEQA. They are listed below according to the outline of “Table 10 Mitigation Measures and Applicant Proposed Measures – Cultural and Paleontological Resources” in the Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) for the Sunrise Powerlink Project (Aspen Environmental Group 2008). However, they are not sequential. The timing associated with each measure is explained below. One primary intent of this HPMP is to present the required mitigation measures for the project and the process of implementation regarding resources or for a group of resources identified thus far within the APE based on the Class III Inventory Report and the built environment resources report. The following section lists each mitigation measure and directs the reader to the appropriate section in this HPMP or other relevant documents which explain how each measure will be addressed in accordance with the Sunrise PA.

Mitigation Measure C-1a: Inventory and evaluate cultural resources in Final Area of Potential Effect (APE)

Mitigation Measure C-1a was carried out and reported on in Garcia-Herbst et al. (2010) and is discussed in Chapters 4 and 5 of this HPMP. It is applicable during the pre-construction phase.

Mitigation Measure C-1b: Avoid and protect potentially significant resources

Mitigation Measure C-1b is addressed in Chapter 4 of this HPMP in the section titled “Design Changes to Avoid Sites and Areas of Native American Concern”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-1c: Develop and implement Historic Properties Treatment Plan

Mitigation Measure C-1c is addressed in Chapter 6 of this HPMP. It is applicable during the pre-construction phase.

Mitigation Measure C-1d: Conduct data recovery to reduce adverse effects

Mitigation Measure C-1d is addressed in Chapter 6 of this HPMP in the section titled “Data Recovery to Reduce Adverse Effects”. It is applicable during the pre-construction, construction and post-construction phases.

Mitigation Measure C1-e: Monitor construction at known ESAs

Mitigation Measure C-1e is addressed in Chapter 8 of this HPMP in the section titled “Establish ESAs”. It is applicable during the construction phase.

Mitigation Measure C-1f: Train construction personnel

Mitigation Measure C-1f is addressed in Chapter 8 of this HPMP in the section titled “Train Construction Personnel”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-1g: Avoid and protect Old Highway 80 (P-37-024023)

Mitigation Measure C-1g is addressed in Chapter 5 of this HPMP in the section titled “Methods for Evaluation of Built Environment Resources” and in Chapter 6 in the section titled “Data Recovery to reduce Adverse Effects”, in the subsection “Built Environment Resources”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-2a: Properly treat human remains

Mitigation Measure C-2a is addressed in Chapter 8 of this HPMP in the section titled “Treatment of Human Remains”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-3a: Monitor construction in areas of high sensitivity for buried resources

Mitigation Measure C-3a is addressed in both Chapter 4 of this HPMP in the section titled “Buried Sites”, as well as in Chapter 8 of this HPMP in the section titled “Monitoring by Archaeologists and Native Americans”, under the subsection titled “At highly sensitive areas defined during the BST program”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-4a: Complete consultation with Native American and other Traditional Groups

Mitigation Measure C-4a is addressed in Chapter 4 of this HPMP in the section titled “Traditional Cultural Properties”. It is applicable during the preconstruction, construction and post-construction phases.

Mitigation Measure C-5a: Protect and monitor NRHP- and/or CRHR-eligible properties

Measures to protect and monitor known NRHP- and/or CRHR-eligible properties will be addressed in the manner set forth in Chapters 6 and 8 of this HPMP, and further defined in Site-Specific Treatment Plans as needed. Historic built-environment resources will be addressed in a separate treatment plan. The plan is in preparation and will govern how properties will be protected throughout the life of the project. It is applicable during the pre-construction, construction and post-construction phases.

Mitigation Measure C-6a: Reduce adverse visual intrusions to historic built environment properties

Mitigation Measure C-6a is addressed in Chapter 5 of this HPMP in the section titled “Methods for Evaluation of Built Environment Resources” and in Chapter 6 in the section titled “Data Recovery to Reduce Adverse Effects”, in the subsection “Built Environment Resources”. It is applicable during the pre-construction and construction phases.

Mitigation Measure C-6e: Reduce adverse visual intrusions to portions of Old Highway 80

Mitigation Measure C-1g is addressed in Chapter 5 of this HPMP in the section titled “Methods for Evaluation of Built Environment Resources” and in Chapter 6 in the section titled “Data Recovery to reduce Adverse Effects”, in the subsection “Built Environment Resources”. It is applicable during the pre-construction and construction phases.

Role of and Relationship between HPMP and HPTP

In accordance with stipulation IV of the PA for the SRPL FESSR Project and Mitigation Measure C-1c, upon approval of the inventory report and a determination of which potentially eligible sites cannot be protected from direct project impacts, a project-wide Historic Properties Treatment Plan (HPTP) will be developed. This HPMP addresses many of the required elements of the HPTP, including general methods and procedures for site evaluation and data recovery investigations, along with protocols for reporting, construction monitoring, and curation. This HPMP also addresses procedures for halting construction, making appropriate notifications to agencies, officials, and Native Americans, and assessing the significance of a new discovery during construction. The HPTP will specifically address, within the specific project component, the assessment of effects and how adverse effects to historic properties will be resolved in consultation with SDG&E and other consulting parties, as well as including a process for managing unanticipated discoveries. The HPTP will include a process for managing the discovery of human remains taking into account applicable state, local laws, and the Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. § 3001) on federal lands, and provide for archaeological and Native American Tribal monitoring. As stated before, this HPMP addresses and provides the foundation and context of the required components of the HPTPs. The HPTP will specifically call out which historic properties will be treated with implementation of ESAs, and which must be evaluated and possibly treated in other manners to resolve adverse effects. HPTPs are discussed in Chapter 6.

4. CULTURAL RESOURCES INVENTORY: METHODS, RESULTS AND DESIGN CHANGES

ARCHAEOLOGICAL RESOURCES

Class III Inventory

This section discusses the survey design and methods completed in support of the SRPL FESSR Class III survey and preliminary eligibility evaluation effort in accordance with Mitigation Measures C1a and C1b. The Lead Agency (BLM) requires a systematic, intensive surface survey of the ADI of the APE. The BLM refers to these archaeological surveys (including archival record review and discussion) as a Class III Inventory. The resulting reports are: Garcia-Herbst et al. (2010); Noah and Gallegos (2008); and Hunt (2008).

Survey Design

The Secretary of the Interior has issued standards and guidelines for the identification and evaluation of historic properties (*The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* [48 FR 44720–44726]), which are used to ensure that the procedures are adequate and appropriate. The identification and evaluation of historic properties are dependent upon the relationship of individual properties to other similar properties (NPS and ACHP 1998:18-20). Information about properties regarding their prehistory, history, architecture, and other aspects of culture must be collected and organized to define these relationships (NPS 2009).

As noted in the BLM Manual, Section 8100, Subsection .01, “managing cultural resources is viewed as an integrated system of identifying and evaluating cultural resources, deciding on their appropriate uses, and administering them accordingly” (BLM 2004a). This system recognizes that cultural resources are “fragile, irreplaceable resources with potential public and scientific uses, representing an important and integral part of our Nation’s heritage” (BLM 2004: Subsection .06A). Any survey design needs to take such considerations into account.

Survey techniques are loosely grouped into two categories: reconnaissance and intensive (BLM 2004a; NPS 2009). The choice of survey category depends on the level of effort required for a particular project, which can vary depending on the nature of the properties or property types, the possible adverse effects on such properties, and agency requirements (NPS and ACHP 1998:18). The selection of field survey techniques and level of effort must be responsive to the management needs and preservation goals that direct the survey effort. For any survey, it is important to consider the full range of historic properties that may be affected, either directly or indirectly, and consider strategies that will minimize any adverse effects and maximize beneficial effects on those properties (BLM 2004a; NPS 2009; NPS and ACHP 1998).

For the SRPL Project, an intensive cultural resources inventory (Class III) of the ADI of the APE as described in BLM Manual Section 8110 was conducted in order to adequately identify and describe specific cultural resources in the proposed survey corridor (BLM 2004b). As part of the

Sunrise Powerlink Project (EIR/EIS phase), Gallegos and Associates conducted an archaeological survey of the original proposed project and various portions of alternative project designs that encompassed more than 400 linear miles in San Diego and Imperial counties, approximately 50 linear miles of which included the FESSR project area (Noah and Gallegos 2008). Hunt (2008) conducted another study for the Sunrise Powerlink Project consisting of a survey of more than 6,000 acres in Imperial, Orange, Riverside, and San Diego counties that included approximately 30 percent of the FESSR project area, which was known at that time as the SRPL Southern Alternative. Finally, ASM conducted a Class III inventory beginning in June 2009 covering the remaining elements of the SRPL FESSR (Garcia-Herbst et al. 2010).

Intensive surveys were used to precisely document the cultural resources within the SRPL FESSR survey corridor (ADI of the APE). Such surveys entailed the documentation of the types of properties that are present, the precise locations and boundaries of all identified properties, the method of survey (including the extent of survey coverage), and data on the appearance, significance, and integrity of each property (NPS 2009). For this project, full-coverage (100 percent), systematic surveys with transect intervals no greater than 15 m were performed. In areas where previously recorded sites are mapped, a survey interval of less than 5 meters between team members was used.

Survey Methods

ASM's Class III intensive pedestrian survey corridor consisted of the portions of the ADI of the APE not previously intensively surveyed by SWCA or Gallegos and Associates (Gallegos) from 2006 to 2008 as part of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (Aspen Environmental Group 2008; Hunt 2008; Noah and Gallegos 2008), which totaled approximately 6,439 acres. The data collected by SWCA and Gallegos was incorporated into the ASM inventory report and were included as part of the overall management process. The previously recorded sites and isolates within the areas surveyed by SWCA and Gallegos within the ADI of the APE were revisited by ASM during the Class III inventory under specific circumstances. First, if ASM's survey corridor was adjacent to the SWCA/Gallegos corridor, and a previously recorded site boundary extended from the SWCA/Gallegos corridor into the ASM corridor, then the entire recorded site extent was inspected by ASM staff.

A full-coverage pedestrian survey conducted at 15-m transect intervals was completed for the entire SPRL FESSR ADI of the APE. Each survey crew consisted of a field director/crew chief plus three crew members, all of whom meet the applicable Secretary of the Interior's Qualification standards. Two local Native American consultants were invited to accompany each ASM crew during the survey. Transect intervals were reduced to 3 to 5 m within identified archaeological sites in order to adequately define the site character. In walking the systematic 15-m transects, ASM personnel interrupted the transects in order to complete judgmental inspections of locations such as potential milling features on exposed bedrock outcrops within the APE. Upon completion of the judgmental inspections, crews returned to the 15-m transects in order to maintain systematic coverage. The survey was generally conducted from east to west, in so far as topography and access permitted.

Areas with a low potential for cultural resources due to slopes of greater than 25 percent were addressed by a directed survey strategy. This focused on ridges; midslope terraces; rock outcrops

that are more likely to contain rockshelters, caches, or rock art; and watercourses where isolated milling stations and task-specific sites may be located.

The BLM and SDG&E were informed of archaeological site findings over the duration of the survey and ensured that other Signatories and Invited Signatories to the PA, as well as interested parties such as Tribes, were informed of these findings. This was done in order to facilitate the early implementation of measures to avoid potentially significant sites, for instance through an amendment of the APE to include an area or areas beyond the extent of the established APE, consistent with the terms of the PA.

High-precision Trimble global positioning systems (GPS) aided in navigation. Together with hard-copy field maps, GPS devices were used to keep the field crew aware at all times of the limits of the survey corridor, locations of previously recorded sites and areas of non-BLM land ownership. This field device was also used to record datums of cultural resources encountered during the survey, to a decimeter level of accuracy. This information was downloaded with the Microsoft ActiveSync program and converted to GIS shape files using Pathfinder software. A GIS specialist created digital maps to accompany the site forms and report, and will provide copies of project shape files to the BLM with the final report.

A number of previously recorded sites that are mapped within the survey area were not identified during the ASM survey effort. The process for finding these sites was attempted in the following way: When a previously recorded cultural resource was not immediately identified at the recorded location based on both the uploaded GPS coordinates and the paper map plotted location, a 5-m-interval pedestrian survey of a 50 m radius around the recorded site location based on the recorded UTMs and the site boundary data that was uploaded to the Trimble GPS prior to the commencement of field surveys was completed. In the case of bedrock milling features, a careful examination of any boulder outcrops in the vicinity of the recorded bedrock milling site was completed. After these steps were completed, the survey team carefully examined the sketch and location maps, aeriels and USGS topographic maps to attempt the visual identification of the resource by relocating mapped landmarks and relating those topographic features to the recorded features and artifacts.

Every effort was made to find all the previously recorded resources within the ADI of the APE, with mixed results. Technology limitations at the time of the original site recording (use of paper maps and compass readings versus GPS), and/or environmental changes in the form of erosion of cultural deposits or deposition of soil or organic material over cultural deposits, have probably resulted in some sites not being identified. Additionally, crews searched no more than 20 m outside the defined survey corridor for previously recorded sites when they were not at their mapped location within the survey corridor.

This was a non-collection survey. ASM archaeologists recorded artifacts in the field to facilitate interpretations of site character but no artifacts were collected or removed from the sites. All new prehistoric and historic sites were recorded, and records for previously recorded sites in the survey area were updated, confirming or correcting information regarding their locations, spatial extent, general characteristics, and perceived eligibility status, as appropriate. Sites were defined as any concentration of three or more artifacts in a 25-m² area. Site boundaries were defined

when more than 50 m of open space separated surface cultural materials. Isolated artifacts were defined as two or fewer artifacts in a 25-m² area.

ASM personnel assigned a temporary site number to all cultural resources that met the definition of an archaeological site. Site recording included definition of site boundaries, features, and formed artifacts. Detailed sketch maps demonstrate the relationship of the location of each site to topographic features and other landmarks and characterize the appearance of the site surface. Digital photographs document the environmental associations and the specific features of all sites, as well as the general character of the survey area. If a site extended beyond the survey corridor limits, and if access to the area beyond the survey corridor was available, the whole site was documented until it was terminated by the end of the surface cultural deposit or by natural features, such as drainages.

Documentation

Documentation of sites complied with the reporting specifications in the BLM 8100 Manual guidance as stipulated in the BLM Cultural Resources Use Permit and Field Authorizations for this Undertaking, and with the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), as well as the California Office of Historic Preservation Planning Bulletin Number 4(a), December 1989, *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports*. All prehistoric and historic sites identified during this inventory were recorded on California Department of Parks and Recreation Form DPR 523 (Series 1/95), using the *Instructions for Recording Historical Resources* (Office of Historic Preservation 1995).

Native American Participation

As noted, local Native American representatives from a variety of the associated tribes were invited to participate in the field survey for the SRPL Project and the individual Tribal Consultants were approved through their respective Tribal Government. Multiple tribes expressed interest in having tribal consultants involved in the Class III survey. With their consent, Native American input during the survey was documented in the daily survey log. Two Tribal consultants accompanied each of ASM's two four-person crews. The participating Native American consultants walked with the archaeologists during pedestrian survey and provided ASM with information regarding specific areas of Tribal concern encountered during the survey, as appropriate. Weekly summaries of survey findings and Native American consultant input were provided to all interested Tribes via U.S. postal delivery. Although the consultants themselves did not survey, they did assist ASM staff with the identification of cultural resources. The concerns expressed by the consultants were compiled in the Survey Findings chapter of the inventory report (Garcia-Herbst et al. 2010). Representatives from the Campo, La Posta, Manzanita, and Viejas Reservations participated in the field survey. Their comments are addressed in the SRPL inventory report (Garcia-Herbst et al. 2010).

In addition to the survey process, several consultation meetings have been held by the BLM with consulting tribes to disseminate the results of the inventory as well as to discuss this HPMP. Additionally, the BLM has hosted several site visit field trips to tribal representatives. As a result, several areas have been identified as areas of tribal concern. The meeting notes and site

visit comments are compiled in Appendix G in the inventory report (Garcia-Herbst et al. 2010). Native American concerns will be addressed through additional consultation, the establishment of Environmentally Sensitive Areas (ESA), as part of construction monitoring, and/or project redesign. If these methods are unable to adequately mitigate effects to areas of Native American concern, a site specific HPTP will be prepared to mitigate adverse effects to the corresponding areas of concern.

Summary of Inventory Results

The following sections briefly summarize the results of the class III inventory conducted for the ADI of the APE for the SRPL FESSR. The inventory results are addressed in detail in the inventory report prepared by ASM (Garcia-Herbst et al. 2010).

Previous Studies

Thirty previously completed cultural resources documents are identified that address portions of the overall SRPL FESSR. These are generally studies completed over the past 30 or more years that include overlapping portions of the Sunrise APE. Several of the studies are specific to portions of the Sunrise Powerlink EIR/EIS process. Additionally, background research for the Class III inventory resulted in the identification of 465 previously recorded cultural resources, including sites and isolates, within the SRPL ADI of the APE (Garcia-Herbst et al. 2010).

Archaeological Resources within the ADI of the APE

During the Class III survey (Garcia-Herbst et al. 2010), 210 of the 465 previously recorded cultural resources in the SRPL FESSR survey corridor were identified by ASM; 183 are sites and 27 are isolates. An additional 54 previously recorded cultural resources were identified by SWCA and Gallegos, but were not revisited, visually inspected and updated by ASM because they were located in previously surveyed areas and would not be impacted by the project; 50 are sites and four are isolates. ASM newly documented 456 cultural resources within the survey corridor; 202 are sites and 254 are isolates. Combining the 210 cultural resources previously recorded by Gallegos or SWCA that were identified by ASM during this survey, the 54 cultural resources previously documented in areas surveyed by Gallegos or SWCA within the survey corridor that ASM did not revisit, and the 456 newly recorded resources by ASM, there are a total of 720 cultural resources (435 sites and 285 isolates) within the SRPL survey corridor. The site record forms and updated site information with detailed mapping are provided in the technical report documenting the results of the Class III Inventory (Garcia-Herbst et al. 2010). The summary table provided in Appendix D of this HPMP includes newly recorded sites and previously recorded sites that were visited and updated as part of the Class III survey. The summary table includes sites that are within areas of direct impacts from the project as currently designed. Additionally, the summary table in Appendix D includes a preliminary evaluation of eligibility status based on a matrix of data potentials for each site, subject to project impacts.

Buried Sites

Although impacts to all known surface sites in the SRPL Project area will be mitigated through standard archaeological procedures, existing laws and regulations require that the impact of all Project activities on important cultural resources be considered. It is probable that buried archaeological sites lacking surface expression exist along the SRPL survey corridor. Such sites

would not have been visible during archaeological surveys, and, therefore, are undocumented. Because transmission structure foundation construction excavations have the potential to impact undetected, important sites, a preliminary Buried Site Sensitivity Characterization was developed during the Class III inventory in accordance with Mitigation Measure C3a. This characterization identified areas of the project where buried or masked sites were deemed to be most likely to occur. Information yielded by the application of this characterization will be used to provide a baseline framework for a Buried Site Testing Model and Buried Site Testing Plan (BSTP) by a professional geomorphologist as discussed below. This Plan will be designed to locate buried sites on predetermined SRPL segments prior to construction excavations, and to focus any subsequent archaeological monitoring efforts in particular regions of the project during construction. Application of this model should greatly reduce the amount of archaeological monitoring necessary during construction; reduce the potential for direct impacts to significant undiscovered resources; and reduce the likelihood of archaeology-related construction delays.

Sensitivity for Undiscovered Archaeological Sites

Over the course of the Class III cultural resources inventory surveys, evidence for buried or masked cultural deposits was opportunistically sought through inspection of natural or artificial erosion exposures and the spoil from rodent burrows within the survey corridor. This information was intended to augment the observation of artifacts and ecofacts on the surface. In the daily survey notes, the field director and/or crew chief also assessed the potential for buried or masked archaeological sites on the basis of subregional geomorphology across the broader study area.

The preliminary Buried Site Sensitivity Characterization by ASM identified a total of 30 structure locations within the ADI for the SRPL project as having a moderate to high probability to produce unidentified subsurface cultural materials (Table 1) during foundation excavation work. This assumption was based on several criteria, including the presence of sufficient sedimentation to cover potential cultural resources, geomorphology, land form characteristics, proximity to a reliable fresh water source, and the occurrence of previously recorded cultural resources in the immediate area. Field observations recorded in the daily survey notes were compiled to characterize these areas of buried site potential. Although no cultural resources were identified on the ground surface in these areas, it is possible that unidentified cultural resources exist below the surface. In order to ensure to the degree possible that cultural resources are not adversely impacted, a subsurface exploration of these areas will be conducted prior to the commencement of project construction activities as part of the BSTP presented above.

Table 1. Structures with Potential for Buried Cultural Deposits Based on the Buried Site Sensitivity Characterization

Section	Structure	USGS Quad
10B	P351	Yuha Basin
10B	P350	Yuha Basin
10B	P347	Plaster City
10B	P342	Plaster City
10B	P336	Plaster City
10B	P335	Plaster City
10B	P334	Plaster City
10B	P308	Painted Gorge

Section	Structure	USGS Quad
10A	P274-1	In-Ko-Pah Gorge
9C	P266-2	In-Ko-Pah Gorge
9C	P257	In-Ko-Pah Gorge
9C	P221A	Jacumba
9C	P221-2	Jacumba
9C	P220-1	Jacumba
9B	P205-2	Live Oak Springs
9B	P193-1	Live Oak Springs
9B	P191-1	Live Oak Springs
9B	P182	Sombrero Peak
9B	P141	Mount Laguna
9A	P131-1	Mount Laguna
9A	P129	Mount Laguna
9A	P128	Cameron Corners
8D	P79	Morena Reservoir
8A	P32-1	Barrett Lake
8A	P29	Barrett Lake
7	P110-1	Viejas Mountain
5	P81-1	Alpine
5	P66-2	El Cajon Mountain
5	P31-1	San Vicente Reservoir
4	P12-1	Poway

Buried Site Testing Plan

To determine the areas within the SRPL survey corridor with a high sensitivity for buried cultural resources, a BSTP will be developed as a separate document in support of the HPMP. The Buried Site Testing Plan (BSTP) will be developed by a professional geomorphologist and executed prior to ground disturbance in the areas identified as likely to include buried or masked cultural resource deposits based on USDA mapping and the results of the cultural resource Class III survey preliminary Buried Site Sensitivity Characterization and the Buried Site Model that will be developed by the geomorphological consultant. The buried testing plan will use geological and soils data, in concert with landform characteristics, archaeological information, and environmental settings to model the sensitivity of the corridor, identify which impacted project elements are in potentially sensitive sediments, estimate the potential depth of cultural deposits in each location, and then develop a location-specific strategy for testing to the appropriate and necessary depth. Where logistics, property access, and permitting allow, areas of high sensitivity for buried sites will be tested prior to construction, using appropriate methods that will be detailed in the BSTP.

Following completion of the BST program, a brief report will be prepared to: summarize the field findings; reevaluate the sensitivity of each project segment; and report the final recommendations regarding areas to be monitored by a professional archaeologist during construction. Any cultural resources identified by the buried site testing program will be either avoided and protected in an ESA (preferred), or evaluated for NRHP-eligibility in accordance with procedures developed in Chapter 5 of this HPMP. Identified resources determined to be eligible would be treated in a manner to be detailed in an approved HPTP. In addition to these measures, portions of the Project that are deemed to be highly sensitive for buried sites, as a

result of the buried site testing program, will be monitored during construction by a professional archaeologist and a Native American consultant, in accordance with provisions of Mitigation Measure C-5a and Chapter 8 of this HPMP.

BUILT ENVIRONMENT RESOURCES

A historic built environment survey has been initiated to assess the potential for visual intrusions on the viewsheds of any historic built environment resources situated within the SRPL APE that are eligible or potentially eligible for nomination to the National Register of Historic Places. In order to address such indirect visual impacts, an Area of Indirect Effects has been defined within the APE that encompasses a radius of one-half a mile around the project centerline.

In compliance with the BLM's Record of Decision and Mitigation Measures C-1c and C-6a, a phased approach to evaluation of potential impacts on potentially eligible historic properties will be implemented for the Class III survey, building on the assessment of visual impacts performed for the FEIR/EIS.

The assessment of visual impacts on the historic built environment completed for the FEIR/EIS was based on an assessment of previously recorded historic built environment resources within the Area of Indirect Effects. For the Visual Assessment study, additional research and field survey was necessary to identify all historic built environment resources within the Area of Indirect Effects consistent with Mitigation Measure C-6a of the BLM's Record of Decision.

Records Search and Data Analysis

Parcel information has been analyzed for the entire Area of Indirect Effects to identify buildings and structures that meet the age threshold for eligibility to the NRHP and CRHR. In total, 1045 buildings are within the Area of Indirect Effects. Dates of construction for the buildings were obtained from SDG&E Sunrise Powerlink project Land Agents. Dates of construction were not available for all buildings, however. In an effort to narrow the focus of the search to buildings that meet the age threshold for eligibility, ASM examined high resolution aerial photographs of the Area of Indirect Effects and eliminated all buildings that were part of newer developments. ASM also completed a search of County Assessor records for the remaining parcels through Realquest.com. SDG&E Land Agents also examined building permit records for the remaining buildings. Approximately 280 buildings were identified as possibly being over 50 years old at the time of survey.

Archival Research

ASM conducted archival research to develop a regional historical context and resource-specific contexts for resources within the Area of Indirect Effects. Historical contexts will be developed for the following themes:

- Transportation: Highway 80 and historic trails
- Development of desert communities: Community of Oasis

- Water development and water conveyance systems: Morena Lake, Barrett Lake, El Capitan Reservoir, Lake Jennings, and San Vicente Reservoir
- Early ranching and homesteading
- Travel and tourism

Additional themes and resource-specific research may be required depending on historical resources identified within the Area of Indirect Effects.

Community Outreach

ASM contacted local historical societies, libraries, community groups and local historians to request information regarding historic built environment resources that they consider may be eligible for listing in the CRHR or NRHP. Groups and individuals contacted include: Alpine Historical Society; Alpine Branch Library; Campo-Morena Library; Central Library, San Diego; Cleveland National Forest; Jacumba Library; Jim Newland, California State Parks; Lakeside Historical Society; Lakeside Library; Mountain Empire Historical Society, Campo; National Association Civilian Conservation Corps; Portrero Library; Poway Historical and Memorial Society Museum; Poway Library; San Diego Historical Society; and Save Our Heritage Organization (SOHO). ASM also contacted Ms. Mildred Digenan regarding her ranch in El Monte Valley.

Field Survey

The built historic resource survey was initiated in July 2009 and is ongoing. The initial field documentation of buildings within the Area of Indirect Effects has been conducted by ASM, including historic building and structure evaluations and assessment of visual impacts.

The field survey was conducted from the eastern end of the SRPL in Imperial County and continued west. High-resolution aerial photographs and historical maps were consulted to identify building and structure locations. The buildings and structures were photographed from public roads where possible. The addresses and APNs of the buildings and structures were recorded. If this information was not available, UTM coordinates were taken using a Trimble GPS unit. The APNs of the buildings and structures that were visible on the aerial photographs or historical maps and were not visible from public roads were recorded and submitted to SDG&E for owner approval to enter the property.

The field survey and building permit records search together reduced the number of buildings potentially meeting the age threshold for eligibility to 258. Of this number, 112 buildings have recorded dates of construction prior to 1961. Dates of construction were not available for the remainder of the buildings. Ninety buildings were documented during field survey. The remaining buildings could not be documented as the buildings were not visible from the public right-of-way and access to the parcels had not been provided.

Assessments of visual impacts have been completed for three portions of the Area of Indirect Effects: the Mountain Springs Grade segment, the Sugarloaf Alternative, and all USFS property. Assessments of visual impacts are ongoing for the remainder of the SDG&E's SRPL Area of

Indirect Effects and will be summarized in a report currently in preparation (Ní Ghabhláin et al. 2010).

TRADITIONAL CULTURAL PROPERTIES

With the assistance of SDG&E, the BLM consultation with Native American groups concerning sacred sites and Traditional Cultural Properties (TCP) along the SRPL project area has been ongoing, and will continue through and after all phases of construction in accordance with Mitigation Measure C4a. Native American consultation for the SRPL project is being conducted per 36 CFR Part 800 through the BLM. ASM is assisting the BLM with Native American consultation, including attending consultation meetings with BLM personnel and interested Native American parties and facilitating the dissemination of information. LSA Associates, Inc. (LSA) is also assisting the BLM with Native American consultation, including organizing and documenting consultation meetings between the BLM and interested Native American parties, as well as conducting in-depth interviews with local tribal members. Specifically related to and in compliance with Mitigation Measure C4-a, LSA is undertaking a study to assess the effect of the project on traditional areas/cultural sites. This study will include interviews with Tribal elders and possibly visitation to the areas of concern specifically related to Mitigation Measure C4a.

Consultation is an ongoing process and will continue through the duration of this project. As part of the Class III inventory survey (Garcia-Herbst et al. 2010), information regarding Traditional Cultural Properties and other issues of Native American concern was elicited from participating Native American monitors and survey team members and through outreach to the Native American community.

Several consultation meetings have been held by the BLM with consulting Tribes to disseminate the results of the inventory as well as discuss this HPMP. Additionally, the BLM has provided several site visit field trips to tribal representatives. As a result, several areas have been identified as areas of tribal concern. Tribal members have expressed a desire to participate in monitoring of field surveys and are concerned that surveys and buried site testing take place prior to any construction. Tribes indicated that they would like cultural resources protected and would like to continue to participate in the process regarding the identification and evaluation of cultural resources within the project. Tribes indicated that all sites should be avoided, most especially those with human remains, although some representatives expressed a desire to have human remains carefully removed and repatriated. Geographic areas of concern include the Plaster City area, Coyote Mountain, Sugarloaf Mountain, the Jacumba Valley and Jacumba Peak areas, McCain Valley, the Border Patrol Station area near La Posta, the Long and Round Potrero areas, the Suncrest Substation area, and El Capitan Mountain. The meeting notes and site visit comments have been compiled in Confidential Appendix G of the inventory report (Garcia-Herbst et al. 2010).

At this time no officially recognized National Register-eligible TCPs have been identified along the SRPL project APE. The Coyote Mountain and Table Mountain (north of Jacumba) areas have been designated by the BLM as Areas of Critical Environmental Concern (ACEC) affording them protection. The Coyote Mountain, In-Ko-Pah Gorge, Sugarloaf Mountain,

Jacumba Valley and Jacumba Peak areas have all been documented as areas of tribal concern (Woods 1982); however, none of these areas were ever formally designated Traditional Cultural Properties (TCP). Additionally, two archaeological districts are listed on the National Register (Table Mountain and Yuha Basin) and are near the SRPL project area, and one proposed archaeological district that is recommended eligible for listing on the NRHR (Jacumba) is within the project ADI (Wirth Associates, Inc. 1981).

DESIGN CHANGES TO AVOID SITES AND AREAS OF NATIVE CONCERN

Preliminary assessments of the significance of cultural resources identified during the inventory report (Garcia-Herbst et al. 2010) were made to the extent possible, in order to provide recommendations for avoidance of project impacts to resources that are likely to be significant in accordance with Mitigation Measure C1b. For the purposes of the HPMP, all of the previously unevaluated archaeological sites within the survey corridor, which consists of the ADI of the APE, have been categorized as potentially eligible under NRHP criteria, and “historically significant” or potentially eligible under CRHR criteria, unless otherwise previously characterized. The isolated finds in the survey corridor are considered ineligible for nomination to the NRHP and “historically not significant” or ineligible for nomination to the CRHR.

SDG&E has identified 21 reroutes along the proposed transmission line since the FEIR/EIS. The majority of these are major reroutes (Schmidt, High Meadow Park, Morgan, Jerney, Just, Hermes, Lenac, Rees, La Posta, Rough Acres, Lansing/Jackson, Quino, MSG Alternative, and Sugarloaf) and shift the trajectory of the corridor to avoid areas of cultural resource, Native American, or biological resource concern or to comply with private property owner requests, and were assessed by ASM in the inventory report (Garcia-Herbst et al. 2010). Eight other reroutes are smaller line adjustments and have been incorporated into the final project design (Ball in Section 5, Slaughter/Wilson in the Suncrest Substation, County Aqueduct in Section 8B, Potrero in Section 8C, Pacific Crest Trail in Section 8D, JAM in Section 9B, Jade in Section 9C, and P333 to P324 in Section 10B).

Additional design changes are possible due to ongoing efforts to avoid additional areas of cultural resource, Native American, or biological resource concern or to comply with private property owner requests. Future design changes will be surveyed using similar methods as those employed during the Class III inventory report and an individual reroute cultural resource inventory report will be incorporated as an Appendix to the existing inventory report (Garcia-Herbst et al. 2010). The project goal is to avoid as many effects or impacts to cultural resources along the SRPL corridor to the degree possible.

Establish Environmentally Sensitive Areas

In accordance with Mitigation Measure C-1e, sites that can be protected from direct impacts, but are within close proximity (within 50 feet) of proposed construction activities will be identified and labeled as Environmentally Sensitive Areas (ESAs). ESAs are discussed in detail in Chapter 8. This means of protection for resource areas will be implemented during construction with the

definition and maintenance of protective staking around identified cultural resource sites and the presence of archaeological and Native American monitors during construction to ensure the appropriate evaluation and treatment of any inadvertant discoveries.

5. EVALUATION OF RESOURCES THAT CANNOT BE AVOIDED

INTRODUCTION

This chapter sets forth the process for evaluation of the significance of archaeological sites (historical and prehistoric) in the SRPL project area that cannot be avoided in accordance with Mitigation Measures C-1a and C-1b. The significance evaluations of these properties will provide a basis for 1) assessing potential effects on sites, and 2) recommending procedures for site treatment during construction and long term operations and management.

The majority of the cultural resources identified within the survey corridor are in areas that will not be impacted by planned construction activities and thus will be avoided and preserved in place. These resources will be managed as part of Mitigation Measure C-5a, which calls for the preparation of a long-term plan to protect National Register eligible properties from direct impacts from operations and maintenance and indirect impacts that may result from the presence of the project. It may not be feasible to avoid all of the recorded cultural resources within the project area through either current or modified project design. Where a cultural resource cannot be completely avoided, evaluation and as appropriate, mitigation and/or avoidance measures will be completed and are presented below.

METHODS FOR EVALUATION OF ARCHAEOLOGICAL SITES

Evaluation for the NRHP/CRCR requires application and consideration of four criteria. Based on the current construction plans for the SRPL Project, including but not limited to reroutes, the establishment of ESAs, and redesign, as described previously, proposed construction activities have the potential to impact a total of 36 archaeological resources (Appendix D) with unknown eligibility status and one resource (SDI-19036/-19037) which has been recommended as eligible for listing on the NRHP/CRHR, for a total of 37 possibly impacted sites. Formal eligibility determinations, through archaeological testing, to determine NRHP and/or the CRHP status will be required for any of the 35 unevaluated sites that cannot be avoided by the final construction components of the project or if appropriate for any additional sites that are found to be in areas of direct impact, which cannot be avoided. The necessary elements of the Treatment Plan are provided below.

Eligibility for the NRHP/CRHR under 36 CFR §60.4a through d and Public Resources Code §15064.5(a)(3)(A) through (D), respectively, will be evaluated through consultation with Tribes, archival research, and if appropriate, subsurface testing. A research design is included in Appendix C, including types of data required to meet a definition of important information.

Evaluation efforts will only be conducted within areas that will be subjected to direct impacts (the ADI of the APE) from project construction activities and include a buffer outside of the

ADI. Eligibility will be assumed for the remaining portion of the site that is not going to be directly affected and can be protected through ESAs. The buffer may include an area of as much as 10-20 m outside of the ADI dependent on landform characteristics and individual site components, as well as access to properties outside the ADI. Test excavations will extend to the maximum depth of proposed construction excavation, or until sediment that does not contain cultural resources is encountered (for example bedrock formations or decomposing granite).

Field Strategy and Methods

Testing fieldwork will consist of accurately establishing site boundaries (surface and subsurface), surface mapping and artifact collection, and fully recording any milling features within the ADI of the APE. Subsurface testing within the ADI may consist of the gridded excavation of STPs at a maximum spacing of 10-m to explore and define site boundaries and the completion of at least one 1-x-1-m unit per site to assess artifact yield, integrity, and variability. A Native American consultant should be present for the duration of evaluation efforts. At the completion of field efforts recovered artifacts will be transported for laboratory analysis and cataloging and as appropriate will be prepared for curation at the San Diego Archaeological Center (SDAC) or at another federally accredited facility, unless other arrangements are required under state law based on private property context.

Site Mapping and Examination

All sites will be mapped in detail to decimeter accuracy: site boundaries, boundaries of individual loci, features, artifact concentrations, and diagnostic artifacts will be identified and initially marked by pin flagging within the ADI of the APE. A high-precision Trimble GPS system will be used to create a site grid system; plot loci, features, and artifacts in relationship to the grid; and create working field maps and final report-quality maps. Observed surface disturbances will be mapped in order to assess previous site damage and assessment of site integrity. Maps will illustrate site and locus boundaries, and their relationships to cultural and natural features (including topographic contours).

Site mapping will be oriented from a datum point. The datum point and the grid will be used to plot the location of surface-collected artifacts, shovel test pits, and 1-x-1-m units. Photographs will be taken to record the general character of each locus, milling feature, and subsurface features.

Historical Research

In addition to completed mapping and examination of historic era resources the following sources will be useful in exploring the possible historical associations of historic sites: historical plat maps, historical USGS maps and aerial photographs, and homestead records, specifically land patent files. As appropriate and possible title searches may be conducted to determine the history of land ownership preceding the current property owner.

Surface Artifact Collection

This component of the fieldwork will consist of the point-provenience mapping and documentation of diagnostic surface artifacts within the ADI of the APE. Artifacts considered to be diagnostic include shell beads or ornaments; ceramic rim sherds, decorated sherds, and other

ceramic objects; artifacts made from obsidian, wonderstone, and other exotic stone materials; complete or base fragments of projectile points or bifaces; any regionally rare artifact types. Diagnostic historic artifacts, including glass and ceramics containing maker's marks, and a range of colored bottle glass, will also be documented. As possible, artifacts will be described fully in the field; those that could contribute substantially to evaluation of site eligibility or to future research may be collected for further laboratory analysis.

Shovel Test Pits

STPs will be used to determine the presence or absence, horizontal and vertical extent, and structure of subsurface deposits within the ADI of the APE, and to assist in the determination of the nature of the prehistoric sites. Each STP will measure approximately 30 cm in diameter and will be excavated in 20-cm levels as deeply as practicable or until no cultural resource debris is encountered. Excavation will be completed using hand tools.

STPs will also be excavated within trash scatters. These will be placed in areas of greatest concentration of materials. If subsurface deposits are identified, one or more 1-x-1-m test units may be excavated to determine the depth of the deposits, to recover sufficient material for analysis, and to assess the integrity of the deposit.

The number and location of STPs excavated will vary between loci. STPs typically will be placed at regular intervals to determine the extent of any subsurface deposits. STP intervals may be placed at a minimum of 5 meters (if a subsurface return is positive) and a maximum of 10 meters (if a subsurface return is negative). Actual numbers of excavation units (including STPs and Unit Excavations, discussed below), and their placement will be determined by the PI and Field Supervisor, using professional judgment based on the actual configuration of the site. Excavations will be limited to the minimum number that will provide justifiable evaluations of eligibility for each site and will inform adequately for preparation of a treatment plan, if necessary.

Sediment removed from STPs will be screened through 1/8-in. hardware mesh, and all cultural material (excluding fire-affected rock) will be collected, bagged, labeled, and transported to a laboratory for processing. Excavation results will be documented on STP forms, which include provenience, artifact inventory, information on sediment type and color, termination depth, and general observations. All STPs will be backfilled after excavation.

Unit Excavations

A minimum of one test unit may be excavated within the ADI of the APE on each site with a confirmed subsurface deposit. One test unit may be excavated for each 2000 square meters of site area. The test unit dimensions will be 1-x-1-m. Excavation of 1-x-1-m units may be used to determine the character, structure, and integrity of subsurface cultural deposits at each locus. The number of units excavated will vary between loci, depending largely on locus size and complexity. Units will be primarily located in areas of high surface artifact concentrations and subsurface potential, based in part on STP data, and their distribution across the site will attempt to assess intrasite variation. At smaller loci, fewer units will be excavated and their locations will be judgmentally placed in areas deemed the most probable to have subsurface material.

All 1-x-1-m units will be oriented to true north, and unit datum will be the northwest corner. In the absence of distinct stratigraphic layers, excavation will be conducted in 10-cm surface-parallel levels. If stratigraphic changes are sufficiently distinct to be discernible, excavation will proceed by observable strata within 10-cm levels. Cultural features, if present, will be excavated separately. Unit records compiled for each level will include provenience, sediment description and evidence of disturbance, artifact inventory, and other pertinent observations.

Features and particularly notable artifacts will be mapped and photographed *in situ* when possible. Excavated deposits will be sieved through 1/8-in. hardware mesh. Cultural materials, including prehistoric stone tools, flaked lithic debitage, ceramics, animal bone, marine shell, and also historic and modern cultural items will be collected, bagged, and labeled.

Charcoal will be collected when it occurs in concentrations potentially useful for radiocarbon dating or in pieces large enough for plant source identification. Small charcoal samples will be collected for accelerator mass spectrometry (AMS) radiocarbon dating. Fire-affected rocks will be counted but not collected. Sediment samples will be taken as deemed appropriate for flotation of carbonized plant remains, particularly in areas rich in humus or within any subsurface features. Column samples, or contextual samples, will be taken for flotation and small artifact identification. Flaked stone tools and milling tools will be sealed in plastic bags to prevent contamination for possible subsequent protein residue or pollen studies.

As a general rule, units will be excavated to sterile subsoil. Exceptions may occur in cases in which the cultural deposits are diffuse due to downward movement by rodents. If full-level excavation extends more than 150 cm below the surface, shoring will be installed. Unit sizes may be expanded in the event that a feature is encountered. Unit expansions will involve only the minimal area necessary for such purposes, and will be excavated in the same manner as adjoining units, but will be recorded separately.

After unit excavation is complete, a stratigraphic profile of one sidewall will be drawn, the sidewall will be photographed, and the sample unit will then be backfilled. Backfilling may be postponed if expansion of the unit is contemplated or if further reference to unit stratigraphy is needed. Any unit left open overnight will be covered with a plywood sheet as a safety measure.

Milling Feature Analysis

The milling surfaces within the ADI of the APE for each site to be evaluated will be examined for patterns of grinding and intensity of use, in order to put the site into a regional settlement and subsistence context. Several of the plants that are currently recorded in the project area produced seeds and nuts that were important food sources and that were processed with milling tools (Hedges and Beresford 1986). These include scrub oak, Manzanita, laurel sumac, lemonade berry bush, chamise, California buckwheat, white sage, various grasses, agave and yucca. Unlike acorns for which mortars and pestles were the principal tool for grinding, the occurrence of so many slicks has been proposed to be more likely applied to seeds and fiber processing (Graham 1981; True et al. 1991). Milling features were also less frequently used to process small mammals and mineral pigments.

Examination of the intensity of use of the milling features will be noted by measuring the degree of grinding of surfaces and the depth of the depressions with hypothesized correlations to the archaeological context of the milling features (True 1993). Light or ephemeral milling may be associated with a foraging approach whereby individuals came through the area on an intermittent basis to expediently collect and process ripened plants and then bring the products back to a habitation site. Habitation sites are documented within and close-by the project area. In such circumstances, existing, naturally roughened surfaces would be used, rather than repeatedly pecking (i.e. resharpening) existing grinding surfaces that would result in more slick and embedded features. Such a pattern generally correlates with low artifact densities, low artifact diversity, and an absence of subsurface midden accumulations in the areas around the bedrock features, which would be predicted for a short-term resource collecting and processing site rather than a habitation site.

More heavily polished and embedded milling surfaces might be expected at temporary camps or residential bases (i.e., village sites) where resources were brought for processing, cooking, and consumption. At such sites, milling surfaces were more likely to be used/owned by specific residence or kin groups and used by members of several generations successively. These sites would be expected to be correlated with much higher artifact density and diversity, associated midden accumulation, and carbonized floral remains from parching seeds and general cooking.

Laboratory Analysis

The procedures used in the initial processing of recovered material include the cleaning (as appropriate), sorting, and cataloging of all recovered items. All items will be individually examined and cataloged according to class, type, and material; counted (except for bulk invertebrate and vertebrate remains); and weighed on a digital scale. Very large items, such as oversized ground stone, will be weighed on a dial scale. All coded data will be entered into a program similar to Microsoft Access 2000. Data manipulation of a coded master catalog for individual and combined sites will be performed in Microsoft Excel or a similar program. While all data will initially be entered as coded data into Access or similar data management system, they will later be converted into text before export into Excel or a similar program for analysis.

The cultural material will be sorted during cataloging into the following categories: 12 classes of prehistoric artifacts, two classes of ecofacts (i.e., vertebrate and invertebrate), a single class of ethnohistoric items, historic and modern items, and five classes of samples as necessary. The prehistoric artifact classes include debitage, cores, utilized flakes, retouched flakes, bifaces, modified cobbles, percussing tools, ground stone, ceramics, bone artifacts, shell artifacts, and miscellaneous items.

All flaked stone will be separated by material types. Cores will be separated by platform variability into multidirectional, unidirectional, bipolar, and bifacial types. Debitage, including both flakes and angular debris, will be sorted by size and cortical variation (primary, secondary, and interior) during cataloging. The classification of flaked stone tools will be determined by the type and technology of modification. Utilized flakes will be identified based on the presence of macro- and/or microscopic use-wear. Retouched flakes include scrapers, graters, non-standard retouch, and other retouched pieces. Length, width, and thickness measurements will be taken on all modified stone, including cores, using a digital caliper.

Percussing tools, including hammers and abraders, will be defined based on their morphology and the type of macroscopic use-wear they exhibit. Ground stone artifacts will be classified as to type, including manos, pestles, and mortars or stone bowls. Length, width, and thickness measurements will be taken for all items.

Ceramics will be sorted by ware, type, and fragment type (e.g., vessel rim or body). Special studies of ceramics will be completed as appropriate.

Ecofact classes generally consist of vertebrate (bone, horn, antler, teeth) and invertebrate (shell) specimens. Bone and shell will be sorted according to biological taxon during cataloging and coded in a separate database. Shell and bone speciation will be performed using comparative collections for identification or atlases. Modified bone and shell will be separated from the unmodified bone and shell assemblages.

Historic items will be cataloged and identified. Ethnohistoric items will be cataloged and coded according to type and material separate from Historic items.

Potential radiocarbon samples will be collected from shell, bone, charcoal, and other organic materials and submitted for analysis as appropriate.

Eligibility Criteria and Methods of Evaluation

Field methods and evaluation considerations will follow guidelines established by the ACHP for the treatment of archaeological properties (Advisory Council 1980), and the determination of NRHP (National Park Service 1982) and CRHR eligibility. Data collected from evaluation efforts will be assessed or evaluated using 36 CFR §60.4d and Public Resources Code §15064.5(a)(3)(D), respectively, (GPO 2009) for NRHP/CRHR eligibility.

Eligibility recommendations for prehistoric sites will primarily be based on their potential to yield information to address a series of regional research questions (36 CFR §60.4d and Public Resources Code §15064.5(a)(3)(D), respectively), as well as their associations (under 36 CFR §60.4(a) and (b) and Pub. Res. Code §15064.5(a)(3)(A) and (B), respectively) and distinctive characteristics (under 36 CFR §60.4(c) and Pub. Res. Code §15064.5(a)(3)(C), respectively). These research questions include issues of chronology and dating, settlement organization, site function, and subsistence orientation. Appendix C details the research questions that will guide archaeological site evaluations. Native American heritage value is also a consideration.

Section 8110 of the BLM Manual offers specific guidance for identifying and evaluating cultural resources, including historic built environment resources. According to the manual, “The same criteria and integrity standards are applied to all cultural properties, whether archaeological, historical, architectural, or traditional. In order to be listed in or found eligible for listing in the National Register, a property must have integrity and must meet one or more of the four criteria. No type of property is automatically eligible for listing in the National Register.” Further, “In determining the National Register eligibility of a cultural property, an appropriately qualified cultural resource specialist must apply each of the four National Register of Historic Places criteria for evaluation (36 CFR §60.4; see .32E). If a cultural property has integrity, meets one or more of the criteria, and is not ruled out by a criterion exception, the specialist should

recommend to the responsible manager that it be considered an eligible ‘historic property’ as defined in the National Historic Preservation Act and related regulations. The National Park Service’s National Register Bulletins provide guidance on applying the evaluation criteria and assessing integrity.”

Similarly, eligibility recommendations for historic sites will be based on their potential to yield information to address a series of research questions based on regional contexts for agricultural and mining resources. These questions are tailored for specific site types: residential sites, mining sites, and refuse scatters (see Appendix C).

Cultural resources that have the potential to address at least one of these research issues in a significant way will be assessed with respect to their integrity, degree of disturbance, and potential for buried features. Loci that contribute significantly to site NRHP/CRHR eligibility will be those areas that are demonstrated to have contextual and artifact associations that can be used to further address relevant hypotheses and fill important data gaps.

Reporting

In order to expedite the evaluation and subsequent treatment of potentially eligible resources in areas of direct project impacts, a draft report of testing methodology and the resulting findings and recommendations will be provided to the PA signatories and concurring parties within 30 days after the completion of the field work for eligibility testing. The draft report will summarize the results of the testing operations and provide recommendations to the agencies concerning the eligibility of each site. These recommendations will incorporate Native American concerns and input for non-archaeological issues of site importance and sensitivity that have been previously expressed by Native American consultants or in consultation meetings.

A final evaluation report, meeting Secretary of the Interior Standards, will be provided to the PA signatories and concurring parties within 90 days following the submittal of the draft report. The final report will address the issues as resolved through the review of the draft report.

METHODS FOR EVALUATION OF BUILT ENVIRONMENT RESOURCES

The built environment resources inventory and NRHP/CRHR eligibility evaluation was carried out in compliance with Section 106 of the NHPA, CEQA, and other applicable federal, state, or local laws, ordinances, rules, regulations, and policies. In practice, the CRHR criteria for significance applied under CEQA are generally based on the NRHP and all resources deemed eligible for the NRHP are assumed eligible for the CRHR. Therefore, all cultural resources within the APE were evaluated for eligibility to be listed on the NRHP and CRHR.

The built environment resources inventory report is currently in preparation (Ní Ghabhláin et al. 2010) and will include effects assessments and eligibility recommendations as appropriate.

METHODS FOR EVALUATION OF TRADITIONAL CULTURAL PROPERTIES

According to National Register Bulletin 38, a TCP is a resource that is associated with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. With sufficient integrity and importance to the community identity, TCPs may be considered historic properties that are eligible for inclusion in the National Register. A TCP is similar to a “California Native American culturally significant site” [Pub. Res. Code §21083.2 (c)]. TCPs include built or natural locations, features or landscapes considered culturally significant by Native Americans (other groups have TCPs also), such as sacred places or traditional gathering, hunting, and fishing areas. No TCPs have been identified within the SRPL project area to date. However, several areas of concern have been identified through consultation and site visits and are summarized above in Chapter 4. Should a TCP be identified in an area that would be adversely or significantly affected by construction activities or indirect impacts, avoidance of the TCP is preferred. If the TCP cannot be avoided, the property will require a formal evaluation by a qualified ethnographer to determine its eligibility for listing on the NRHP/CRHR, and actions will be required to resolve the adverse effect. Evaluation of TCPs would include an assessment of the property’s integrity of relationship and integrity of condition, and whether the property meets the criteria for inclusion on the Register in accordance with National Register Bulletin 38. Final eligibility determinations would be made by the BLM in consultation with the affected Native American Tribes or other affected stakeholders.

A traditional cultural property will be recommended as eligible because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998).

PROCEDURES FOR DETERMINING ELIGIBILITY, IDENTIFYING PROJECTS EFFECTS, AND RESOLVING AND ADVERSE EFFECTS

Agency Roles and Responsibilities

The BLM as the Lead Agency for Section 106 will make the final determination of eligibility and finding of effect, in consultation as appropriate with the signatories and concurring parties to the PA and local Tribes. In consultation with those parties and SHPO, the BLM will negotiate appropriate treatments or other actions to resolve adverse effects to historic properties.

Process

The BLM will be responsible for consultation with the SHPO on the agency’s eligibility determinations. Determinations of eligibility for archaeological sites will be based on a draft report of site testing to be prepared by SDG&E. The draft evaluation report is intended to provide sufficient detail to allow the BLM to evaluate the eligibility recommendations provided

and concur with the findings. Prior to consultation with the SHPO on the eligibility of any cultural resource in the APE for inclusion in the NRHP, the BLM will also seek the views and comments, as appropriate, from the consulting parties to the PA on any such determination that the BLM may propose. The BLM will also consult with Indian Tribes and seek the views and comments of Tribal Organizations and individual tribal members regarding places to which they attach religious or cultural significance in order to ascertain the status of these places relative to NRHP and CRHR eligibility criteria.

If cultural resources are determined not included or eligible for inclusion on the NRHP, but may be eligible for the CRHR, the BLM will, at the direction of the CPUC, provide all relevant information to and consult with the CPUC. The CPUC will coordinate its review of all submittals and determinations with the consulting parties to the PA. The CPUC has the authority to make a final determination regarding a cultural resource's eligibility to the CRHR. The consulting federal agencies may decline to participate in this review by written notification to the CPUC.

Once an archaeological site is determined eligible for listing in the NRHP by the BLM or in the CRHR by the CPUC, in consultation with the SHPO, there are two options for mitigating effects or impacts to this historic property or historic resource, respectively. The preferred option is avoidance.

However, when avoidance is not possible, the BLM will apply the criteria of adverse effect to the historic properties to be impacted within the ADI, in consultation with the affected agencies and local Tribes as appropriate. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association [36 CFR §800.5]. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or are cumulative. The BLM, in consultation with the SHPO, may propose a finding of no adverse effect when the undertaking's effects do not meet the criteria discussed above. However, if an adverse effect is found, the BLM shall consult further to resolve the adverse effect through the determination of appropriate treatment or mitigation measures, resulting in the preparation of an HPTP.

If data recovery is recommended to resolve adverse effects to eligible archaeological sites, a draft data recovery plan will be included in the draft evaluation testing report. That plan will specify data recovery methods and goals, and will be based on a research design and methods that will be developed in an approved project-wide Historic Properties Treatment Plan (see Chapter 6). In the context of the HPTP, the data recovery programs for specific sites will be reviewed by the BLM and other consulting parties to the PA during the review of the draft evaluation report.

Where the undertaking may affect a cultural resource, the BLM will apply the criteria of the NRHP and make a determination of eligibility pursuant to 36 CFR §800.4(c)(1). For resources determined to be eligible for the NRHP, the BLM will also review project impacts and make a determination of project effects on historic properties. If there is a finding that the project will adversely affect any historic property, the BLM would also negotiate an appropriate treatment

plan or other options with affected agencies and tribes to resolve the adverse effects. The BLM will submit to the SHPO its determinations of eligibility, finding of effect, and plans for resolving adverse effects within 30 days of receipt of an acceptable draft report. The SHPO will then have 30 days in which to review and comment. Absent comments within this time frame, the BLM may assume, and formally document for the record, that the SHPO has elected not to comment and concurs with the BLM's determinations. The determinations will serve as the basis for resolving adverse effects.

The BLM shall notify all consulting parties of the agency's eligibility determinations and make those available for public inspection.

A final evaluation report, meeting Secretary of the Interior Standards, will be provided to the consulting parties within 90 days following the submittal of a draft report. The final evaluation report will fully address the issues as resolved through the review of the draft report, in addition to answering the research questions posed in Appendix C of this Management Plan within a local and regional context

No Further Management of Ineligible Resources

Once a cultural resource is determined not eligible for listing in the NRHP/CRHR by the BLM or CPUC in consultation with the SHPO, no further management of the resource is required by the BLM or CPUC. Isolated occurrences will be considered ineligible.

6. TREATMENT OF HISTORIC PROPERTIES THAT CANNOT BE PROTECTED

This chapter discusses the treatment of historic properties that cannot be protected as per Stipulation IV (4) in the PA.

ROLE OF PROJECT-WIDE HISTORIC PROPERTIES TREATMENT PLAN

Mitigation Measure C-1c states that, upon approval of the inventory report and a determination of which potentially eligible sites cannot be protected from direct project impacts, a project-wide Historic Properties Treatment Plan (HPTP) will be developed. This HPMP addresses many of the required elements of the HPTP, including general methods and procedures for site evaluation and data recovery investigations, along with protocols for reporting, construction monitoring, and curation. This HPMP also addresses procedures for halting construction, making appropriate notifications to agencies, officials, and Native Americans, and assessing the significance of a new discovery during construction.

Mitigation or treatment efforts will be directed at only those historic properties that cannot be avoided through any of the measures presented in this HPMP (i.e. project redesign and in the establishment and implementation of ESAs). Resources that can be avoided or protected during construction will be treated and protected as such for the duration of the construction project and as part of the long term operations and maintenance monitoring plan discussed below. A project-wide HPTP will be developed when it is determined which historic properties within the SRPL FESSR APE cannot be avoided during construction. At that point, appropriate mitigation or treatment, including but not limited to data recovery, for specific historic properties will be developed in the HPTP (see Mitigation Measure C-1a). The HPTP will detail the types of mitigation that would occur (e.g., public education, interpretive displays, data-recovery investigations, resource protection, native culture enhancement, etc.), along with methods, consultation procedures, and timelines for implementing mitigation. For treatment of direct impacts to significant archaeological resources, the project-wide HPTP will include a detailed research design to guide archaeological data recovery. The HPTP will be submitted to the BLM and CPUC for review and approval prior to the initiation of any field work or construction at historic properties or implementation of other mitigation options.

The HPTP will also define any additional areas of the project that are classified as high-sensitivity for the discovery of buried NRHP or CRHR eligible cultural resources. The sensitivity evaluation for buried sites will be completed by a geoarchaeologist who meets the Secretary of the Interior's Standards and who has expertise in geomorphology and site formation as discussed above in Chapter 4. This HPMP details the provisions for monitoring construction in the identified areas of high sensitivity.

ROLE OF SITE SPECIFIC TREATMENT PLANS

As discussed in the previous chapter, site-specific treatment plans may be developed for archaeological resources where data-recovery investigations will be used to resolve adverse effects of project construction. These will be presented within the evaluation reports for sites that are determined by the BLM to be eligible for the NRHP, but cannot be avoided during construction. These site-specific plans will tier off the research design and methodologies developed in the project-wide HPTP, and will detail the types of investigations and analyses that will fulfill the data-recovery goals established for the project. In some instances, a site specific HPTP may be created to accommodate phased construction schedule. Site specific treatment plans will adhere to all the same requirements as the project wide HPTP, and follow the same review protocols.

DATA RECOVERY TO RESOLVE ADVERSE EFFECTS

The following section discusses data recovery to resolve adverse effects or reduce impacts to a level that is less than significant, in accordance with Mitigation Measure C-1d.

Archaeological Resources

This mitigation measure will apply to any archaeological NRHP/CRHR-eligible resources identified within the project area that cannot be avoided by construction activities. Specific methods of data recovery for any eligible sites will be spelled out in the HPTP. For sites determined eligible under 36 CFR §60.4(d), significant data would be recovered through excavation, research, and analysis. For properties eligible under 36 CFR §60.4(a), (b), or (c), data recovery may include historical documentation, photographic documentation, collection of oral histories, architectural or engineering documentation (HABS/HAER), preparation of a scholarly work, or some form of public awareness or interpretation.

Data recovery on most resources would consist of the excavation of a representative sample and/or surface artifact collection and site documentation. A possible exception would be a site where burials, cremations, or sacred features are discovered, and cannot be avoided. Under these circumstances the requirements identified under Mitigation Measure C-2a would be applied and are summarized below. In general terms, data recovery efforts will include the recovery of a sample of sufficient size to characterize the resource, address pertinent research questions, and resolve adverse effects or mitigate project impacts to below a level of significance.

Data gathered during the eligibility evaluation phase and in the preparation of the research design portion of the HPTP will guide plans and data thresholds for data recovery efforts. If data recovery is necessary, sampling will follow standard statistical sampling methods, but will be confined to the degree possible, within the direct impact area. The data recovery effort as proposed will focus on those portions of the impacted properties that are within the project ADI. Portions of sites that extend beyond the limits of the current project ADI, will not be subjected to sampling and recovery efforts. The extent of archaeological excavation at the data recovery level (for instance, complete or sampling), the methods to be used (screen mesh size, degree of stratigraphic control, treatment of features, etc.), and the methods employed in analyzing the

collection (for instance, radiocarbon dating and specialized studies of particular categories of remains) will be determined in consultation with the BLM based on the type of historic properties that are identified on a case by case basis. Data-recovery methods, sample size, and methods will be detailed in the HPTP and implemented by SDG&E only after approval from the BLM in consultation with the other consulting parties to the PA as appropriate.

Reporting

The data recovery technical report(s) will thoroughly address the research questions posited for the testing operations with an emphasis on mitigation of adverse effects to any portion of a site subjected to data recovery. SDG&E will provide the BLM with a draft data recovery report within 90 days upon completion of fieldwork. After an internal review the BLM will distribute the draft report to all consulting parties to the PA, for a 45-day review period. Comments on the draft will be submitted and addressed and a final document will be provided to the project stakeholders within 30 days of the receipt of all comments.

Built Environment Resources

In accordance with Mitigation Measure C-6a, if any eligible historic built properties are identified that would be adversely affected by visual intrusions from the Project, a separate HPTP will specify mitigation measures that would be implemented to reduce adverse effects, such as screening the visual intrusion with vegetation, moving project towers to less conspicuous locations if technically feasible, or altering towers to reduce identified adverse effects. Selection of appropriate and effective treatments will consider the technical feasibility of the measures and potential impacts on other sensitive resources or land uses.

Other Actions for Reducing Adverse Effects to TCPs or Other Historic Properties

In accordance with Mitigation Measure C-4a, SDG&E shall provide assistance to the BLM, as requested by the BLM, to complete required government-to-government consultation with interested Native American tribes and individuals (Executive Memorandum of April 29, 1994 and Section 106 of the National Historic Preservation Act) and other Traditional Groups to assess the impact on Traditional Cultural Properties or other resources of Native American concern, such as sacred sites and landscapes, or areas of traditional plant gathering for food, medicine, basket weaving, or ceremonial uses within the approved SRPL project APE.

The mitigation or treatment of any eligible TCPs along the SRPL project area will be determined by the BLM in consultation with consulting parties to the PA and local Tribes or affected stakeholders, and detailed in an HPTP.

For areas identified through Native American and other public consultation that hold cultural significance beyond their archaeological data potentials, mitigation measures other than data recovery will be considered if project construction activities cannot avoid impacts to these areas. Mitigation of impacts to historic properties that are not archaeological may include non-traditional approaches such as funding and facilitation of interpretive or educational programs, loan agreements with the curation facility where the project collections will be housed,

documentary production, and/or other, as yet undefined, measures. Such measures, if required, will be detailed in the HPTP, and reviewed for concurrence by all consulting parties.

As directed by the BLM or CPUC, SDG&E shall undertake required treatments, studies, or other actions that result from consultation intended to reduce or resolve adverse effects to historic properties. Written documentation of the completion of all pre-construction actions shall be submitted by SDG&E and approved by the BLM or CPUC at least 30 days before commencement of construction activities within particular components of the Project that would affect historic properties. Actions that are required during or after construction shall be defined, detailed, and scheduled in the HPTP and implemented by SDG&E, consistent with Mitigation Measure C-1c.

7. ISSUANCE OF CLEARANCE TO BEGIN CONSTRUCTION

This chapter discusses the process for issuing clearance to begin construction, such as a BLM Notice-to-Proceed (NTP) or USFS Special Use Permit (SUP) for portions of the SRPL project. The Forest Service issues notice to proceed through the terms and conditions of the Special Use Permit for the CNF segment of the SRPL project.

The BLM, in consultation with the SHPO, has determined that a phased process for compliance with Section 106 of the NHPA is appropriate for the Undertaking, such that completion of the identification of historic properties, determinations of specific effects on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects will be carried out as part of planning for and prior to any NTP and specific project implementation. As required under the terms of the PA [Section IV(A)], this HPMP shall provide sufficient flexibility to permit NTPs for segments of the Undertaking on a phased basis.

DOCUMENTATION OF COMPLIANCE WITH SECTION 106 PA

Project related construction activities on each segment will not begin until pre-construction mitigation measures and the terms of the appropriate sections of the PA have been satisfied for that segment. Once pre-construction mitigation measures have been completed, the appropriate agency will issue a construction clearance, indicating that construction can commence for that particular segment. The construction clearance may include CPUC or other agency conditions or requirements that must be satisfied prior to the start of work or during construction. In some cases, it may be appropriate to issue segment- or component-specific construction clearances when pre-construction mitigation measures have been completed for one segment or component and not another.

Each BLM NTP will include documentation of compliance with Section 106 and the terms of the PA in addition to the cultural resource mitigation measures required by the BLM Record of Decision. This compliance documentation will take the form of a findings and determination memorandum prepared by the BLM archaeologist and signed by the authorized officer (Field Manager). Compliance documentation will be determined by each agency's specific needs and requirements but may take the form of a memorandum or letter from each agency archaeologist charged with reviewing the NTP request.

On MCAS Miramar, the overall access permission/start of construction must be properly coordinated with the Real Estate Division on the Station. The cultural resources construction clearance should be viewed as a component of the overall access coordination and construction access permission/authorization for the SRPL project, unless plans include excavation of artifacts becomes necessary.

ESTABLISHING CONDITIONS OF APPROVAL

The CPUC has the overall responsibility for ensuring that mitigation measures are implemented as adopted by SDG&E. The CPUC will determine the effectiveness of the MMCRP based on the success criteria included in the mitigation monitoring table. The CPUC will be notified of all noncompliance situations and may suggest measures to help resolve the issue(s). All variance requests will be submitted to the CPUC for review and approval.

AGENCY ROLES

Chapter 9 outlines each agency's roles in ensuring that all mitigation measures are met prior to the issuance of a construction clearance to SDG&E.

8. MANAGEMENT OF HISTORIC PROPERTIES DURING CONSTRUCTION

ESTABLISH ESAS

In accordance with Mitigation Measure C-1e, sites that can be protected from direct impacts, but are within close proximity (within 50 feet) of proposed construction activities will be identified and labeled as ESAs. These sites may include those determined eligible for NRHP listing by the BLM, or others that have not had formal eligibility evaluations.

The ESAs will be designated by marking the boundaries of sites with appropriate buffer zones (generally a buffer of 5 meters beyond the outer limits of the site extent, as demonstrated by surface and/or subsurface indications) using temporary fencing or other easily recognizable boundary defining materials. These areas will be shown on the engineering plans for the project as off-limits to construction activities. Once established, an ESA will define areas where construction can occur while preventing construction activities and damage to archaeological resources within the marked ESA. ESAs will be established by a qualified archaeologist prior to initiation of ground disturbing activities and will be maintained for the duration of the work effort in the ESA vicinity, with archaeological and Native American monitoring of construction activities required near all ESA locations.

Full-time monitoring by a professional archaeologist and a Native American monitor will occur during all ground-disturbing activities near these ESAs. The monitors will be qualified archaeologists who are familiar with the types of historical and prehistoric resources that could be present in the Project and will be directly supervised by a Principal Archaeologist. The principal archaeological monitor will be approved by the BLM and CPUC.

TRAIN CONSTRUCTION PERSONNEL

In accordance with Mitigation Measures C1-e, C1-f, C-3a, and C-5a, archaeological and Native American monitors will be present during ground disturbing activity at selected locations based on the occurrence of recorded archaeological sites, ESAs, and the results of a buried sites testing program.

All archaeological and Native American monitoring during construction will be managed by Burns & McDonnell using their “Onetouch PM” software system, a central computer GIS-based monitoring software that runs on a Google Earth platform, which allows real time data input during construction regarding ESAs, project changes, monitoring results, and all other construction activities. The locations where monitors will be required will be input in the Onetouch PM program such that work will not be allowed to occur in a designated area if the appropriate monitors are not present. Changes to the project, requirements for ESA maintenance, construction scheduling and actions are all part of the Onetouch PM data system.

Training of all project construction personnel will be conducted prior to the commencement of construction activities in the manner set forth in Mitigation Measure C-1f as presented in Chapter 4. The training is called the Safe Worker Environmental Awareness Program (SWEAP) and has been approved by the CPUC and must be completed by all project personnel prior to entry into the project area. The training is generally consistent with the safety, biological resource (California Natural Community Conservation Planning), cultural resource and Native American sensitivity tailgates provided by SDG&E but provides specific Sunrise measures and guidance.

MONITORING BY ARCHAEOLOGISTS AND NATIVE AMERICANS

The following section describes how monitoring will be conducted in the vicinity of ESAs and other highly sensitive areas defined during the BSTP.

Full-time monitoring by a professional archaeologist and a Native American monitor will occur during all ground-disturbing activities near ESAs and in other areas determined appropriate for full-time monitoring, as detailed in the HPTP(s). The archaeological monitors will be qualified archaeologists who are familiar with the types of historical and prehistoric resources that could be present in the Project and will be directly supervised by a principal archaeologist. The principal archaeological monitor will be approved by the BLM and CPUC prior to construction. A monitor can prevent damage to a site by being able to communicate well with others involved in the project. Duties might involve:

1. Requesting excavation work to stop so that new discoveries can be evaluated;
2. Sharing information so that others will understand the cultural importance of the features involved;
3. Ensuring excavation or disturbance of the site is halted and the appropriate laws are followed when human remains are discovered;
4. Helping to ensure that Native American human remains and any associated grave items are treated with culturally appropriate dignity, as is intended by State law.

In addition to the areas identified above, a Native American monitor may be required at culturally sensitive locations as specified by the BLM following consultation with Native American tribes. The monitoring plan provided in the HPTP will indicate the specific portions of the project where Native American monitors will be required and shall specify the tribal affiliation of the required Native American monitor for each area. The scheduling and coordination of the Native American will be the responsibility of SDG&E.

A knowledgeable, well-trained Native American monitor/consultant (see Appendix E for suggested qualifications by the California Native American Heritage Commission) can identify an area that has been used as a village site, gathering area, burial site, etc. and estimate how extensive the site might be (CNAHC 2005). By acting as a liaison between Native Americans, archaeologists, developers, contractors and public agencies, a Native American monitor/consultant can ensure that cultural features are treated appropriately from the Native

American point of view. This can help others involved in a project to coordinate mitigation measures.

In accordance with the MMCRP, compliance with and effectiveness of cultural resources monitoring will be documented by SDG&E in a monthly report to be submitted to the BLM and CPUC for the duration of project construction. In the event that ESAs require modification, all project work in the immediate vicinity will be diverted to a buffer distance determined by the archaeological monitor until authorization to resume work has been granted by the BLM and CPUC. SDG&E will notify the BLM of any damage to cultural resource ESAs. If such damage occurs, SDG&E will consult with the BLM and CPUC to mitigate damages and to increase effectiveness of ESAs. At the discretion of the BLM 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 within or outside the license area, at the discretion of the BLM and CPUC.

Monitoring at ESAs

The establishment of ESAs is one non-destructive means to avoid impacts to recorded cultural resources within the Project. An ESA will be established to mark areas with a known site that are within 50 feet or less of a proposed construction activity but can be avoided during construction. ESAs may also be established within specific work areas, such as foundation work areas, road segments, pull sites, and construction yards. The boundary of these sites will be staked with construction fencing or stakes and flagging prior to construction and will be maintained and monitored during construction activities to maintain the protective barrier and to report on any violations of the protected areas.

In addition to areas with known sites, ESAs will be established in areas that are determined through testing to have a high potential for buried archaeological resources as described below under Mitigation Measure C-3a.

The ESAs will be designated by marking boundaries of known sites or other identified areas with appropriate buffer zones (generally a buffer of 5 meters beyond the outer limits of the site extent, as demonstrated by surface and/or subsurface indications) using temporary fencing or other easily recognizable boundary defining materials. For example there are a number of existing access roads that bisect recorded sites within the project area. Damage to these sites occurred during creation and use of the road segment; furthermore, these road segments, while being used for the SRPL project, will not be altered for construction. Protective barriers along the edges of these road segments will be installed to ensure that inadvertent damage does not occur during construction activities. Once established, an ESA will define areas where construction can occur while preventing construction activities and damage to archaeological resources within the marked ESA. ESAs will be established by a qualified archaeologist prior to initiation of ground disturbing activities and will be maintained for the duration of the work effort in the ESA vicinity, with archaeological and Native American monitoring of construction activities required near all ESA locations. The following subsections address the specific requirements for establishment and implementation of ESAs on USFS property.

Establishment and Implementation of ESAs in Accord with the Requirements of the USFS Regional Programmatic Agreement

All identified and recorded cultural resources on Cleveland National Forest (CNF) lands will be treated as historic properties for the purpose of the assessment of potential effects and all mitigations measures implemented in association with the proposed project, in accord with Part B of Section 1 (Scope and Objectives) of the First Amended Regional Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region (RPA). Part B specifically applies to the establishment and implementation of ESAs for the purpose of avoidance of potential effects to cultural resources contained in this HPMP. In accord with Stipulation III.D(3) of the RPA, all historic properties, and/or unevaluated properties that are within the APE will be managed and maintained in such a way that their potential National Register values are protected, primarily through the implementation of ESA.

Standard Resource Protection Measures (SRPM) for the avoidance of adverse effects to historic properties are defined and described in Attachment B of the RPA. Establishment and implementation of ESAs on CNF lands will be completed in accord with SRPM I(A)(2) by establishing a buffer zone of no less than 10 meters around historic properties, and SRPM I(B)(1), the use of flagging and avoidance of cultural resources for which NRHP eligibility is assumed for archaeological sites not evaluated. If historic properties are present within the SRPL undertaking APE and will be affected by the undertaking, and SRPM pursuant to Stipulation III.D(3)) contained in Attachment B of the RPA cannot or will not be implemented prior to ground disturbing activities associated with the SRPL, then the standard procedures outlined in 36 CFR §800 and this HPMP will be followed regarding the evaluation, determination of effects, review, and consultation associated with identifying historic properties and avoiding and/or mitigating potential adverse effects to identified historic properties.

When historic properties are identified following an intensive inventory or an approved sample inventory pursuant to Stipulation III.B(2)(b) of the RPA, and effective protection measures will be employed in accord with Attachment B of the RPA, no review or consultation with the SHPO or ACHP is required prior to implementing the undertaking. Information regarding undertakings with the potential to have effects on historic properties for which SRPM defined in the RPA are employed to avoid potential effects must be submitted to the SHPO with the Annual Report for review pursuant to Stipulation VI of the RPA. For this reason, a brief annual (calendar year) report summarizing the establishment, implementation, effectiveness, and any unresolved issues associated with the flagging and avoidance of historic properties within the SRPL APE will be prepared by SDG&E and submitted to the CNF Heritage Program Manager (HPM) by January 30 of each year that construction and cultural resource avoidance associated with the SRPL occur on CNF lands.

Monitoring at ESAs on USFS Property

Monitoring, both archaeological and Native American, of ground disturbing construction activities within the SRPL APE that are in proximity to or otherwise associated with an ESA on CNF land will be conducted as necessary to ensure that identified protection measures are

implemented effectively. The CNF Heritage Program Manager (HPM) will determine the schedule and requirements of any monitoring conducted in association with SRPL construction on CNF land. A permanent record shall be completed for each monitoring event, submitted to the CNF HPM in a timely manner, and kept on file at the CNF Forest Supervisor's Office. Inspection of monitoring or monitoring documentation by the SHPO may be performed during or after SRPL construction with advance notice and arrangement between the SHPO, the HPM, and the Agency Official for the undertaking (in this case, the BLM).

If and when SRPL construction activities change during implementation because of unforeseen circumstances, and these changes then require the adoption of the Standard Resource Protection Measures for previously identified historic properties, monitoring shall be required if the CNF HPM determines that available information is inadequate to determine whether these measures are appropriate. Monitoring may be determined to be appropriate if proposed activities are near known historic properties or cultural properties of importance to Native Americans, or if the effectiveness of identified protection measures is determined to be unreliable or problematic. If and when historic properties are discovered during SRPL construction, monitoring shall occur as early as possible to determine whether they may be affected by ongoing activities, and whether the use of Standard Resource Protection Measures is appropriate. Monitoring frequency and duration in these situations will be determined by the HPM.

If and when prescribed Standard Resource Protection Measures (SRPM) have not been implemented, and activities have occurred that may have affected any identified historic property, the following procedures will be implemented. If the undertaking has not been completed when the HPM receives notification that prescribed protection measures have not been followed, then all activities in the immediate vicinity of the historic property shall be suspended until a heritage resource professional examines the property and the HPM is consulted in order to recommend appropriate measures that will protect the historic property. The need for additional consultation will also be determined by the HPM before resumption of any suspended activities. If the property has not been affected, and Standard Resource Protection Measures can be effectively employed for the remaining implementation period, then the HPM may decide that the undertaking may resume without further consultation. If the HPM determines that historic properties may have been affected, consultation with the SHPO will be initiated in accordance with Stipulation V.A of the RPA, and civil and/or criminal penalties under the Archaeological Resources Protection Act (ARPA) or the Native American Graves Protection and Repatriation Act may be assessed.

If construction has been completed when the HPM receives notification that prescribed protection measures have not been followed, then a field inspection of affected historic properties will be initiated at the expense of SDG&E, and the provisions of Stipulations V.B and V.C of the RPA shall be followed. The circumstances surrounding the failure to use prescribed protection measures (if any) will be determined and described in the Annual Report.

If the HPM determines that proposed use of Standard Resource Protection Measures (SRPM) associated with an ESA might not provide adequate protection to an identified historic property because of the nature, scope, frequency, and/or duration of ground disturbance associated with a particular component of the SRPL construction process, monitoring in a manner prescribed by

the HPM will be carried out to verify that the protection measures are appropriately implemented and effective.

Where no known historic properties exist in the SRPL ADI based on the results of the intensive inventory, but uncertainty remains about the possible presence of historic properties because of identified observation limitations, inadequacy of information from the literature review, or other attributes that indicate a high potential for encountering cultural resources, monitoring may be required at any ground disturbing location on the CNF at any time during the implementation of SRPL construction if recommended by the HPM. The purpose of CNF recommended monitoring would be to ensure that unidentified historic properties, if present, are not irretrievably lost, damaged, or destroyed. If any historic properties are identified during the course of CNF recommended monitoring, the provisions of Stipulation V of the RPA shall be followed.

Monitoring at Highly Sensitive Areas Defined during the BSTP

While it is preferable to conduct BST rather than monitor during construction, it will not always be feasible to do so because of scheduling or other environmental considerations. Therefore, the BST and monitoring will be integrated, as follows:

- 1) Whenever feasible, BST will be conducted in all areas classified as having a high sensitivity for buried sites. Those segments where BST has been successfully completed, will not be monitored during construction;
- (2) If BST is not feasible in areas classified as high sensitivity for buried sites, those areas will be monitored during ground-disturbing construction activities;
- (3) Areas predicted to have low sensitivity will not be monitored during construction, unless observations made during BST suggest that there are areas that have higher sensitivity than originally predicted;

Following completion of the BST program, a brief report will be prepared to: summarize the field findings; reevaluate the sensitivity of each project segment; and report the final recommendations regarding areas to be monitored by a professional archaeologist during construction. Results will be incorporated into the HPTP and filed with the BLM and the CPUC after review by the consulting parties to the PA. The identified areas for monitoring will be input to the OneTouch PM system and identified on engineering plans to ensure compliance.

General Procedures for Monitoring of ESAs and BSTP Areas

Archaeological and Native American monitors will be present during all ground disturbance near ESAs to assure that the protective marking is maintained, any new discoveries are managed in compliance with the Unanticipated Discoveries plan (see below), and that known sites are not damaged during the construction work. The archaeological monitor will have copies of all site records and maps for known resources in the vicinity of work, and will keep that information confidential—to be shared only with the Native American consultants. The archaeological monitors will observe all ground disturbances for evidence of cultural resource materials. The archaeological and Native American monitors will be empowered to stop work in the event of a discovery in order to properly document such materials and assess the importance of any

discovery. Procedures to be followed in the event of a discovery are discussed below, in the section on Unanticipated Discoveries. An area of discovery will be secured and protected from any further damage while the determination of the additional course of action is determined.

All archaeological monitors are required to have the basic equipment needed to complete minimal documentation, preliminary evaluation, and recovery of unanticipated discoveries, including a screen, shovel, and bucket. If the evaluation or data recovery work prescribed by the BLM archaeologist is more extensive than the archaeological monitor alone can complete in an expeditious manner, the archaeological consultant will supply additional crew and equipment for the work. All recovered archaeological materials will be taken back to the consultant's laboratory for processing, analysis, reporting, and preparation for curation.

The construction foreman will notify the archaeological and Native American monitors at least 5 days prior to mobilization of work in all areas identified as requiring cultural resource monitoring. Standard guidelines, documentation and reporting forms for the archaeological monitors are included in the Appendix D, Field Methods.

Monitoring Reporting for ESAs and BSTP Areas

Preliminary archaeological monitoring summaries will be submitted weekly by the archaeological monitoring consultant for distribution to all consulting parties by email. Preliminary results will include the location of archaeological monitoring activities for the reporting time period, as well as a description of any cultural resources identified and appropriate actions taken. The archaeological consultant will prepare a monthly field monitoring verification report with the compiled archaeological monitor observations, results, and actions taken for submission to SDG&E. The report will be submitted to the agencies and other stakeholders after review by SDG&E.

Preliminary Native American monitoring summaries will be submitted weekly by the Native American monitoring consultant for distribution to all consulting parties by email. Preliminary results will include the location of monitoring activities for the reporting time period, as well as a description of any cultural resources or sacred sites identified and appropriate actions taken. The Native American consultant will prepare a monthly field monitoring verification report with the compiled Native American monitor observations, results, and actions taken for submission to SDG&E. The report will be submitted to the agencies and other stakeholders after review by SDG&E.

Upon completion of all monitoring tasks and requirements the archaeological consultant will prepare a monitoring report for the BLM and other stakeholders describing the monitoring program and the findings and results, and presenting a detailed professional description, analysis, and evaluation of any cultural resources that were encountered and evaluated during construction. Non-confidential data will also be disseminated to the public and other interested parties, as appropriate.

TREATMENT FOR UNANTICIPATED DISCOVERIES

In the event of an unanticipated discovery of archaeological materials within a work area during construction monitoring, all ground-disturbing work at the work area will be suspended as stipulated in the monitoring mitigation measures (Mitigation Measures C-5a, C-1e, and C-3a). The archaeological monitor will carefully inspect the ground surface around the discovery and the displaced dirt in order to determine whether the discovery is an isolated find (fewer than three items) or a site (three or more items, or a feature). If the find is determined to be an isolated find (with the exception of human remains), the discovery will be documented, reported and described in the monitoring report described above; all consulting parties will be apprised of such discoveries in the weekly monitoring summaries. Isolated finds will only be collected if they are diagnostic artifacts.

If the discovery is determined to be a site, after securing the work area from additional disturbance, in concert with the Construction Foreman or Field Supervisor, the archaeological monitor will notify the Principal Investigator (PI), who will notify the BLM archaeologist and the CPUC by telephone of the nature and extent of the discovery. In consultation with the PI, the BLM archaeologist will determine what additional fieldwork is necessary, such as limited test excavation, to determine the site's potential eligibility for the NRHP. It may be determined that a site visit by the BLM archaeologist or PI, is necessary to make that determination.

If test excavation is required to evaluate a discovery, the BLM archaeologist and the PI will formulate a testing program, and it will be implemented. In general any evaluation effort will be focused on the area of discovery within the project ADI including a reasonable buffer (not more than 10 meters from the maximum extent of the find). The focus will be to determine the nature of the archaeological resource and to assess the quantity, quality, and variety of preserved archaeological items that are or may be present. Evaluation will include shovel test pits of a sufficient number to characterize the extent of subsurface archaeological deposits and a minimum of one sample unit to evaluate the condition of the discovery and acquire a controlled sample of the preserved cultural materials.

A Native American monitor will be present during evaluation field work, as well as during any subsequent ground-disturbing work at the discovery location. After the site evaluation, the PI will have five business days in which to prepare a summary letter report assessing the site's eligibility and recommending appropriate treatment measures, such as the need for archaeological data recovery, if the site is recommended eligible. The letter report will be submitted to the BLM archaeologist, and the consulting parties to the PA as appropriate, who will have ten business days to review the report and evaluate the proposed treatment measures, if deemed necessary. Determinations concerning NRHP eligibility and the implementation of proposed treatment measures will be made by the BLM and submitted to the SHPO for concurrence for a ten day review period. If the determination is that the discovered resource does not qualify for nomination to the NRHP, the BLM will issue a written notice-to-proceed for all BLM land, in consultation with the CPUC for private and other lands and in consultation with the USFS HPM if the resource is on USFS property, or the Natural and Cultural Resources Manager on DOD land.

If a discovered site is determined to be eligible for the NRHP, further treatment measures will be required. In consultation with the BLM and other consulting parties, the PI will prepare a data recovery plan for BLM review and approval for all BLM land, and for review and consultation with the CPUC for private and other lands, for review and consultation with the USFS HPM if the resource is on USFS property (see below), or for review and consultation with the Natural and Cultural Resources Manager on DOD land. After review and concurrence, the BLM archaeologist will notify the PI that the proposed data recovery can proceed. Data recovery efforts will be focused only on that portion of the site within the APE with a reasonable buffer. To the degree possible the construction and engineering teams will be included in discussions to avoid or minimize potential damage to the discovered resource.

The level of effort will be dictated by the nature and extent of the discovery and on the results of the initial evaluation effort. The focus will be on recovering a sufficiently large sample to characterize the discovery and to address regional research questions, as appropriate. Upon completion of any required fieldwork the PI will prepare a brief interim letter report summarizing the results. The BLM archaeologist or other signatories to the PA will have five business days to review the report and determine whether or not construction work at the discovery can resume or if additional sampling is required. The BLM archaeologist in consultation with the other signatories to the PA will notify SDG&E when work can resume. A final data recovery report will be prepared after laboratory studies and analyses.

Inadvertent Discovery of Cultural Resources on USFS Property

If any previously unrecorded cultural resources are inadvertently discovered during operation or maintenance activities associated with the SRPL within the CNF boundary, all ground-disturbing activities in the vicinity of the discovery must cease immediately, appropriate steps to secure the discovery must be taken, and the CNF Heritage Program Manager (HPM) must be notified prior to implementation of any other protocol for inadvertent discovery of cultural resources set forth in this HPMP. Additionally, the BLM must be notified immediately. Ground disturbing activities in the vicinity of the discovery may only be resumed upon approval of the CNF HPM. Any questions regarding the cultural resource management requirements associated with the SRPL permit should be directed to the CNF HPM at (858) 674-2973. Failure to properly implement SRPM, establish ESA, or report inadvertent discoveries or effects to cultural resources may result in civil and or criminal liability under the Archaeological Resources Protection Act (ARPA) (16 USC 470), and may be cause for the CNF to suspend or revoke any SRPL Special Use Permit.

TREATMENT OF HUMAN REMAINS

In accordance with Mitigation Measure C-2a, if human remains are encountered during construction monitoring, the following protocol will be adhered to. The Native American Graves Protection and Repatriation Act (NAGPRA), as implemented by 43 CFR Sections 10.4-10.6, presents procedures for the treatment of human remains, associated funerary objects, sacred objects, and objects of cultural patrimony located on federal land. Relevant sections of these regulations are reproduced in Appendix G. As the lead federal agency on the SRPL project, the

BLM will be responsible for government-to-government consultation with affected Native American Tribes concerning all potential NAGPRA issues.

If any previously unrecorded human remains are inadvertently discovered during operation or maintenance activities associated with the SRPL within the CNF boundary, all ground-disturbing activities in the vicinity of the discovery must cease immediately, appropriate steps to secure the discovery must be taken, and the CNF Heritage Program Manager (HPM) must be notified prior to implementation of any other protocol for inadvertent discovery of cultural resources set forth in this HPMP. Ground disturbing activities in the vicinity of the discovery may only be resumed upon approval of the CNF HPM. Any questions regarding the cultural resource management requirements associated with the SRPL permit should be directed to the CNF HPM at (858) 674-2973. Failure to properly implement SRPM, establish ESA, or report inadvertent discoveries or effects to human remains may result in civil and or criminal liability under the Archaeological Resources Protection Act (ARPA) (16 USC 470), and/or the Native American Graves Protection and Repatriation Act (NAGPRA) (43 CFR 10), and may be cause for the CNF to suspend or revoke any SRPL Special Use Permit.

California State law (Health and Safety Code Section 7050.5; Public Resources Code Sections 5097.94, 5097.98 and 5097.99) will be followed on state, county and private land. This law specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered. The BLM, CPUC, SDG&E, and any on-site Native American monitor will be notified of the discovery. For discoveries within Imperial County, the CPUC will immediately contact the Imperial County Coroner, and for discoveries in San Diego County, the CPUC will contact the Office of the Medical Examiner (ME). The Coroner or ME has two working days to examine the remains after being notified by the CPUC. Under some circumstances a determination may be made without direct input from the Coroner or ME. When the remains are determined to be Native American, the Coroner or ME has 24 hours to notify the Native American Heritage Commission (NAHC) who will determine the Most Likely Descendant.

The NAHC will immediately notify the identified Most Likely Descendant (MLD) and the MLD has 24 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 24 hours, the area of the property must be secured from further disturbance. If there are disputes between the landowner and the nearest likely descendants, the NAHC will mediate the dispute to attempt to find a resolution. If mediation fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall re-enter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

CURATION

Prior to the commencement of construction, SDG&E will establish a curation agreement for the permanent curation of all cultural resources collected during any phase of archaeological work associated with the SRPL FESSR, preferably with the San Diego Archaeological Center

(SDAC), a federally recognized curation facility (Appendix F). Cultural materials recovered from private land will be covered by a waiver signed by the individual property owners as part of the ROW and easement negotiations with individual private property owners. It is anticipated that all archaeological materials collected from private property will be curated at the SDAC.

9. AGENCY ROLES AND RESPONSIBILITIES

This chapter outlines each agency's roles and responsibilities in ensuring that all mitigation measures are met. The BLM is the lead agency for Section 106 compliance with the Cleveland National Forest, Marine Corps Air Station Miramar, and the U.S. Army Corps of Engineers as participant signatories to the PA. The CPUC is the lead State agency for compliance with the California Environmental Quality Act and has certain responsibilities under State laws and regulations to take into account and mitigate the effects of the undertaking on historic properties eligible for or included on the California Register of Historic Places and is coordination compliance with State law with BLM responsibilities to comply with Section 106 of the NHPA.

BLM

As the NEPA and NHPA Lead Agency, and in accordance with the PA, the BLM is responsible for ensuring that mitigation measures are implemented within the project's APE on all federal, state and private land. The BLM is coordinating with the CPUC for the implementation of mitigation measures before, during, and after construction of the SRPL Project. No activities may occur on BLM-managed lands without BLM approval.

The El Centro Field Manager is the authorized officer to make BLM decisions pertinent to this project. The Field Manager will issue all authorizations or permits for the use of BLM land. For portions of the project on lands under the jurisdiction of the Palm Springs/South Coast Field Office, the El Centro Field Manager will seek concurrence with the Palm Springs/South Coast Field Manager before issuing any decision.

The BLM Project Manager reports to the Field Office Manager and is responsible for coordinating the implementation of the project between the BLM staff at the field, district, and state office levels. The Project Manager is the primary point of contact with the SDG&E and other agencies for review of documents, reports, mitigation progress, and project planning.

USFS

The approved project route crosses lands under jurisdiction of the U.S. Department of Agriculture (USDA) Forest Service on Cleveland National Forest (CNF), and therefore, requires issuance of a Special Use authorization from the Forest Service. As a result, the Forest Service was a Cooperating Agency during preparation of the Final EIR/EIS in compliance with NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the USDA Forest Service Handbook (CFR 1909.15, Environmental Policy and Procedures Handbook).

The Forest Service's Record of Decision has not been issued as of April 2010, but will document the decision to issue a Special Use Permit (SUP) to SDG&E for the construction, maintenance,

and use of the 500 kV and 230 kV transmission lines along with ancillary improvements within the Descanso Ranger District of the CNF. The SUP will be signed by the Forest Supervisor.

The SUP incorporates the appropriate terms and conditions that apply to National Forest System (NFS) lands, and is monitored and enforced by the Forest Service. No activities may occur on Forest lands without Forest Service and CPUC approval.

The Forest Supervisor will issue the permit if the project is approved by the Forest Service, and is responsible for the overall permit administration. Decisions to amend the permit or revoke or suspend permit operations are made at this level.

The District Ranger is delegated the authority to administer the day-to-day activities associated with the permit. The District Ranger may approve plans and activities as required under the permit, issue NTPs for activities on NFS lands, and would issue letters of non-compliance if necessary.

The District Special Uses staff handles the permit administration for the District Ranger and Forest Supervisor, including preparation of correspondence, plan review, NTPs, and field inspections.

The Permit Monitor is responsible for monitoring compliance with permit requirements in the field. The permit monitor documents observations and provides summaries of key findings to the Permit Administrator and Authorized Officer. Several permit monitors will be assigned to the project.

The Project Coordinator reports to the Forest Lands Staff Officer and is responsible for coordinating the permit implementation between the various staff units on the Cleveland National Forest. The Project Coordinator is the primary point of contact with the permittee and other agencies for plan review and approval prior to the SUP being issued.

CPUC

The CPUC will issue NTPs for construction of each segment identified by SDG&E. Where a NTP covers BLM, CNF, CDFG, or other jurisdictional lands, the CPUC's NTP does not authorize construction to start, but only documents compliance with all relevant mitigation measures and permit conditions. *No construction may occur on BLM or CNF or other jurisdictional lands without specific approval by those agencies.*

OTHER CONSULTING PARTIES

A portion of the approved route east of Sycamore Canyon Substation (approximately 0.7 miles) and the Sycamore-Elliot reconductoring would cross lands owned by the Department of Defense (DoD) MCAS Miramar. Therefore, MCAS Miramar was a Cooperating Agency for the EIR/EIS under NEPA. As part of the project, SDG&E must obtain the following permits from MCAS

Miramar: FAR Part 77 Request (via FAA) and SECNAVINST 11011.47A (for access roads outside of the easement).

Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972) authorizes the U.S. Army Corps of Engineers (ACOE) to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands associated with the approved project. The ACOE issues individual site-specific or general (Nationwide) permits for such discharges. ACOE issuance of a Section 404 permit triggers the requirement that a Section 401 certification also be obtained. No activities that would potentially affect waters of the U.S. or adjacent wetlands may occur until the Section 404 permits are approved and certified.

10. REVIEW AND UPDATE PROCEDURES

ADOPTION OF THE HPMP

The BLM will finalize this HPMP after the review period as laid out in section IV.B of the Sunrise Powerlink PA (Appendix A).

REVIEW OF THE HPMP

As stipulated in section IV.B of the Sunrise PA, the BLM shall submit all components of this HPMP to all consulting parties to the PA for a 45-day review period. Absent comments within this time frame, the BLM may assume the reviewing consulting parties' concurrence. The BLM will provide the reviewing consulting parties with written documentation indicating whether and how the original HPMP was modified in response to any timely comments received within 30 days. The BLM will provide the consulting parties a copy of the revised HPMP. Any disputes that may arise between the BLM and another consulting party over the content of the HPMP shall be resolved in accordance with the Sunrise PA stipulation VII (Appendix A).

AMENDMENT PROCEDURES

In consultation and agreement with the consulting parties, components of the HPMP, such as the final inventory and impact assessment, buried site testing plan, and results of the buried site testing program and sensitivity modeling may be prepared at a later time and be will incorporated into the HPMP by amendment as agreed. Ongoing project design changes that avoid impacts to cultural resources or conversely result in potential impacts to additional cultural resources that are not addressed in the HPMP will also be amended to the final HPMP, or will be addressed in a separate HPTP.

As stipulated in section IV.B of the Sunrise PA, the BLM shall submit all amended components of this HPMP to all consulting parties to the PA for a 45-day review period. Absent comments within this time frame, the BLM may assume the reviewing consulting parties' concurrence. The BLM will provide the reviewing consulting parties with written documentation indicating whether and how the original HPMP was modified in response to any timely comments received within 30 days. The BLM will provide the consulting parties a copy of the amended HPMP or HPMP component. Any disputes that may arise between the BLM and another consulting party over the content of the HPMP shall be resolved in accordance with the Sunrise PA stipulation VII (Appendix A).

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