BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV: Mascot Substation Project	)))))))	Application No. _____ (Filed November 25, 2009)

PROPONENT'S ENVIRONMENTAL ASSESSMENT MASCOT SUBSTATION PROJECT

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LIST OF ACRONYMS

AB	Assembly Bill
AC	Alternating current
ACSR	Aluminum conductor steel reinforced
APLIC	Avian Powerline Interaction Committee
APM	Applicant Proposed Measure
BMP	Best Management Practice
BN&SF	Burlington Northern & Santa Fe
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCAP	Climate Change Action Plan
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH_4	Methane
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent
CNPS	California Native Plant Society
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHP	California Register of Historical Places
CRHR	California Register of Historical Resources
CRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DC	Direct current
DWR	Department of Water Resources
EIR	Environmental Impact Report
EMT	Emergency medical technician
EPRI	Electric Power Research Institute
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration

List of Acronyms

G.O.	General Order
GHG	Greenhouse Gas
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
HCP	Habitat Conservation Plan
IEEE	Institute of Electrical and Electronics Engineers
KART	Kings Area Rural Transit
kcmil	Thousand circular mils
KCWD	Kings County Water District
kV	Kilovolt
Leq	Equivalent noise level
LOS	Level of service
LWS	Light weight steel
MEER	Mechanical and Electrical Equipment Room
MVA	Megavolt ampere
MVAR	Megavolts ampere reactive
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NERC	North American Electric Reliability Corporation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historical Places
O_3	Ozone
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
PM_{10}	Particulate matter measuring less than 10 microns
$PM_{2.5}$	Particulate matter measuring less than 2.5 microns
ppm	Parts per million
PTC	Permit to Construct
PVC	Polyvinyl chloride
ROW	Right-of-way

List of Acronyms

RWQCB	Regional Water Quality Control Board
SAC	Stranded aluminum conductor
SCE	Southern California Edison Company
SF_6	Sulfur hexafluoride
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVR	San Joaquin Valley Railroad
SLF	Sacred Lands File
SPAL	Small Project Analysis Level
SPCC	Spill Prevention Control and Countermeasure
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TSP	Tubular Steel Pole
USACE	US Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	United States Geological Survey
WATCH	Work Area Protection and Traffic Control Manual
WEAP	Worker Environmental Awareness Training
WECC	Western Electricity Coordinating Corporation

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EXECUTIVE SUMMARY

This Proponent's Environmental Assessment (PEA) evaluates the potential environmental impacts of Southern California Edison Company's (SCE) Mascot Substation Project (Proposed Project). The purpose of this project is to serve current and projected demand for electricity, and maintain electric system reliability in portions of the City of Hanford and the surrounding areas of unincorporated Kings County within SCE's service territory (Electrical Needs Area).

The Proposed Project has a planned operation date of June 2012 to ensure that safe and reliable electric service is available to serve customer electrical demand in the City of Hanford and the surrounding areas of unincorporated Kings County.

The Proposed Project would include the following major components:

- A new 66/12 kilovolt (kV) distribution substation on an approximately five acre site
- Construction of new 66 kV subtransmission line segments to serve the new substation; more specifically, the Goshen-Hanford 66 kV subtransmission line would be looped into Mascot Substation and the Hanford-Liberty 66 kV subtransmission line, approximately two miles away, would be tapped and connected to the Mascot Substation with a new single-circuit 66 kV subtransmission line segment
- Construction of four new 12 kV distribution circuits
- Facilities to connect the substation to SCE's existing telecommunication system

This PEA includes the information required by the California Public Utilities Commission's (CPUC) Proponent's Environmental Assessment (PEA) Guidelines (State of California Public Utilities Commission Information and Criteria List, Appendix B, Section V), as well as the CPUC's requirements for a Permit to Construct (PTC) pursuant to General Order 131-D (D.94-06-014, Appendix A, as modified by D.95-08-038). The CPUC requires applicants to provide this information for review in compliance with the mandates of the California Environmental Quality Act (CEQA). This PEA is designed to meet the above-mentioned CPUC requirements.

Following a discussion of the purpose and need for the project (Chapter 1), the alternatives (Chapter 2), and the project description (Chapter 3), this PEA evaluates the potential environmental impacts of the Proposed Project and the Alternative (Chapter 4). Potential impacts are assessed for all environmental factors contained in the most recent CEQA Environmental Checklist Form (Appendix A). With the implementation of Applicant Proposed Measures listed in Table ES.1, Applicant Proposed Measures, the PEA concludes that the Proposed Project would have a less than significant effect to all environmental resources.

Table ES.1 Applicant Proposed Measures

Applicant Proposed Measure	Description
APM-PAL-01 Develop and Implement a Paleontological Monitoring Plan	A project paleontologist meeting the qualifications established by the Society of Vertebrate Paleontologists shall be retained by SCE to develop and implement a Paleontological Monitoring Plan prior to the start of ground disturbing activities for the Proposed Project. As part of the Paleontological Monitoring Plan, the project paleontologist shall establish a curation agreement with an accredited facility prior to the initiation of ground-disturbing activities. The Paleontological Monitoring Plan shall also include a final monitoring report. If fossils are identified, the final monitoring report shall contain an appropriate description of the fossils, treatment, and curation.
APM-PAL-02 Paleontological Monitoring at the Proposed Project Substation Site	A paleontological monitor shall be on site to observe ground-disturbing activities at depths greater than 3 feet at the Proposed Project substation site. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.
APM-PAL-03 Paleontological Monitoring for Installation of Subtransmission Structures	A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the 66 kV subtransmission structures. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.
APM-PAL-04 Paleontological Monitoring for Installation of Telecommunication Duct Banks	A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the telecommunication duct banks. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

A comparison of alternatives is described in Chapter 5. No cumulative impacts or growth-inducing impacts (Chapter 6) were identified for the Proposed Project.

The names and titles of persons assisting in the preparation of this document are listed in Appendix B.

1.0 PURPOSE AND NEED

1.1 Project Overview

Southern California Edison Company (SCE) proposes to construct the Mascot Substation Project (Proposed Project) to meet forecasted electrical demands in the City of Hanford and the surrounding areas of unincorporated Kings County. The Proposed Project would include the following components:

- A new 66/12 kilovolt (kV) distribution substation on an approximately five acre site
- Construction of new 66 kV subtransmission line segments to serve the new substation; more specifically, the Goshen-Hanford 66 kV subtransmission line would be looped into Mascot Substation and the Hanford-Liberty 66 kV subtransmission line, approximately two miles away, would be tapped and connected to the Mascot Substation with a new single-circuit 66 kV subtransmission line segment
- Construction of four new 12 kV distribution circuits
- Facilities to connect the substation to SCE's existing telecommunication system

The Proposed Project has a planned operation date of June 2012 to ensure that safe and reliable electric service is available to serve customer electrical demand in the City of Hanford and the surrounding areas of unincorporated Kings County.

1.2 Project Purpose

Under the rules, guidelines, and regulations of the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), the Western Electricity Coordinating Corporation (WECC), and the California Public Utilities Commission (CPUC), electrical transmission, subtransmission, and distribution systems must have sufficient capacity to maintain safe, reliable, and adequate service to customers. System safety and reliability must be maintained under normal conditions, when all facilities are in service, and also under abnormal conditions. Abnormal conditions result from equipment or line failures, maintenance outages, or outages that cannot be predicted or controlled due to weather, earthquakes, traffic accidents, and other unforeseeable events. The purpose of the Proposed Project is to ensure the availability of safe, reliable, and adequate electric service to meet SCE's customer electrical demand.

1.3 Project Need

The Electrical Needs Area for the Proposed Project is defined as the City of Hanford and the surrounding unincorporated areas of Kings County located within SCE's service territory and served by Hanford Substation (please see Figure 1.1, Electrical Needs Area). Hanford Substation provides electrical service to approximately 23,600 metered customers[1] and serves forecasted electrical demand within the Electrical Needs Area. Hanford Substation is one of twenty-three 66 kV substations served by the Rector 220/66 kV System.

SCE's planning process is designed to ensure that the required capacity and operational flexibility is available to safely and reliably meet the projected peak electrical demands during normal conditions as well as periods of extreme heat. Periods of extreme heat are defined as time periods when the temperature exceeds the 10-year average peak temperature are termed "1-in-10 year heat storms." SCE adjusts the normal condition peak demand to reflect the forecasted peak demand during a 1-in-10 year heat storm. When this forecasted adjusted peak demand exceeds the maximum operating limits of the existing electrical facilities, a project is proposed to keep the electrical system within specified loading limits.

Table 1.1, Electrical Needs Area Substation Capacity and Peak Demand, shows the maximum operating limit, peak demand, and the forecasts of normal peak demand and 1-in-10 year peak demand, and Figure 1.2, Electrical Needs Area Substation Capacity and Peak Demand, shows trendlines for the operating limits and the actual and forecasted peak demand information. As shown in Table 1.1, Electrical Needs Area Substation Capacity and Peak Demand, the 1-in-10 year heat storm forecast exceeded the capacity limits of Hanford Substation in 2008. If a 1-in-10 year heat storm had occurred in 2008, the normalized 1-in-10 load would have exceeded the capacity limits of the Hanford Substation. A 1-in-10 year heat storm did not occur during Summer 2008, and the electrical system was operated within the maximum operating limits of the equipment. However, to prepare for sufficient capacity to serve projected peak load in 2009, SCE installed a 16.8 megavolt ampere (MVA) transformer bank at Hanford Substation as a contingency measure.

[1] The Hanford Substation also operates six 66/4 kV transformers that serve approximately 750 metered customers. These transformers have limited capacity, and new customer service requests are typically not connected to circuits served from these transformers.

Figure 1.1 Electrical Needs Area

Figure 1.1 Electrical Needs Area

Figure 1.2 Electrical Needs Area Substation Capacity and Peak Demand

Figure 1.2 Electrical Needs Area Substation Capacity and Peak Demand

Table 1.1 Electrical Needs Area Substation Capacity and Peak Demand

Actual	**2004**	**2005**	**2006**	**2007**	**2008**
Maximum Operating Limit (MVA)	133	133	133	133	133
Peak Demand (MVA)	101	109	120	122	124
Forecasted	**2009**[†]	**2010**	**2011**[‡]	**2012**	**2013**
Planned Maximum Operating Limit (MVA)	*150*	*150*	*162*	145	145
Forecasted Peak Demand Normal Conditions (MVA)	130	133	140	145	153
Forecasted Peak Demand 1-in-10 Year Heat Storm (MVA)	142	146	153	158	168
Forecasted	**2014**	**2015**	**2016**	**2017**	**2018**
Planned Maximum Operating Limit (MVA)	145	145	145	145	145
Forecasted Peak Demand Normal Conditions (MVA)	159	165	171	177	183
Forecasted Peak Demand 1-in-10 Year Heat Storm (MVA)	175	181	188	194	201

Note: MVA: megavolt ampere
Contingency electrical capacity shown in italics
[†]The planned maximum operating limit of the Hanford Substation was temporarily increased from 133 MVA in 2008 to 150 MVA in 2009 when a contingency transformer bank was installed. This transformer bank will serve electrical load at Hanford Substation until the Mascot Substation Project is completed in 2012, and the transformer would then be moved and permanently installed to operate at Mascot Substation.
[‡] As described below, SCE may need to reconductor the 12 kV bus to add capacity to Hanford Substation if it becomes necessary to serve projected electrical demand prior to the start of Mascot Substation operation.

As shown in the table above, despite the transformer contingency measure operating at Hanford Substation, the forecasted electrical demand is expected to exceed the capacity at Hanford Substation for a 1-in-10 year heat storm in 2011. As such, if necessary, SCE may also reconductor the 12 kV bus at Hanford Substation to increase capacity by approximately 12 MVA and serve the projected load until Mascot Substation Project begins operation in 2012. After the contingency measure transformer bank is moved from Hanford Substation to Mascot Substation in 2012, the capacity at Hanford Substation would be 145 MVA (133 MVA + 12 MVA), if the bus reconductor occurs. Although there is enough mitigation capacity to meet the load requirements at Hanford Substation until 2013, Mascot Substation is needed in 2012 in order to return the system to its normal operating conditions so that SCE can safely and reliably serve customer load.

1.4 Electrical System Evaluation

To address the capacity shortfall discussed in Section 1.3, Project Need, SCE evaluated several system modification scenarios for its ability to provide capacity to the Electrical Needs Area. SCE uses a four-step process to develop system modification scenarios, summarized below.

Step 1. Perform technical engineering analyses to determine whether modifying electrical equipment at existing facilities could accommodate the forecasted peak electrical demand.

Step 2. If the forecasted electrical demand cannot be accommodated by modifying existing electrical facilities, then develop system upgrade scenarios that consider new facilities.

Step 3. Evaluate each system upgrade scenario in consideration of the following criteria:

- The extent to which the scenario would substantially meet the forecasted electrical demand; and
- The feasibility of a scenario considering capacity limits, ability to upgrade the system on existing sites, and economic viability

Step 4. If a scenario is not feasible, eliminate it from further consideration.

1.4.1 System Upgrade Scenarios

1.4.1.1 System Upgrade Scenario 1: Mascot Substation Project

System Upgrade Scenario 1 includes the following elements:

- Construction of a 56 megavolt ampere (MVA) 66/12 kV substation
- Construction of new 66 kV subtransmission line segments to serve the new substation
- Construction of four new 12 kV distribution circuits
- Installation of telecommunication facilities to connect the new substation to SCE's telecommunication network

System Upgrade Scenario 1 would provide the following electrical benefits:

- The new substation would provide 56 MVA of new capacity beginning in June 2012 to meet long-term electrical demand requirements, and would be expandable to an ultimate buildout of 112 MVA of nameplate capacity
- Improve electrical system operational flexibility and reliability by providing the ability to transfer load between 12 kV distribution circuits and distribution substations within the Electrical Needs Area
- The new substation would be placed in an area to relieve Hanford Substation of overload conditions and serve long-term forecasted electrical demand in the City of Hanford and unincorporated areas of Kings County

1.4.1.2 System Upgrade Scenario 2: Add Capacity at an Existing Substation

Other than the transformer contingency measure and the 12 kV bus reconductor project previously described above, there are no other feasible capacity increases available at Hanford Substation due to limited space for additional transformers, switchracks, circuit breakers, capacitor banks, duct banks, and other related substation components. Even with the transformer contingency measure and the 12 kV bus reconductor project, the maximum temporary capacity of Hanford Substation would be 162 MVA. SCE forecasts that the peak demand in a 1-in-10 year heat storm would be 168 MVA in 2013, exceeding even the temporary capacity. Additionally, the operation restrictions associated with the contingency transformer bank impedes SCE's ability to reliably serve existing customer electrical demand, as well as to quickly restore service following a service interruption.

System upgrades at Goshen Substation, the next nearest 66/12 kV substation, are also not feasible. Goshen Substation is approximately 12 miles from Hanford Substation. Distribution circuits extending from Goshen Substation to serve the Electrical Needs Area would be excessively long in length, and as a distribution circuit increases in length, the potential for electrical service interruptions also increases. As a result, any capacity increases at Goshen Substation would have a diminished effect to electrical service reliability in the Electrical Needs Area due to the long length of distribution circuits.

1.4.1.3 System Upgrade Scenario 3: No Project Alternative

Under the No Project Alternative, no action would be taken. The No Project Alternative would involve no construction and no modification to the existing system. There would be no electrical benefit to the No Project Alternative.

1.4.2 System Evaluation Results

System Upgrade Scenario 1, Mascot Substation Project, would provide the needed additional capacity in the vicinity of load to serve load in the Electrical Needs Area on a long-term basis. Hanford Substation is located near the western boundary of SCE's service territory. A new substation placed to the north east of Hanford Substation would be able to serve electrical demand to the north and east of Hanford Substation. This configuration would relieve Hanford Substation of overload conditions, and increase electrical service reliability in the region by providing sufficient capacity for Hanford Substation to serve forecasted increases in electrical demand developing to the west of the substation. Therefore, System Upgrade Scenario 1 has been selected to provide the increased capacity needed to serve the Electrical Needs Area.

System Upgrade Scenario 2, Add Capacity at an Existing Substation, is not a viable option because there are no feasible opportunities for the necessary capacity increases at Hanford Substation. As stated above, Goshen Substation has limited opportunities for capacity increases, and any capacity increases would have a diminished effect due to the long lengths of distribution lines required to serve forecasted electrical demand. Because this alternative does not reliably add long-term capacity to the Electrical Needs Area, it is

eliminated from further consideration in this Proponent's Environmental Assessment (PEA).

System Upgrade Scenario 3, the No Project Alternative, is not a viable option because it would prevent SCE from providing safe and reliable electrical service to its customers in the Electrical Needs Area. This alternative would result in a reduced level of reliability, leading to rolling blackouts. Therefore, System Upgrade Scenario 3, the No Project Alternative, is eliminated from further consideration in this PEA.

1.5 Basic Objectives

The California Environmental Quality Act (CEQA) and CEQA Guidelines (Section 15126.6(a)) require consideration of a reasonable range of alternatives to a proposed project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. SCE has identified the following basic objectives to meet the Proposed Project's purpose and need as described in this chapter:

- Serve long-term electrical demand requirements in the Electrical Needs Area beginning in 2012
- Construct the new electrical facilities to be located northeast of the City of Hanford, in order to maximize electrical benefits in the Electrical Needs Area
- Provide greater operational flexibility to transfer load between lines and substations within the Electrical Needs Area and the surrounding area
- Provide safe and reliable electrical service consistent with SCE's planning and operation guidelines
- Meet project need while minimizing environmental impacts

SCE considered these objectives in developing a reasonable range of alternatives. Chapter 2, Project Alternatives, describes the alternatives development process and the selection of alternatives for analysis in this PEA.

2.0 PROJECT ALTERNATIVES

CEQA and the CEQA Guidelines (Section 15126.6(a)) require that an environmental impact report describe a reasonable range of alternatives to a proposed project or the location of the proposed project that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project. CEQA Guidelines Section 15126.6(d) requires that sufficient information about each alternative be included to allow meaningful evaluation and analysis.

The following sections describe the development of alternatives and the selection of the preferred alternative for the substation site and subtransmission line route.

2.1 Substation Site and Subtransmission Line Route Evaluation Methodology

SCE defined a portion of the Electrical Needs Area as the Substation Target Area. A new substation operating within the Substation Target Area would maximize electrical benefits to serve the purpose and need for the project. The Substation Target Area was developed using the following basic requirements:

- The substation site should be in close proximity to the existing Goshen-Hanford 66 kV subtransmission line allowing for sufficient separation from Hanford Substation
- The substation site should be in close proximity to the existing electrical demand

After a review of potential sites located within the Substation Target Area, SCE identified two potential substation sites and two potential subtransmission line segments that would connect the new substation to two existing subtransmission lines in the area. This configuration is shown on Figure 2.1, Mascot Electrical Needs Area System Configuration.

2.2 Substation Site Alternatives Considered

The substation design and specifications would be similar whether the substation is constructed on Site Alternative A or Site Alternative B. However, orientation of the equipment within each site would depend on the relative location of the existing subtransmission lines and public streets. The substation site alternatives are shown on Figure 2.2, Project Siting Alternatives.

2.2.1 Site Alternative A

Substation Site Alternative A is located on an approximately five acre portion of an approximate 157-acre parcel. The parcel is located at the southwest corner of the intersection of 7-1/2 Avenue and Grangeville Boulevard in unincorporated Kings County. The site is presently used for growing alfalfa. There is an existing overhead Pacific Gas and Electric Company (PG&E) powerline corridor bordering the site to the east, and the

alfalfa field extends to the west and south of the site. Access to the site would be from Grangeville Boulevard.

2.2.2 Site Alternative B

Substation Site Alternative B is located on an approximately five acre portion of an approximate 128-acre parcel. The parcel is located at the northeast corner of the intersection of 7-1/2 Avenue and Grangeville Boulevard in unincorporated Kings County. The site is presently used for growing alfalfa. There is an existing overhead PG&E powerline corridor bordering the site to the west, and the alfalfa field extends to the east and north of the site. Access to the site would be from 7-1/2 Avenue.

2.3 Subtransmission Line Route Alternatives Considered

The two nearest 66 kV subtransmission lines to both Site Alternative A and Alternative B are the Goshen-Hanford 66 kV subtransmission line and the Hanford-Liberty 66 kV subtransmission line (see Figure 2.2, Project Siting Alternatives). Each of these two 66 kV subtransmission lines would be utilized to energize the Mascot Substation.

Because Substation Site Alternative A and Substation Site Alternative B are in close proximity to each other, the alternative 66 kV subtransmission line routes can be constructed to either site.

2.3.1 Subtransmission Line Route Alternative 1

The first segment of the Subtransmission Line Route Alternative 1 originates at the Goshen-Hanford 66 kV subtransmission line and would be looped into the substation at the intersection of Grangeville Boulevard and 7-1/2 Avenue in unincorporated Kings County. From the substation site, another subtransmission line segment would be constructed along private property (7-1/2 Avenue extended south to East Hanford-Armona Road) and connected to (tapping) the existing Hanford-Liberty 66 kV subtransmission line near the intersection of East Hanford-Armona Road and 7-1/2 Avenue in unincorporated Kings County. The majority of Subtransmission Line Route Alternative 1 would be located within a new easement, up to 25 feet in width, to be acquired. The new easement would be adjacent and parallel to the existing PG&E powerline easement.

In total, Subtransmission Line Route Alternative 1 is approximately two miles long, and crosses land primarily used for agricultural purposes.

2.3.2 Subtransmission Line Route Alternative 2

The first segment of the Subtransmission Line Route Alternative 2 originates at the Goshen-Hanford 66 kV subtransmission line and would be looped into the substation at the intersection of Grangeville Boulevard and 7-1/2 Avenue in unincorporated Kings County. From the substation site, a second 66 kV subtransmission line segment of the

Figure 2.1 Mascot Electrical Needs Area System Configuration

Figure 2.1 Mascot Electrical Needs Area System Configuration

Figure 2.2 Project Siting Alternatives

Figure 2.2 Project Siting Alternatives

Subtransmission Line Route Alternative 2 would extend north along 7-1/2 Avenue to East Fargo Avenue, where it would turn east on East Fargo Avenue to 6th Avenue, and continue south along 6th Avenue to East Hanford-Armona Road. At the intersection of 6th Avenue and East Hanford-Armona Road, the subtransmission line segment would connect to (tap) the existing Hanford-Liberty 66 kV subtransmission line.

Subtransmission Line Route Alternative 2 may result in a greater number of subtransmission poles installed than the existing distribution poles that would be replaced along this route. The subtransmission poles would be placed within the street ROW on the same side of the street as the existing distribution poles, and may require additional overhang easement rights.

In total, Subtransmission Line Route Alternative 2 is approximately 5.5 miles long and follows existing roadways, and is adjacent to land presently used for agricultural and rural residential purposes.

2.4 Substation Site and Subtransmission Line Route Recommendation

Both substation site alternatives meet the basic objectives of the project, and each 66 kV subtransmission line route alternative has the ability to serve each substation site. As shown on Figure 2.2, Project Siting Alternatives, there are several existing SCE subtransmission lines in addition to the PG&E powerline crossing the area. Each crossing of a subtransmission line or powerline could potentially result in a modification of the existing line, requiring additional construction and electrical service outages.

Table 2.1, Comparison of Alternative Combinations, summarizes the route distance and number of subtransmission and powerline crossings for each combination of substation and subtransmission line route alternatives. The crossings are shown on Figure 2.3, Subtransmission Line Crossings and Alternatives Combinations. Substation Site Alternative A and Subtransmission Line Route Alternative 1 would not require crossings of existing SCE subtransmission lines or the PG&E powerline, and has the shortest subtransmission route. As a result, Substation Site Alternative A was selected as the preferred substation site and Subtransmission Line Route Alternative 1 was selected as the preferred route.

Table 2.1 Comparison of Alternative Combinations

Scenario	Potential Number of Subtransmission/ Powerline Crossings	Approximate Construction Distance
Substation Site A + Alternative Route 1	0	2.0 miles
Substation Site A + Alternative Route 2	4	5.5 miles
Substation Site B + Alternative Route 1	2	2.1 miles
Substation Site B + Alternative Route 2	4	5.4 miles

2.5 Proposed Project

SCE proposes to construct the Mascot Substation Project on Site Alternative A and utilize Subtransmission Line Route Alternative 1 (Proposed Project). The Proposed Project meets the basic objectives and is described in detail in Chapter 3, Project Description.

Site Alternative B (Substation Site Alternative) and Subtransmission Line Alternative 2 (Subtransmission Segment Alternative) are evaluated in this PEA as alternatives to the Proposed Project.

Figure 2.3 Subtransmission Line Crossings and Alternatives Combinations

Figure 2.3 Subtransmission Line Crossings and Alternatives Combinations

3.0 PROJECT DESCRIPTION

This chapter describes the construction and operation of the Proposed Project. The Proposed Project would include the following components:

- A new 66/12 kilovolt (kV) distribution substation on an approximately five acre site
- Construction of new 66 kV subtransmission line segments to serve the new Mascot Substation; more specifically, the Goshen-Hanford 66 kV subtransmission line would be looped into Mascot Substation and the Hanford-Liberty 66 kV subtransmission line, approximately two miles away, would be tapped and connected to the Mascot Substation with a new single-circuit 66 kV subtransmission line segment
- Construction of four new 12 kV distribution circuits
- Facilities to connect the substation to SCE's existing telecommunication system

The Proposed Project components are described in more detail below. The Mascot Substation Project would be constructed in unincorporated Kings County.

3.1 Proposed Project Components

3.1.1 Substation Description

Mascot Substation would be an unstaffed, automated 56 MVA 66/12 kV low-profile substation capable of an ultimate build-out of 112 MVA. The substation components are described below.

3.1.1.1 66 kV Switchrack

The proposed steel 66 kV switchrack would be approximately 120 feet long, 65 feet wide, and up to 20 feet high. It would consist of both an operating bus and a transfer bus. The switchrack would consist of seven positions: three for 66 kV source lines, two for transformer banks, one bus-tie, and one for a capacitor bank. Each bus would be approximately 120 feet long and consist of one 1590 thousand circular mils (kcmil) aluminum conductor steel reinforced (ACSR) per phase.

3.1.1.2 66 kV Circuit Breakers and Disconnect Switches

The three 66 kV line positions and two transformer bank positions would each be equipped with a circuit breaker and three group-operated disconnect switches. The bus-tie position would be equipped with a circuit breaker and two group-operated disconnect switches, and the capacitor position would be equipped with a circuit breaker, one group-operated disconnect switch, and one group-operated ground switch.

3.1.1.3 66/12 kV Transformers

Transformation would consist of two 28 MVA, 66/12 kV transformers each equipped with a group-operated isolating disconnect switch on the high and low voltage side, surge arresters and neutral current transformers. The transformer area dimensions would be approximately 20 feet high, 80 feet long and 42 feet wide.

3.1.1.4 12 kV Switchrack

The 12 kV low-profile switchrack would consist of twelve 9-foot wide bays accounting for seven equipped positions. The 12 kV switchrack dimensions would be approximately 17 feet high, 108 feet long and up to 44 feet wide.

3.1.1.5 Capacitor Banks

One 66 kV, 14.4 megavolts ampere reactive (MVAR) capacitor bank would be installed. The 66 kV capacitor bank area dimensions would be approximately 18 feet high, 60 feet long, and 40 feet wide. Two 12 kV, 4.8 MVAR capacitor banks would be installed. Each 12 kV capacitor bank enclosure would be approximately 17 feet high, 16 feet long, and 13 feet wide.

3.1.1.6 Mechanical and Electrical Equipment Room (MEER)

A MEER is a prefabricated structure that is typically made of steel, and has light tan or beige walls and roof. The roofline, wall joints, and doorway may have brown trim. The MEER would be equipped with air conditioning, control and relay panels, a battery and battery charger, AC and DC distribution, a human-machine interface rack, communication equipment, a telephone and an alarm system that would alert SCE personnel when an unauthorized entry into the MEER is detected. Control cable trenches would connect the MEER to the 66 kV switchrack, and to the 12 kV switchrack. The MEER dimensions would be approximately 12 feet high, 36 feet long, and 20 feet wide.

3.1.1.7 Restroom

The Mascot Substation would be equipped with a restroom. Because municipal water is presently not available at the substation site, a portable chemical unit would be placed within the substation perimeter wall, and maintained by an outside service company.

3.1.1.8 Substation Access

SCE would install an approximately 120 foot long and 24 foot wide asphalt concrete driveway leading from Grangeville Boulevard to a locked gate for two-way traffic access into the substation (as shown on Figure 3.1, Mascot Substation Layout). The access gate would be a minimum of 8 feet high by 24 feet wide. In addition, SCE would install a locked walk-in gate within the substation wall for additional access to the substation.

Figure 3.1 Mascot Substation Layout

Figure 3.1 Mascot Substation Layout

3.1.1.9 Substation Site Ground Surface Improvements

Presently, the substation site is used to grow alfalfa, and an irrigation system and groundwater well are present at the site. SCE may relocate the irrigation facilities as part of the purchase agreement for the parcel. If this is the case, the irrigation system and well would be reinstalled on the adjacent parcel, and the existing facilities either abandoned in place, or removed and discarded in accordance with all applicable laws.

The ground surface of the substation site would be finished with materials imported to the site and materials excavated and used on the site. These materials, and their approximate square footage and volumes are listed in Table 3.1, Substation Ground Surface Improvement Materials and Volumes.

Table 3.1 Substation Ground Surface Improvement Materials and Volumes

Element	Material	Approximate Surface Area (ft^2)	Approximate Volume (yd^3)
Site Fill (import)	Soil	200,000	18,000
Waste Removal (export)	Soil/Vegetation	200,000	12,000
Replacement fill (import)	Soil	200,000	14,000
Substation Equipment Foundations	Concrete	2,000	140
Equipment, wall foundation and cable trench excavations†	Soil	85,000	450
Cable Trenches†	Concrete	1,900	15
66 kV Bus Enclosures	Asphalt concrete	4,100	75
Internal Driveway	Asphalt concrete Class II aggregate base	4,500 4,500	55 90
External Driveway	Asphalt concrete Class II aggregate base	3,000 3,000	40 60
Substation Rock Surfacing	Rock, nominal 1 to 1-1/2 inch per SCE Standard	85,000	1,050
Block Wall Foundation	Concrete	3,000	250

Notes:
† Standard cable trench elements are factory fabricated, delivered to the site, and installed by crane.

Based on preliminary design, approximately 12,000 cubic yards of waste soil would be removed from the substation site. Because the substation site is presently below the grade of Grangeville Boulevard, it is estimated that approximately 14,000 cubic yards of new clean fill would be required to replace the waste soil removal, and an additional 18,000

cubic yards of clean fill would be required to construct the site to the preliminary design elevation. Any waste material would be handled as described in Section 3.7, Waste Management.

Approximately 450 cubic yards of soil would be excavated as a result of excavation for foundation and building footings. This soil would be stock piled during excavation and ultimately would be graded and compacted on site.

3.1.1.10 Substation Drainage

The Proposed Project substation site is presently used to grow alfalfa, and stormwater runoff does not appear to leave the property. During construction, the substation site would be graded so that surface drainage would be directed towards the south where it would be controlled by either an earthen detention basin or other means as defined by the grading and drainage plans. The portion of the site north of the substation wall would drain towards Grangeville Boulevard. Prior to substation construction, SCE would be required to obtain a grading permit from Kings County, during which time the final site drainage design would be determined.

The substation grading design would incorporate Spill Prevention Control and Countermeasure (SPCC) Plan requirements due to the planned operation of oil-filled transformers at the substation (in accordance with 40 CFR Part 112.1 through Part 112.7). Typical SPCC features include curbs and berms designed and installed to contain spills, should they occur. These features would be part of SCE's final engineering design for the Proposed Project.

3.1.1.11 Substation Lighting

Mascot Substation would have access and maintenance lighting. The access lighting would be low-intensity and controlled by a manual switch. Maintenance lights would be controlled by a manual switch and consist of high-pressure sodium vapor lights located in the switchracks, around the transformer banks, and in areas of the substation where maintenance activity may take place. Maintenance lights would be used only when required for maintenance outages or emergency repairs occurring at night. The lights would be directed downward and shielded to reduce glare outside the facility.

3.1.1.12 Substation Perimeter

An 8-foot-high perimeter wall would surround the substation. A band of at least three strands of barbed wire would be affixed near the top of the perimeter wall inside of the substation and would not be visible from the outside.

Municipal water is presently not available at the substation site. SCE would consult with Kings County to develop an appropriate landscaping plan and perimeter wall design that would be submitted with the grading permit application for the project.

3.1.2 Subtransmission Line Segments Description

The new subtransmission line segments would connect the Mascot Substation to two existing subtransmission lines; the Hanford-Liberty 66 kV subtransmission line and the Goshen-Hanford 66 kV subtransmission line. Because the Proposed Project is located in a raptor concentration area, all 66 kV subtransmission structures would be designed to be consistent with the "Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006"[2].

The Proposed Project would utilize wood poles, lightweight steel (LWS) poles, and tubular steel poles (TSPs). Each structure would support polymer insulators and 954 stranded aluminum conductor (SAC). Some of the structures would support a fault return conductor. The dimensions of these structures are shown on Figure 3.2, Typical 66 kV Subtransmission Structures, and summarized in Table 3.2, Typical Subtransmission Structure Dimensions.

Table 3.2 Typical Subtransmission Structure Dimensions

Pole Type	Approximate Diameter	Approximate Height Above Ground	Approximate Auger Hole Depth	Approximate Auger Diameter
Wood	1 to 3 feet	61 to 75 feet	8 to 10 feet	2 to 4 feet
Light Weight Steel (LWS)	1 to 3 feet	61 to 75 feet	8 to 10 feet	2 to 4 feet
Tubular Steel Pole (TSP)	2 to 4 feet	65 to 100 feet	Not applicable	Not applicable
TSP Concrete Foundation	5 to 8 feet	Up to 2 feet	20 to 40 feet	5 to 8 feet

Both wood poles and LWS poles would be direct buried (to a depth of approximately 8 to 10 feet below ground surface) and extend approximately 61 to 75 feet above ground. The diameter of LWS poles are typically 1.5 to 3 feet at the base, and taper to approximately 1 foot at the top of the pole.

The TSPs are used in areas of uneven terrain, turning points, long conductor spans, and other locations where extra structure strength is required. The TSPs utilized for the Proposed Project would extend between 65 feet and 100 feet above ground. The TSPs would be attached to a concrete foundation approximately 5 to 8 feet in diameter that extends between approximately 20 to 40 feet below ground and may extend up to 2 feet above ground.

[2] "Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006" is published by the Edison Electric Institute and the Avian Power Line Interaction Committee in collaboration with the Raptor Research Foundation.

The new subtransmission line segment connection between the Mascot Substation and the existing Hanford-Liberty 66 kV subtransmission line would be approximately 2 miles long and would be adjacent to an existing PG&E powerline. Approximately two existing wood poles along the Hanford-Liberty 66 kV subtransmission line would be removed and replaced with two new wood poles with sectionalizing switches, and approximately one new TSP would be installed to facilitate tapping the existing subtransmission line. Approximately 29 wood poles, one LWS pole, and eight TSPs would be installed for this 66 kV subtransmission line segment. These areas are shown on Figure 3.3, Subtransmission Line Segment Route Description.

In addition, the existing Goshen-Hanford 66 kV subtransmission line that parallels Grangeville Boulevard would be looped into Mascot Substation. Approximately three TSPs and approximately one LWS pole would be installed to connect the existing Goshen-Hanford 66 kV subtransmission line to Mascot Substation.

3.1.3 Telecommunications Description

Telecommunications facilities to be installed for the Proposed Project include fiber optic cable and relay protection equipment in the Mascot Substation MEER. Approximately 15 miles of cable would be installed overhead on existing poles.

In addition, new underground duct banks would be installed in the vicinity of three substations. The locations and lengths of the duct banks are summarized in Table 3.3, New Telecommunication Duct Banks. These distances and locations are subject to change as the surrounding area develops, and space on or within existing facilities is put to use by other utilities, and new facilities become available for SCE's use. The preliminary areas of fiber optic installation are shown in Appendix G, Telecommunications Route Map.

Table 3.3 New Telecommunication Duct Banks

Substation	Approximate Length	Description
Mascot Substation	310 feet West along Grangeville Boulevard	Between the substation and an existing pole
	410 feet East along Grangeville Boulevard	Between the substation and an existing pole
Goshen Substation	200 feet South along substation boundary	Between the substation and an existing pole
	200 feet East along Highway 198	Between the substation and an existing pole
	200 feet Within substation fenceline	Within substation fenceline
Liberty Substation	30 feet Along Avenue 272	Between the substation and an existing pole

Figure 3.2 Typical 66 kV Subtransmission Structures

Figure 3.2 Typical 66 kV Subtransmission Structures

Figure 3.3 Subtransmission Line Segment Description

Figure 3.3 Subtransmission Line Segment Description

3.2 Proposed Project Construction Plan

Construction of the Proposed Project would include activities associated with the land survey, substation site construction, replacement of existing poles, subtransmission line construction, and telecommunications installation, as well as construction support activities, such as the establishment of a material staging yard and access roads. The following sections provide more detailed information about the construction tasks that would be associated with the Proposed Project.

3.2.1.1 Storm Water Pollution Prevention Plan

Construction of the Proposed Project would disturb a surface area greater than one acre, and as a result, SCE would be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Central Valley Regional Water Quality Control Board (CRWQCB). To acquire this permit, SCE would prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes applicable project information, monitoring and reporting procedures and Best Management Practices (BMPs). Best Management Practices such as storm water runoff quality control measures (boundary protection), spill reporting, and concrete waste management, would be included in the SWPPP as applicable to the project. The SWPPP would be prepared based on final engineering design, and would include all project components.

3.2.1.2 Dust Control

During construction, water trucks would be used to minimize the quantity of airborne dust created by construction activities, per San Joaquin Valley Air Pollution Control District Regulation VIII Control Measures for Construction Emissions of PM_{10} in the San Joaquin Valley Air Basin.

3.2.1.3 Material Staging Yard

Construction of the Proposed Project would require a temporary material staging yard. SCE anticipates utilizing the substation site as a material staging yard for parking and the storage of materials and equipment during construction.

If the substation site cannot be utilized as a material staging yard, SCE would attempt to lease a suitable facility within approximately 5 miles of the Proposed Project. The yard would be surfaced with crushed rock if existing surfacing is not compatible with storage and equipment requirements, and would be surrounded with temporary chain-link fencing to the extent that the perimeter of the site is not already secured. Land disturbed at the staging areas, if any, would be restored to preconstruction conditions or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project.

Materials and equipment typically staged at the material staging yard could include, but would not be limited to, construction trailers, electrical equipment, conductor and cable reels, steel beams, rebar, foundation cages, below and above grade conduit and

grounding, wire stringing equipment, poles, line trucks, crossarms, insulators, Storm Water Pollution Prevention Plan materials (such as straw wattles, gravel, silt fences), waste materials from construction of the Proposed Project (for salvaging, recycling, or disposal), and portable sanitation facilities. Temporary power would be placed at the material staging area.

All materials associated with construction efforts would be delivered by truck to the established material staging yard. The transformers would be delivered by heavy transport vehicles and off-loaded on-site by large cranes and/or forklifts with support trucks. Delivery activities requiring major street use would be scheduled to occur during off-peak traffic hours to the extent feasible in accordance with applicable local ordinances.

Construction personnel would park either at the Mascot Substation site, at the material staging yard, San Joaquin Service Center, and/or the Rector Substation.

3.2.1.4 Traffic Control

Construction activities completed within public rights-of-way would require the use of a traffic control service and all lane closures would be conducted in accordance with local ordinances and city permit conditions. These traffic control measures are typically consistent with those published in the WATCH Manual (Work Area Protection and Traffic Control Manual, American Public Works Association, April 2006).

3.2.1.5 Nighttime Construction

Under normal conditions, construction of the Proposed Project would occur during daylight hours. However, there is a possibility construction would occur at night that would require temporary artificial illumination. SCE would use lighting to protect the safety of the construction workers, but orient the lights to minimize their effect on any nearby receptors.

3.2.2 Substation Construction

The following sections describe the construction activities associated with the Mascot Substation site.

3.2.2.1 Site Grading

The site would be graded in accordance with the grading plan approved by Kings County. The area to be enclosed by the substation perimeter wall would be graded to a minimum slope of one percent and compacted to 90 percent of the maximum dry density. The areas outside the substation wall that would be used as a buffer would be graded in a manner consistent with the overall site drainage design. Final site drainage would be subject to the conditions of the grading permit obtained from Kings County.

3.2.2.2 Below Grade Construction

After the substation site is graded, below grade facilities would be installed. Below grade facilities include a ground grid, cable trenches, power cable trench, equipment foundations, conduits, duct banks, utilities, and the footing of the substation wall. The design of the ground grid would be based on soil resistivity measurements collected during a geotechnical investigation that would be conducted prior to construction.

3.2.2.3 Equipment Installation

Above grade installation of substation facilities (e.g., buses, capacitors, circuit breakers, transformers, steel support structures, and the MEER) would commence after the below grade structures are in place.

The transformers would be delivered by heavy-transport vehicles and off-loaded on site by large cranes with support trucks. A traffic control service may be used for transformer delivery, if necessary.

3.2.3 66 kV Subtransmission Line Segments Installation

3.2.3.1 Access Roads

Access roads are through roads that run between structure sites along a right-of-way (ROW) and serve as the main transportation route between structures.

There are approximately 1.5 miles of existing paved and dirt roads adjacent to the proposed subtransmission line segment. SCE would acquire the rights to use these roads for constructing and maintaining the new line (please see Section 3.4, Land Acquisition and Access Rights, for more information). In addition, approximately 0.5 mile of new access roads would be constructed to access the new subtransmission line structure locations. The locations of these access roads are shown on Figure 3.4, Access Roads and Pull/Tension Sites.

If necessary, areas used for new and existing access roads would be cleared of vegetation, blade-graded to remove potholes, ruts, and other surface irregularities, and re-compacted to provide a smooth and dense riding surface capable of supporting heavy-construction equipment. The graded access road would have a minimum drivable width of 14 feet (preferably with 2 feet of shoulder on each side).

It is anticipated that the access roads constructed to accommodate new construction would be left in place to facilitate future access for operations and maintenance purposes. Gates would be inserted where required at fenced property lines to restrict general and recreational vehicular access to road ROWs.

3.2.3.2 Subtransmission Structure Site Preparation

The new structure locations would first be graded and/or cleared to provide a reasonably level and vegetation-free surface for footing construction. Sites would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure base. The graded area would be compacted to at least 90 percent relative density, and would be capable of supporting heavy vehicles.

Assembly of LWS poles and wood poles typically would require a temporary laydown area of approximately 150 feet by 75 feet, and TSPs would require a laydown area of approximately 200 feet by 100 feet. The laydown areas would be cleared of vegetation and graded, if necessary, to provide a flat working surface.

Erection of the TSPs may also require establishment of a temporary crane pad to allow an erection crane to set up approximately 60 feet from the centerline of each structure. The crane pad would be located adjacent to each applicable structure location. In most cases, this crane pad would be located within the laydown area used for structure assembly. If a separate pad is required, it would occupy an area of approximately 50 feet by 50 feet. The pad would be cleared of vegetation and also graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad would be determined after final engineering of the Proposed Project and the selection of the appropriate construction methods to be used by SCE or its contractor.

3.2.3.3 Subtransmission Structure Installation

Structure Footings

The Proposed Project would utilize wood poles, LWS poles, and TSPs. The wood poles and the LWS poles would be direct buried in boreholes approximately 2 to 4 feet in diameter and 8 to 10 feet deep, and are typically installed using a line truck. The excavated material would be used to backfill auger holes, reach required compaction, and set soil height to reach final grade. Any excess excavated material would either be offered to the property owner or properly disposed of off site. If the bore spoils are not suitable for backfill, imported clean fill material, such as clean fill dirt and/or pea gravel, would be used.

Each TSP would require a concrete foundation. The borings for the foundations would be drilled using truck or track-mounted excavators to advance a boring typically 5 to 8 feet in diameter, typically 20 and 40 feet deep, and the foundation would extend approximately 2 feet above ground. Steel reinforced cages would be set in the boring, survey positioning would be verified, and concrete would then be placed. Concrete samples would be drawn at time of pour and tested to ensure engineered strengths were achieved. A normally specified SCE concrete mix typically takes approximately 28 days to cure to an engineered strength. The strength is verified by controlled testing of sampled concrete. Once this strength has been achieved, crews would

Figure 3.4 Access Roads and Pull/Tension Sites

Figure 3.4 Access Roads and Pull/Tension Sites

commence erection of the structure. Each foundation would require approximately 20 to 80 cubic yards of concrete delivered to each structure location.

Foundations in soft or loose soil and that extend below the groundwater level may be stabilized with drilling mud slurry. Mud slurry would be placed in the hole after drilling to prevent the sidewalls from sloughing. The concrete for the foundation is then pumped to the bottom of the hole, displacing the mud slurry. The mud slurry brought to the surface would be reused or discarded at an off-site disposal facility in accordance with all applicable laws.

Structure Assembly

Lightweight steel poles and TSPs consist of separate base and top sections. Steel pole installation would begin by transporting the poles by flatbed trucks from the staging area and laying the individual sections on the ground at each new pole location. While on the ground, the top section would be pre-configured with the necessary crossarms, insulators, and wire-stringing hardware. A line truck (LWS poles) with a boom on it, or a crane (TSPs) would be used to position each pole base section into previously augured holes (LWS poles) or on top of previously prepared foundations (TSPs). When the base section is secured, the top section would be placed above the base section. The two sections may be spot welded together for additional stability.

3.2.3.4 Guard Structures

After the subtransmission structures are installed and before wire stringing begins, guard structures may be installed at transportation, flood control, and utility crossings. Guard structures are temporary facilities designed to stop the movement of a conductor should it momentarily drop below a conventional stringing height. Temporary netting could be installed to protect some types of under-built infrastructure. Typical guard structures are wood poles, approximately 60 to 80 feet tall, and depending on the width of the conductor being constructed, the number of guard poles installed on either side of a crossing would be between two and four. The guard structures are removed after the conductor is clipped into place. In some cases, the wood poles could be substituted with the use of specifically equipped boom-type trucks with heavy outriggers staged to prevent the conductor from dropping.

Public agencies differ on their policies for preferred methods to public safety during conductor stringing operations. For highway and open channel aqueduct crossings, SCE would work closely with the applicable jurisdiction to secure the necessary permits to string conductor across the applicable infrastructure. For major roadway crossings, typically one or more of the following four methods is employed to protect the public:

- Erection of a highway net guard structure system;
- Detour of all traffic off a highway at the crossing position;
- Implementation of a controlled continuous traffic break while stringing operations are performed; or

- Strategic placement of special line trucks with extension booms on the highway deck.

Based on a preliminary review of the number of crossings that would be needed along the currently proposed route, SCE has estimated that approximately four guard structures would be installed to facilitate construction.

3.2.3.5 Wire Stringing

Wire stringing activities would be in accordance with SCE specifications and similar to process methods detailed in the IEEE Standard 524-2003 (Guide to the Installation of Overhead Transmission Line Conductors).

To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, and radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire-stringing activities.

Wire stringing includes all activities associated with the installation of the wire onto LWS poles, wood poles, and TSPs. These activities typically include the installation of primary conductors, a fault return conductor, vibration dampeners, weights, and suspension and dead-end hardware assemblies for the entire length of the subtransmission line segment. Insulators and stringing sheaves (rollers or travelers) are also attached as part of the conductor installation efforts during wire-stringing activities.

The following five steps describe typical wire stringing activities:

- Step 1: Determine the locations of wire pulls and wire pull equipment set-up positions.

- Step 2: Sock Line Threading: A bucket truck would be used to install a lightweight sock line. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull.

- Step 3: Pulling: The sock line would be used to pull in the conductor pulling cable. The conductor pulling cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel.

- Step 4: Splicing, Sagging, and Dead-ending: After the conductor is pulled in, all midspan splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures.

- Step 5: Clipping-in: After the conductor is dead-ended, the conductors would be attached to all tangent structures; a process called clipping in.

Wire pulls are the length of any given continuous wire installation between two selected points along the line. Wire pull locations are selected, where possible, based on availability of dead-end structures at the ends of each pull and the geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment setups. Typically, wire pulls are located approximately every 6,000 feet on flat terrain or less in rugged terrain. Generally, pulling locations and equipment set-ups would be in direct line with the direction of the overhead conductors and established a distance approximately three times the pole height away from the adjacent structure. The exact locations of the pulling sites would be determined during construction.

The dimensions of the area needed for the stringing set-ups associated with wire installation are variable and generally depends upon terrain. The preferred minimum size needed for tensioning equipment set-up sites requires approximately an area of 200 feet by 100 feet. The preferred minimum size needed for pulling equipment set-up sites requires approximately an area of 200 feet by 100 feet. The preferred minimum size needed for splicing equipment set-up sites requires approximately an area of 150 feet by 100 feet. However, crews can work from within smaller areas when space is limited. Each stringing operation would include one puller positioned at one end and one tensioner and wire reel stand truck positioned at the other end. Splicing sites would be strategically located to support the stringing operations and would include specialized support equipment such as skidders and wire crimping equipment. Permanent splices are formed once the conductor is strung through the rollers located on each structure. For stringing equipment that cannot be positioned at either side of a dead-end subtransmission structure, field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension.

The puller, tensioner, and splicing set-up locations associated with the Proposed Project would be temporary and the land would be restored to as close to pre-construction conditions as possible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project. The final number and locations of the puller, tensioner, and splicing sites would be determined during final engineering.

3.2.3.6 Removal of Existing Poles

After the new subtransmission poles are constructed and any existing underbuilt facilities are transferred to the new poles, the preexisting wood poles that are no longer supporting facilities would be removed (including the below-ground portion). The hole would then be backfilled using imported fill in combination with fill that may be available as a result of excavation for the installation of the structures. Depending on the condition and original chemical treatment, the wood poles removed could be reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified municipal landfill.

3.2.3.7 Energizing 66 kV Subtransmission Lines

The final step in completing the 66 kV subtransmission line segment construction involves energizing the new conductors. The existing Hanford-Liberty 66 kV and Goshen-Hanford 66 kV subtransmission lines would be de-energized in order to connect the newly constructed lines to the existing lines. De-energizing and reconnecting the 66 kV subtransmission lines to the new poles may occur when electrical demand is low to reduce the need for additional electric service outages. Once the connection is complete, the 66 kV subtransmission lines would be returned to service (re-energized).

3.2.4 Telecommunications Construction

The overhead telecommunications cable would be installed by attaching cable to a pole in a manner similar to that described above for wire stringing. A truck with a cable reel would be set up at one end of the section to be pulled, and a truck with a winch would be set up at the other end. Cable would be pulled onto the pole and permanently secured. Fiber strands in the cable from one reel would be spliced to fiber strands in the cable from the next reel to form one continuous path. One reel typically holds 20,000 feet of fiber optic cable. All telecommunications cable construction would be along existing roadways, and lane closures during the telecommunications installation are not expected.

Duct bank installation would require excavation of trenches approximately 18 inches wide and 60 inches deep. Three 5-inch polyvinyl chloride (PVC) conduits would be placed in each trench, semi-encased, covered with a layer of slurry, and the trench surface finished to match that of the surrounding ground surface. The fiber optic cable would then be pulled through the duct bank.

3.3 Post-Construction Cleanup

Any damage to existing roads as a result of construction would be repaired once construction is complete in accordance with local agency requirements.

SCE would restore all areas that were temporarily disturbed by construction of the Proposed Project (including the material staging yard, pull and tension sites, and splicing sites) to as close to pre-construction conditions as possible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project.

In addition, all construction materials and debris would be removed from the area and recycled or properly disposed of off-site. SCE would conduct a final inspection to ensure that cleanup activities were successfully completed.

3.4 Land Acquisition and Access Rights

SCE is presently in the process of acquiring approximately 5 acres of land for the Mascot Substation site. In addition, SCE would require approximately 2 miles of approximately 25 foot wide ROW to be acquired for the subtransmission segment (approximately 6

acres). The ROW to be acquired would be adjacent to the PG&E powerline easement, and would include both the subtransmission facilities and access roads. When a road is not constructed parallel to the line, access is granted in the easement for ingress and egress to the ROW and any SCE facilities constructed on that parcel. For routine maintenance, SCE coordinates with the property owner for preferred access routes, or use existing roads or paths.

SCE generally purchases easements from property owners for ROWs. SCE would offer to pay fair market value for these easement rights, based upon a value determined by a certified appraiser.

3.5 Land Disturbance

Land disturbance would include the surface modifications at the substation site, the installation of the access roads and the installation of the 66 kV subtransmission line structures. Some disturbance would be temporary in nature, such as disturbance associated with the laydown areas and crane pads, which would be restored following construction. Other disturbance would be permanent in nature, such as TSP footings, LWS poles, wood poles, and access roads. Land Disturbance Estimates are shown in Table 3.4, Land Disturbance Estimates.

3.6 Hazards and Hazardous Materials

Construction and operation of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled, and used in accordance with the applicable regulations. For all hazardous materials in use at the construction site, Material Safety Data Sheets would be made available to all site workers upon request.

The Storm Water Pollution Prevention Plan (SWPPP) prepared for the Proposed Project would provide detail of locations that hazardous materials may be stored during construction, and the protective measures, notifications, and cleanup requirements for any accidental spills or other releases of hazardous materials that could occur.

3.7 Waste Management

Construction of the Proposed Project would result in the generation of various waste materials, including wood, soil, vegetation, and sanitation waste (portable toilets).

The existing wood poles removed for the Proposed Project would be returned to the material staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified municipal landfill. Soil excavated for the Proposed Project would either be used as fill or disposed of off-site at an appropriately licensed waste facility. Sanitation waste (i.e., human generated waste) would be disposed of according to sanitation waste management practices.

Table 3.4 Land Disturbance Estimates

Project Feature	Number of Sites	Disturbed Acreage Dimensions	Acreage Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Mascot Substation	1	485' x 445'	5.0	--	5.0
Guard Structures	4	50' x 75'	0.3	0.3	--
Removing Existing Wood Pole	2	50' x 50'	0.1	0.1	--
Construct New TSP†	12	200' x 100'	5.5	4.8	0.7
Construct New LWS Pole†	2	150' x 75'	0.5	0.4	0.1
Construct New Wood Pole†	31	150' x 75'	8.0	6.5	1.6
66kV Conductor Stringing Setup Area - Puller‡	4	200' x 100'	1.8	1.8	--
66kV Conductor Stringing Setup Area - Tensioner‡	4	200' x 100'	1.8	1.8	--
66kV Conductor Splicing Setup Areas‡	4	150' x 100'	1.4	1.4	--
New Access Roads	0.5	Linear miles x 14' wide	0.8	--	0.8
Material & Equipment Staging Area	1	Approx. 5 acres	5	5	--
Total Estimated			**30**	**22**	**8**

Notes:
The disturbed acreage calculations are estimates based upon SCE's preliminary information of the preferred area of use for the described project feature; they are subject to revision based upon final engineering and review of the project by SCE's construction manager and/or contractor
†SCE requires that a 25' radius of each TSP, 10' radius for each LWS pole and wood pole remain clear of vegetation within portions of the new ROW. Permanently disturbed areas for TSP = 2,507 square feet, LWS = 380 square feet, and wood pole = 380 square feet.
‡Based on 6,000 foot conductor reel lengths, number of circuits, and route design.

3.8 Geotechnical Studies

Prior to the start of construction, SCE would conduct a geotechnical study of the substation site and the 66 kV subtransmission line route that would include an evaluation of the soil type, depth to the water table, soil resistivity, and the presence of anthropogenic chemicals, including pesticides.

3.9 Environmental Surveys

After project approval but prior to the start of construction, detailed environmental surveys would be conducted to identify sensitive biological and cultural resources in the vicinity of the Proposed Project, including the subtransmission line route, wire stringing locations, access roads, and material staging yards. These areas would additionally be examined for obvious signs of chemical contamination, such as oil slicks and petroleum odors. Where feasible, the information gathered from these surveys may be used to modify the project design in order to avoid sensitive resources, or to implement Applicant Proposed Measures (APMs) to minimize the impact to sensitive resources from project-related activities. The results of these surveys would also determine the extent to which environmental specialist construction monitors would be required. The following environmental surveys that would occur prior to construction are described below.

Biological resources in the vicinity of the Proposed Project are presented in detail in Section 4.4, Biological Resources. Biological resource surveys to be completed are as follows.

- Sensitive plant surveys. Surveys would be conducted by a qualified botanist familiar with plants of the San Joaquin Valley. Surveys would focus on identifying the presence of state and federally listed species as well as California Native Plant Society (CNPS) special status plants as well as species identified as locally important. In addition, potential habitat to support special status plant species would be identified.

- Unsurveyed Areas. For areas disturbed by the project that have not been surveyed, a desktop review of resources occurring in the area would be conducted to identify potential biological resources that may occur, and a qualified wildlife biologist would conduct a field survey of the areas directly impacted by construction.

Thirty days prior to the start of ground disturbing activity, the following surveys would be conducted:

- Clearance Surveys. A clearance survey would be conducted to identify potential plant and animal species that may be impacted by construction activities. Clearance surveys include a field survey by a qualified botanist and wildlife biologist and would be limited to areas directly impacted by construction activities.

- Active nests. Work near nests would be scheduled to take place outside the nesting season when feasible. As of the clearance surveys that take place during nesting season (generally February 1 to August 31), a nesting survey would be conducted. If a nest must be moved during the nesting season, SCE would coordinate with the California Department of Fish and Game and United States Fish and Wildlife Service to obtain approval prior to moving the nest.

Cultural resources in the vicinity of the Proposed Project are presented in detail in Section 4.5, Cultural Resources. Most of the areas of the Proposed Project have been surveyed for cultural resources, but the presently unsurveyed portions of the Proposed Project would be surveyed for cultural resources prior to construction based on final engineering, and the following actions taken:

- During the surveys, any discovered archaeological resource potentially affected by construction of the Proposed Project would be evaluated for its eligibility for listing in the California Register of Historical Resources. Ideally, archaeological resources found to meet any of the California Register eligibility criteria would be avoided and preserved in place. If avoidance is not feasible, a data recovery plan would be prepared to recover scientifically consequential information from the site prior to construction of the Proposed Project. The data recovery plan would define all aspects of the data recovery program, including a research design, description of all archaeological methods and techniques to be employed in data recovery, as well as analytical and reporting procedures and required reports. Studies and reports resulting from site recordation and data recovery would be deposited with the Southern San Joaquin Valley Information Center and other appropriate agencies. Provision would be made for the appropriate curation of any artifacts and other recovered materials at a museum or other qualified repository.

- If previously undetected archaeological resources are discovered during construction of the Proposed Project, personnel would be instructed to suspend work in the vicinity of any find, and work would be redirected to avoid impacting the resource. The resource would then be evaluated for listing in the California Register by a qualified archaeologist, and, if the resource is determined to be eligible for listing in the California Register, the resource would either be avoided or appropriate archaeological protective measures would be implemented.

- In the event that human remains are encountered during preconstruction surveys or construction, and cannot be avoided, the remains would be removed in accordance with CEQA Guidelines 15064.5(d) and (e).

- Any built environment resources found would be fully documented using California Department of Parks and Recreation Form 523 and supplements.

- Each built environment resource potentially affected by construction of the Proposed Project would be evaluated for its eligibility for listing in the California Register of Historical Resources. Ideally, built resources found to meet any of the California Register eligibility criteria would be avoided by the Proposed Project and preserved in place. If avoidance is not feasible, each California Register eligible resource affected by the Proposed Project would be recorded to the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) standards.

3.10 Worker Environmental Awareness Training

Prior to construction, a Worker Environmental Awareness Plan would be developed based on the final engineering design, the results of preconstruction surveys, and a list of mitigation measures, if any, developed by the CPUC to mitigate significant environmental effects of the Proposed Project. A presentation would be prepared by SCE and shown to all site workers prior to their start of work. A record of all trained personnel would be kept with the construction foreman.

In addition to the instruction for compliance with any additional site-specific biological or cultural resource protective measures and mitigation measures that are developed after the preconstruction surveys, all construction personnel would also receive the following:

- A list of phone numbers of SCE personnel associated with the Proposed Project (archeologist, biologist, environmental compliance coordinator, and regional spill response coordinator)
- Instruction on the San Joaquin Valley Air Pollution Control District's Regulation VIII Control Measures for Construction Emissions of PM_{10} in the San Joaquin Valley Air Basin
- Instruction on what typical cultural resources look like, and if discovered during construction, to suspend work in the vicinity of any find and contact the site foreman and archeologist or environmental compliance coordinator
- Instruction on individual responsibilities under the Clean Water Act, the project SWPPP, site-specific BMPs, and the location of Material Safety Data Sheets for the project
- Instructions to notify the foreman and regional spill response coordinator in case of hazardous materials spills and leaks from equipment, or upon the discovery of soil or groundwater contamination
- A copy of the truck routes to be used for material delivery
- Instruction that noncompliance with any laws, rules, regulations, or mitigation measures could result in being barred from participating in any remaining construction activities associated with the Proposed Project

3.11 Construction Equipment and Personnel

The estimated elements, materials, number of personnel and equipment required for construction of the Proposed Project are summarized in Table 3.5, Construction Equipment Use Estimations.

Table 3.5 Construction Equipment Use Estimations

Activity and number of Personnel	Number of Work Days	Equipment and Quantity	Duration of Use (Hours/Day)
Survey (2 people)	10	2 Survey Trucks	8
Grading (15 people)	90	1 Dozer 2 Loader 1 Scraper 1 Grader 1 Water Truck 2 4x4 Backhoe 1 4x4 Tamper 1 Tool Truck 1 Pickup 4x4	4 4 3 3 2 2 2 2 2
Civil Work (10 people)	60	1 Excavator 1 Foundation Auger 2 Backhoe 1 Dump Truck 1 Skip Loader 1 Water Truck 2 Bobcat Skid Steer 1 Forklift 1 17-ton Crane 1 Tool Truck	4 5 3 2 3 3 3 4 2 hours/day for 45 days 3
MEER (4 people)	20	1 Carry-all Truck 1 Stake Truck	4 3
Electrical (10 people)	70	2 Scissor Lifts 2 Manlifts 1 Reach manlift 1 15-ton Crane 1 Tool Trailer 2 Crew Trucks	3 3 4 3 3 2
Wiring (5 people)	25	1 Manlift 1 Tool Trailer	4 3
Transformers (6 people)	30	1 Crane 1 Forklift 2 Crew Trucks 1 Low Bed Truck	6 6 2 4

Activity and number of Personnel	Number of Work Days	Equipment and Quantity	Duration of Use (Hours/Day)
Maintenance Crew Equipment Check (2 people)	30	2 Maintenance Trucks	4
Testing (4 people)	80	1 Crew Truck	3
Fencing (6 people)	10	1 Bobcat 1 Flatbed Truck 1 Crewcab	8 2 4
Asphalting (6 people)	15	2 Paving Roller 1 Asphalt Paver 1 Stake Truck 1 Tractor 1 Dump Truck 2 Crew Trucks 1 Asphalt Curb Machine	4 4 4 3 3 2 3
Landscaping (6 people)	15	1 Tractor 1 Dump Truck	6 3
Irrigation onsite (7 people)	20	1 Bobcat 1 Power Trencher 1 Crew Truck	8 8 8
TSP Foundation (7 people)	6	3 1-ton Crew Cab Flat Bed, 4x4 1 30-ton Crane Truck 1 Backhoe/Front Loader 1 Auger Truck 1 4000-gallon Water Truck 2 10-cubic yard Dump Truck 3 10-cubic yard Concrete Mixer Truck	2 5 8 8 8 8 5
Pole Haul (4 people)	12	2 3/4-ton Pick-up Truck, 4x4 1 80-ton Rough Terrain Crane 2 40’ Flat Bed Truck/Trailer	5 6 8
Steel Pole Assembly (8 people)	7	2 3/4-ton Pick-up Truck, 4x4 2 1-ton Crew Cab Flat Bed, 4x4 1 Compressor Trailer 1 80-ton Rough Terrain Crane	5 5 5 6
Steel Pole Erection (8 people)	7	2 3/4-ton Pick-up Truck, 4x4 2 1-ton Crew Cab Flat Bed, 4x4 1 Compressor Trailer 1 80-ton Rough Terrain Crane	5 5 5 6

Activity and number of Personnel	Number of Work Days	Equipment and Quantity	Duration of Use (Hours/Day)
Wood Pole (8 people)	6	2 3/4-ton Pick-up Truck, 4x4 2 1-ton Crew Cab Flat Bed, 4x4 1 Compressor Trailer 1 80-ton Rough Terrain Crane	5 5 5 6
Installation of Conductor (16 people)	6	2 3/4-ton Pick-up Truck, 4x4 4 1-ton Crew Cab Flat Bed, 4x4 2 Wire Truck/Trailer 1 Dump Truck 2 Bucket Truck 2 22-ton Manitex 1 Splicing Rig 1 Splicing Lab 1 3-drum Straw line Puller 1 Static Truck/Tensioner	8 8 2 2 8 8 2 2 6 6
Guard Structure Installation/Removal (6 people)	2	2 3/4-ton Pick-up Truck, 4x4 2 1-ton Crew Cab Flat Bed, 4x4 2 Compressor Trailer 2 Extendable Flat Bed Truck 1 30-ton Crane Truck 1 80-foot Hydraulic Man-lift/Bucket Truck	6 6 6 6 8 4
Restoration (7 people)	2	2 1-ton Crew Cab, 4x4 1 Road Grader 1 Water Truck 1 Backhoe/Front Loader 1 Drum Type Compacter 1 Track Type Dozer 1 Lowboy Truck/Trailer	2 6 8 6 6 6 3
Substation Telecom Installation (2 people)	24	2 Vans	Commute only
Overhead Fiber Optic Installation (8 people)	30	2 Bucket Truck 2 Reel Truck	8 8
Duct Bank Installation (3 people)	10	1 Flatbed Truck 1 Backhoe 1 Stakebed Truck 1 Crew Truck	1 8 2 2
Underground Cable Pulling (4 people)	6	1 Bucket Truck 1 Reel Truck	8 8

Construction would be performed by either SCE construction crews or contractors, depending on the availability of SCE construction personnel at the time of construction. If SCE transmission and telecommunications construction crews are used they would likely be based at one of SCE's local facilities such as the Rector Substation or the San Joaquin Service Center. Contractor construction personnel would be managed by SCE construction management personnel. SCE anticipates a total of approximately 40 construction personnel working on any given day. SCE anticipates that crews would work concurrently whenever possible; however, the estimated number of crew members would be dependent upon final construction scheduling.

In general, construction efforts would occur in accordance with accepted construction industry standards. Construction activities generally would be scheduled during daylight hours (e.g., 7:00 am to 7:00 pm), Monday through Saturday. If different hours or days are necessary, SCE would obtain variances from local noise ordinances, as necessary, from the jurisdiction within which the work would take place.

3.12 Construction Schedule

SCE anticipates that construction of the Proposed Project would take approximately eleven months. Construction would commence following CPUC approval, final engineering and procurement activities.

3.13 Project Operation

Mascot Substation would be unstaffed, and electrical equipment within the substation would be remotely monitored and controlled by an automated system from SCE's Rector Regional Control Center. SCE personnel would visit for electrical switching and routine maintenance purposes. Routine maintenance would include equipment testing, equipment monitoring, and repair. SCE personnel would generally visit the substation three to four times per month.

The new 66 kV subtransmission line segments would be maintained in a manner consistent with CPUC General Order 165. Normal operation of the 66 kV subtransmission lines would be controlled remotely through SCE control systems. SCE inspects 66 kV subtransmission lines at least once per year by driving and/or flying the line routes. Maintenance would occur as needed and would include activities such as repairing conductors, replacing insulators, replacing poles, and access road maintenance.

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4.0 ENVIRONMENTAL IMPACT ASSESSMENT

This section examines the potential environmental impacts of the Proposed Project and alternatives. The analysis of each resource category begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125(a) of the CEQA Guidelines) that may be affected by the Proposed Project. The effects of the Proposed Project are defined as changes to the environmental setting that are attributable to project construction and operation.

Significance criteria are identified for each environmental issue area. The significance criteria serve as a benchmark for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. According to the CEQA Guidelines Section 15382, a significant effect on the environment means "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project…" If significant impacts are identified, feasible Mitigation Measures are formulated to eliminate or reduce the level of the impacts and focus on the protection of sensitive resources.

CEQA Guidelines Section 15126.4(a)(3) states that mitigation measures are not required for effects which are not found to be significant. Therefore, where an impact is less than significant no mitigation measures have been proposed. In addition, compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less than significant levels are not considered mitigation measures under CEQA. Where potentially adverse impacts may occur, SCE has proposed Applicant Proposed Measures (APMs) to minimize the environmental impacts.

4.1 Aesthetics

This section examines visual resources in the area of the Proposed Project to determine how the project could affect the aesthetic character of the landscape. Visual resources are generally defined as the natural and built features of the landscape that can be viewed. Landforms, water, and vegetation patterns are among the natural landscape features that define an area's visual character, whereas buildings, roads and other structures reflect human modifications to the landscape. These natural and built landscape features are considered visual resources that contribute to the public's experience and appreciation of the environment. This section analyzes whether the Proposed Project would alter the perceived visual character of the environment to cause visual impacts. Alternatives to the Proposed Project are also discussed.

4.1.1 Environmental Setting

Northeastern Kings County is a rural part of the central San Joaquin Valley. The foothills of the Sierra Nevada Range are about 30 miles to the east, and the Diablo Range which parallels the California coast is roughly 40 miles to the west of the Proposed Project. The region is part of an alluvial plain comprised of rivers flowing west from the Sierra Nevada foothills spreading out and draining in the fertile valley soils. The area has been intensively farmed and is considered among the most productive agricultural regions in the United States. The landscape setting of the region is shown on Figure 4.1-1, Regional Landscape Context.

Highway 99, the region's major north-south corridor, follows the eastern edge of the San Joaquin Valley. Highway 198 runs east-west across the valley leading to Sequoia and Kings Canyon national parks located approximately 40 miles east, and connects to Interstate 5 to the west. In general, northeastern Kings County is sparsely settled. The City of Hanford, a community of about 41,000 residents, lies about two miles west of the Proposed Project and Lemoore Naval Air Station is located about 15 miles to the west.

There are no State Scenic Highways in Kings County. Highway 41, located approximately 40 miles to the southwest of the Proposed Project, is the only eligible State Scenic Highway in Kings County.

Current nighttime lighting in the area of the Proposed Project includes overhead lighting along Highway 43.

4.1.2 Regulatory Setting

There are no aesthetic-related laws, rules, or regulations that apply to the Proposed Project or its alternatives.

Figure 4.1-1 Regional Landscape Context

Figure 4.1-1 Regional Landscape Context

4.1.3 Significance Criteria

The significance criteria for assessing the impacts to aesthetics come from the CEQA Environmental Checklist. According to the CEQA checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

4.1.4 Impact Analysis

Background

The visual analysis is based on review of technical data including maps and drawings provided by SCE, aerial and ground level photographs of the area, local planning documents, and computer-generated visual simulations. Field observations were conducted in July 2009 to document existing visual conditions in the vicinity of the Proposed Project and to identify potentially affected sensitive viewing locations.

This visual study employs assessment methods based, in part, on the US Department of Transportation Federal Highway Administration (FHWA) and other accepted visual analysis techniques as summarized by Smardon et al., 1986. This study also addresses the CEQA Guidelines for visual impact analysis. Included are systematic documentation of the visual setting, an evaluation of visual changes associated with the Proposed Project, and standards incorporated into the Proposed Project design to reduce potentially significant visual impacts.

Consistent with FHWA methods, this impact analysis describes change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of representative views from which the project would be visible to the public. In order to document the visual change that would occur, visual simulations show the Proposed Project from a subset of the visual character photographs, representing key viewpoints. The visual simulations are presented as “before” and “after” images. The visual impact assessment is based on evaluation of the changes to the existing visual resources that would result from construction and operation of the Proposed Project. These changes were assessed, in part, by evaluating the computer-generated visual simulations showing visual conditions with the Proposed Project and comparing them to the corresponding existing view.

Viewing distance is a key factor that affects the potential degree of project visibility. For reference, it may be noted that visual details generally become apparent to the viewer when they are seen in the foreground, at distances of 0.25 to 0.5 mile or less (Smardon 1986). For purposes of this visual analysis, the primary focus is considered this foreground viewshed area, where visual details are apparent, and up to approximately one mile from the Proposed Project, where change could be noticeable.

Accepted visual assessment methods, including those adopted by FHWA and other federal agencies, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria for evaluating visual impact significance, is generally divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources, while others tend to be distracting (US Department of Transportation, 1986).

Motorists represent the largest potentially affected viewer groups. Included in this group are motorists traveling on Grangeville Road, Highway 198, Lacey Boulevard, and Hanford-Armona Road as well as some smaller residential streets. Motorists may include local and regional travelers who are familiar with the visual setting and travelers using the roadway on a less regular basis. Given the posted speed limits of 65 miles per hour, motorists' view duration is relatively short, estimated at less than a minute to a few minutes depending on traffic speed. Viewer sensitivity of motorists is considered low to moderate.

Within the project vicinity, pedestrians and cyclists are limited in number and therefore are not considered a key potentially affected viewer group for purposes of the visual analysis. Given slower travel speed, the view duration of pedestrians and cyclists is generally longer than for motorists, and thus this group may notice more detail with respect to visual change in the environment. Viewer sensitivity of pedestrians and cyclists is generally considered moderate.

The other potentially affected viewer group is residents in the vicinity of the Proposed Project including occupants of scattered rural residences and some residents in the neighborhood along Ponderosa Road. Because the region is sparsely populated, the number of residential viewers is relatively small. Mature landscaping and trees situated near residences generally screen residential views toward the Proposed Project. Residential views tend to be long in duration, and the sensitivity of this viewer group is considered moderate to high.

Visual Setting of the Proposed Project

Northeastern Kings County is dominated by agricultural uses, primarily field crops with some orchards. The Proposed Project lies near or crosses county roads and irrigation channels. Typical structures found in this landscape setting include scattered rural residences and commercial and agricultural buildings, such as barns and sheds as well as

utility poles and powerlines. Figure 4.1-2, Photo Viewpoint Locations, is a map of the area that delineates the Proposed Project components and photo viewpoint locations. A set of 12 photographs presented on Figures 4.1-3a through 4.1-4c, Visual Context Photographs, portray representative visual conditions and public views in the vicinity of the Proposed Project.

The Proposed Project substation site would be bordered to the north by Grangeville Road, a two-lane rural roadway, and by a PG&E powerline to the east. Croplands border the site to the south and west. Orchards lie across Grangeville Road to the north. Photos 1 through 6 portray public views taken near the substation site. Photos 1 through 3 depict representative views from Grangeville Boulevard; Photo 2 is a closer range view from the Grangeville and 7-1/2 Avenue intersection. These photographs portray the substation site's level and undeveloped landscape character as well as the presence of the wood-pole supported subtransmission line along the south side of Grangeville Boulevard (Goshen-Hanford 66 kV subtransmission line). Photos 2 and 3 also show lattice steel poles associated with the PG&E powerline that runs north-south through the area. Photos 4 through 6 are views of the substation site taken from places along Highway 43. Photo 5, from Grangeville Boulevard at Highway 43, includes the Goshen-Hanford 66 kV subtransmission line supported by wood poles as well as lightweight steel poles on the south side of the roadway with mature trees and wood utility poles seen on the left. Photo 4 is a view from Highway 43. From this location, intervening vegetation and structures screen views of the substation site.

The Proposed Project subtransmission line segment is approximately 2 miles long and parallels an existing PG&E powerline. The landscape along the route is characterized primarily by flat, open croplands. The southern portion of the subtransmission line segment crosses Lakeside Ditch. North of Lacey Boulevard, a small residential neighborhood with mature trees is situated east of the PG&E powerline. Photos 7 through 12 portray the visual character along the route. Near its midpoint, the route crosses Highway 198 and Lacey Boulevard. It also crosses the Southern Pacific railroad line. Photos 7 and 8 depict views of the route from streets within the residential area located north of Lacey Boulevard. These views show the residential character of single-family houses and rural land uses. The PG&E powerline is a noticeable vertical element seen within this landscape setting. Photos 9 and 10 are views from Highway 198 looking respectively west and southeast toward the subtransmission line segment. As shown in Photo 10, the PG&E powerline is visible on the skyline across the open landscape.

Photos 11 and 12 show views looking respectively north and west toward the Proposed Project subtransmission line segment from Hanford-Armona Road. Photo 11 includes an irrigation ditch in the foreground with a large-scale agricultural processing facility and mature tree canopies seen in the distance to the north. The PG&E powerline appears near the center of the view and a line of wood poles is visible to the right. Several residences face the roadway near this vantage point. Photo 12 includes various commercial buildings as well as lattice steel and wood poles situated along Hanford-Armona Road.

4.1.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criteria:

Would the project have a substantial adverse effect on a scenic vista?

There are no identified scenic vistas in the area of the Proposed Project. As a result, there would be no impact to a scenic vista from construction and operation of the Proposed Project.

Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no designated State Scenic Highways within Kings County. Therefore, construction and operation of the Proposed Project damage scenic resources within a State Scenic Highway. There would be no impact.

4.1.4.2 Construction Impacts

Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction of the Proposed Project would introduce the presence of off-road equipment, materials, and work crews into the area. These construction features are visually very similar to those typically utilized for normal agriculture operations, and would not constitute a substantial visual change to the visual character or quality of the site and its surroundings. Impacts would be less than significant.

Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Under normal circumstances, construction of the Proposed Project would occur during daylight hours. However, there is a possibility that construction would occur at night, and temporary artificial illumination would be required. SCE would use lighting to protect the safety of the construction workers, but orient the lights to minimize their effect on any nearby receptors. Impacts would be less than significant.

Figure 4.1-2 Photo Viewpoint Locations

Figure 4.1-2 Photo Viewpoint Locations

Figure 4.1-3 Visual Context Photographs

Figures 4.1-3a through 4.1-3c Visual Context Photographs

Figures 4.1-3a through 4.1-3c Visual Context Photographs

Figures 4.1-3a through 4.1-3c Visual Context Photographs

Figures 4.1-3a through 4.1-3c Visual Context Photographs

Figures 4.1-3a through 4.1-3c Visual Context Photographs

4.1.5 Operation Impacts

Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

The Proposed Project would be located within a flat, rural landscape dominated by agriculture. The visual setting does not include unique or highly scenic landscape features. Unobstructed views of the Proposed Project are available from many places in the area; however, mature vegetation including canopy trees is generally found in areas near residences. Therefore, residential views toward the Proposed Project are typically filtered or screened. The photographs presented in Figure 4.1-3, Visual Context Photographs, indicate that existing wood, steel, and lattice poles and overhead conductors are established landscape features found within this area. These existing utility structures are visible to the public from a variety of residential and roadway locations and can be seen in foreground, middleground, and/or distant views within the region.

Proposed Project Substation

Figure 4.1-4, Visual Simulation, Grangeville Boulevard, depicts a "before" and "after" view from eastbound Grangeville Boulevard between Highway 43 and 7-1/2 Avenue. The primary affected viewers in this area are Grangeville Boulevard motorists traveling east or westbound. The view encompasses a flat, open landscape with no intervening vegetation between the vantage point and the substation site which is located about 1,000 feet away. At this location, the existing foreground view includes 66 kV subtransmission structures along the south side of Grangeville Boulevard (the Goshen-Hanford 66 kV subtransmission line). On the north side of the road, another utility line supported by wood poles can be seen against a partial backdrop of orchard trees, and lattice steel poles and mature vegetation appear in the distance at the left and right side of the view.

The new substation including the perimeter wall and upper portions of the substation equipment appears near the center of the visual simulation. From this perspective the substation would be seen primarily against a backdrop of vegetation. Due to its low-profile design, the substation itself would be partially screened by the wall; visible portions of the substation equipment would appear against a backdrop of vegetation and sky. The perimeter wall would be noticeable; however, as shown in the simulation, the horizontal line and earth tone color of the new wall would blend in with the line and color of the flat agriculture landscape setting. In addition, SCE would develop an appropriate landscape plan that would be submitted to Kings County as part of the grading plan for the site, which would also provide a measure of visual screening with respect to public views of the substation.

Four new steel poles would appear against the skyline at the right side of the new substation. In terms of their vertical form and scale, the new poles would appear generally similar to the existing structures in the area.

Proposed Project Subtransmission Line Segment

Figure 4.1-5, Visual Simulation, Ponderosa Road, presents a view of the Proposed Project subtransmission line segment from the rural residential area along Ponderosa Road near Lacey Boulevard. The primary potentially affected viewers in this area are a limited number of residents who live in the immediate vicinity. In the existing view, residences and fenced horse fields appear in the foreground along the roadway and the existing PG&E powerline is visible against the sky toward the left and right. Dense mature vegetation located behind the residences provides a backdrop to this view.

The visual simulation shows new wood poles and the overhead subtransmission line segment, seen beyond the trees and residences. The subtransmission line segment lies approximately 400 feet away from this vantage point. The new poles would generally be similar to the existing PG&E powerline in terms of their both being vertical landscape elements. However, the new poles would appear less prominent than the existing steel poles because the form of the new wood poles is less complex than the existing steel lattice structures and because the new poles are not as tall. A comparison of the before and after view demonstrates that the presence of the new subtransmission line segment would represent a relatively minor incremental change to the existing landscape setting that would not substantially affect views at this location.

Figure 4.1-6, Visual Simulation, Highway 198, depicts a “before” and “after” view of the Proposed Project subtransmission line segment from Highway 198 west of the PG&E powerline. Currently there is an open view across agricultural fields toward the subtransmission line segment from this roadway location. Orchards, mature tree clusters and various agriculture structures appear in the distance, including a relatively large processing facility seen on the right. The foreground view includes Lacey Boulevard which at this point, is a frontage road to Highway 198 and the PG&E powerline, located less than 1,000 feet away, are visible at the skyline. The primary affected viewers in this area are motorists traveling along Highway 198 and Lacey Boulevard.

The simulation portrays the new steel poles of the Proposed Project subtransmission line segment paralleling the PG&E powerline. The new structures would be somewhat taller than the existing lattice towers; however, their simpler form would make them slightly less prominent in comparison to the lattice steel poles. The existing powerline and new subtransmission line segment would have a cohesive appearance in the landscape due to their similar scale and because the spacing between the new poles would correspond with the existing lattice steel pole spacing. The visual simulation demonstrates that the introduction of new TSPs would represent an incremental change to the existing view. Because the effect on highway motorists’ views would be brief in duration, typically lasting up to about 30 seconds, and given the presence of existing wood and lattice steel poles, the Proposed Project subtransmission line segment would not alter the visual character or landscape composition currently seen from this representative vantage point.

Figure 4.1-4 Visual Simulation, Grangeville Boulevard

Figure 4.1-4 Visual Simulation, Grangeville Boulevard

Figure 4.1-5 Visual Simulation, Ponderosa Road

Figure 4.1-5 Visual Simulation, Ponderosa Road

Figure 4.1-6 Visual Simulation, Highway 198

Figure 4.1-6 Visual Simulation, Highway 198

As shown on the visual simulations in Figures 4.1-4 through 4.1-6, the Proposed Project represents an incremental visual change that would not substantially alter existing visual character of the area. Therefore, operation of the Proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings, and impacts would be less than significant.

Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Current nighttime lighting in the vicinity of the Proposed Project includes overhead lighting along nearby Highway 43. The Proposed project substation would include manually operated lighting that would be turned on only during nighttime emergency work. In addition, a beacon safety light on the substation gate would activate when the gate is opened. Lighting at the substation would utilize non-glare light fixtures that would be mounted at approximately 7.5 feet in height and directed on-site in order to avoid casting light or glare off-site. Given its placement, design and infrequent use, the new nighttime lighting would be a minor incremental change to nighttime visual conditions that generally would not be noticeable to the public. The lighting would not be a significant source of light or glare. Impacts from light and glare would be less than significant.

4.1.6 Substation Site Alternative

The Substation Site Alternative is located across Grangeville Boulevard and 7-1/2 Avenue from the Proposed Project substation site. The visual characteristics of the Substation Site Alternative are similar to those for the Proposed Project, and the aesthetic impacts would be similar to those of the Proposed Project. Impacts would be less than significant.

4.1.7 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative is longer in length than that of the Proposed Project, and would be adjacent to existing roads. The visual characteristics of the Subtransmission Line Segment Alternative are similar to those for the Proposed Project, and the aesthetic impacts would be similar to those of the Proposed Project. Impacts would be less than significant.

4.1.8 References

Benchmark Maps. 2007. California Road and Recreation Atlas. Santa Barbara, California.

California Department of Transportation (Caltrans). 2009. California Scenic Highway Map. [online] http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm [cited July 2009].

Caltrans. 1996. Guidelines for the Official Designation of Scenic Highways. [online] http://www.dot.ca.gov/hq/LandArch/scenic_hwy_guidelines.htm. [cited July 2009].

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited July 2009].

Smardon, RC, JF Palmer, and JP Felleman, editors. 1986. Foundations for Visual Project Analysis. Wiley. New York.

4.2 Agricultural Resources

This section describes the agricultural resources in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.2.1 Environmental Setting

Farming operations are common throughout nearly all of Kings County except the mountainous areas to the southwest and heavily developed areas of the larger communities (Kings County, 1993). Kings County's agriculture is a vital industry in the local economy and consistently ranks among the most profitable in California. In 2007, Kings County ranked 8th among California counties for agricultural production and according to the 2008 annual Kings County Crop Report, agriculture production accounted for an estimated $1,760,168,000. The primary agricultural products produced in Kings County include milk, cotton, cattle, alfalfa, and tomatoes. In addition to cultivated areas, there are an estimated 243,183 acres used as grazing lands (CDC, 2006).

Section 21060.1 of CEQA defines agricultural land as "prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California." The State of California has modified the farmland classifications for prime farmland and farmland of statewide importance by requiring these lands be irrigated (CDC, 2008). Approximately 67 percent of land in Kings County is classified as Farmland by the California Department of Conservation. The farmland in Kings County is summarized in Table 4.2, Summary of Farmland in Kings County. Classified farmland in the vicinity of the Proposed Project is shown on Figure 4.2, Classified Farmland and Lands Subject to Williamson Act Contract.

Table 4.2 Summary of Farmland in Kings County

	Inventoried acreage in Kings County	**Percent of total acreage in Kings County**
Prime Farmland	139,212	15.6 percent
Farmland of Statewide Importance	420,422	47.2 percent
Unique Farmland	25,982	2.9 percent
CEQA Agricultural Land Total	**594,484**	**65.7 percent**
Farmland of Local Importance	8,868	0.9 percent

Source: CDC, 2006

Kings County has four zoning designations related to agriculture: Limited Agriculture (AL-10), General Agriculture-20 Acre (AG-20), General Agriculture-40 Acre (AG-40), and Exclusive Agriculture (AX-40). Compatible uses permitted in these zoning designations include public utility and public service structures including electric

transmission and distribution substations, gas regulator stations, communications equipment buildings, public service pumping stations and reservoirs.

4.2.2 Regulatory Setting

California Land Conservation Act (Williamson Act). The California Land Conservation Act of 1965, commonly known as the Williamson Act, was enacted to encourage preservation of agricultural and open space lands, and encourage efficient urban growth. The Williamson Act provides incentives to landowners, through reduced property taxes to create an agricultural preserve, who agree to keep their land in agricultural production (or another compatible use) for at least 10 years. Section 51238 of the Williamson Act indicates that, unless local organizations declare otherwise, the erection, construction, alteration, or maintenance of gas, electric, water, or communication facilities are compatible with Williamson Act contracts. Kings County has deemed public utility and public service structures including electric transmission and distribution substations as compatible uses on Williamson Act lands.

4.2.3 Significance Criteria

The significance criteria for assessing the impacts to agricultural resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Convert prime farmland, unique farmland, or farmland of statewide importance, to nonagricultural use
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to nonagricultural use

4.2.4 Impact Analysis

4.2.4.1 No Impact

Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Proposed Project substation site is zoned AL-10. The Proposed Project subtransmission line segment would cross land zoned for AG-20, AL-10, and Light Industrial (ML). These zoning designations have permitted uses that include public utility and public service structures including electric transmission and distribution substations. In addition, the presence of public utility structures is considered compatible with land subject to a Williamson Act contract as administered by Kings County. As a result, construction and operation of the Proposed Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. There would be no impact.

Figure 4.2 Classified Farmland and Lands Subject to Williamson Act Contract

Figure 4.2 Classified Farmland and Lands Subject to Williamson Act Contract

4.2.4.2 Construction Impacts

Would the project convert prime farmland, unique farmland, or farmland of statewide importance, to nonagricultural use?

The Proposed Project substation site and the subtransmission line segment and access roads would be constructed on farmland of statewide importance. During construction, the Proposed Project would disturb approximately 30 acres of land. Approximately 594,484 acres of CEQA Agricultural Land are inventoried in Kings County, and the 30 acres utilized by the Proposed Project during construction would represent less than five thousandths of one percent (<0.005 percent) of this total. Impacts would be less than significant.

Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to nonagricultural use?

In general, the use of off-road equipment and transporting of material that is common to construction sites are very similar to typical agricultural activities. Construction of the Proposed Project would primarily occur at the substation site and along the subtransmission line segment route, the latter of which has adjacent existing structures. A material staging yard would be established to store materials, equipment, and provide parking for site workers. The use of the material staging yard would be temporary, and would not involve substantial changes to the existing environment. Construction of the Proposed Project would not cause other changes in the environment that would result in the conversion of farmland to nonagricultural use. Impacts would be less than significant.

4.2.4.3 Operation Impacts

Would the project convert prime farmland, unique farmland, or farmland of statewide importance, to nonagricultural use?

As discussed above, the Proposed Project would be located on farmland of statewide importance. Once construction is completed, approximately 22 acres of the area required for construction would be restored, leaving approximately 8 acres permanently disturbed for the Proposed Project substation, subtransmission structures, and access roads. Approximately 594,484 acres of CEQA Agricultural Land are inventoried in Kings County, and the Proposed Project would convert less than two thousandth of one percent (<0.002 percent) of this total. Although the Proposed Project would permanently convert farmland to nonagricultural use, electrical facilities are considered a compatible use with agricultural activities in both the zoning code and Williamson Act contracts. Therefore, impacts would be less than significant.

Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to nonagricultural use?

It is not anticipated that the Proposed Project would result in other changes to the environment that would result in the conversion of farmland to non-agricultural use. The

Proposed Project substation would be a single use facility and would not result in conversion of adjacent lands to other uses. As noted in Section 6.2, Growth Inducing Impacts, the Proposed Project would not be growth-inducing and would, therefore, not be expected to induce conversion of adjacent agricultural land. Impacts would be less than significant.

4.2.5 Substation Site Alternative

The Substation Site Alternative is also located on land zoned for AL-10, and on farmland of statewide importance. The construction and operation issues associated the Substation Site Alternative are similar to those of the Proposed Project. As a result, the impacts to agriculture would be similar to those of the Proposed Project. Impacts would be less than significant.

4.2.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative would be located within public rights-of-way. As a result, the impacts with respect to agricultural resources for the Subtransmission Line Segment Alternative would be less than those for the Proposed Project. Impacts would be less than significant.

4.2.7 References

California Department of Conservation (CDC). 2006. 2004 - 2006 Farmland Conversion Data. [online] http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx [cited May 2009].

Kings County. 2009. 2008 Annual Agricultural Crop Report for the County of Kings. Prepared by Department of Agriculture/Measurement Standards.

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

Kings County. 2009. Implementation Procedures for the California Land Conservation "Williamson" Act of 1965 including Farmland Security Zones [online] http://www.countyofkings.com/planning/Plan/AG%20Pres/2009%20Procedure%20Manual%20Update%20FINAL.pdf [cited September 2009]

4.3 Air Quality

This section describes the air quality in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.3.1 Environmental Setting

The Proposed Project lies within the San Joaquin Valley Air Basin (SJVAB), a region that is approximately 250 miles long and averages 35 miles wide and is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. Marine air generally flows into the basin from the San Joaquin River Delta; however, the region's topographic features severely restrict air movement through and out of the basin, resulting in weak airflow (SJVAPCD, 2002a).

The SJVAB is both a federal and state designated air basin, and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD adopts and enforces rules and regulations to achieve State and federal ambient air quality standards and enforces applicable State and federal laws.

The Clean Air Act of 1970 required the USEPA to adopt ambient air quality standards. The National Ambient Air Quality Standards (NAAQS) are the maximum levels, given a margin of safety, of background pollution that is considered safe for public health and welfare. Air quality standards developed by individual states must be at least as stringent as those set forth by the USEPA. The California Air Resources Board (CARB) has developed California Ambient Air Quality Standards (CAAQS).

Areas that fail to meet federal NAAQS (and CAAQS in California) are identified as nonattainment areas. When an area is designated as nonattainment, regional air quality management agencies are required to develop detailed plans that will lower the emissions of pollutants in order to reach attainment, and sources of pollutants are typically subject to more stringent air permitting requirements than similar sources in attainment areas.

Presently, the ambient air in the area of the Proposed Project is classified by the CARB as nonattainment for ozone (O_3), suspended particulate matter measuring less than 10 microns (PM_{10}), and suspended particulate matter measuring less than 2.5 microns ($PM_{2.5}$). The ambient air in the area is either unclassified or classified as attainment for all other State regulated air pollutants (CARB, 2009). The attainment status of each CAAQS and NAAQS pollutant is shown in Table 4.3-1, Federal and California Ambient Air Quality Standards and San Joaquin Valley Air Basin Attainment Status.

Table 4.3-1 Federal and California Ambient Air Quality Standards and San Joaquin Valley Air Basin Attainment Status

Pollutant	Federal Standards	Designation/ Classification	State Standards	Designation/ Classification
Ozone - 1-hour	No Federal Standard	--	0.09 ppm (180 ug/m^3)	Nonattainment/ Severe
Ozone - 8-hour	0.075 ppm (147 ug/m^3)	Nonattainment/ Serious[1]	0.070 ppm (137 ug/m^3)	Nonattainment
PM_{10}	24-hr 0.14 ppm (365 ug/m^3)	Attainment	Annual Arithmetic Mean 20 ug/m^3 24-hr 50 ppm	Nonattainment
$PM_{2.5}$	Annual Arithmetic Mean 15 ug/m^3 24-hr 35 ug/m^3	Nonattainment	Annual Arithmetic Mean 20 ug/m^3	Nonattainment
Carbon Monoxide	8-hr 9 ppm (10 ug/m^3) 1-hr 35 ppm (40 ug/m^3)	Attainment/ Unclassified	8-hr 9 ppm (10 ug/m^3) 1-hr 20 ppm (23 ug/m^3)	Attainment/ Unclassified
Nitrogen Dioxide	Annual Arithmetic Mean 0.053 ppm (100 ug/m^3)	Attainment/ Unclassified	Annual Arithmetic Mean 0.030 ppm (56 ug/m^3) 1-hr 0.18 ppm (338 ug/m^3)	Attainment
Sulfur Dioxide	Annual Arithmetic Mean 0.03 ppm (80 ug/m^3) 24-hr 0.14 ppm (365 ug/m^3)	Attainment/ Unclassified	24-hr 0.04 ppm (105 ug/m^3) 1-hr 0.25 ppm (655 ug/m^3)	Attainment
Lead (Particulate)	Rolling 3-month period, evaluated over 3-yr period 0.15 ug/m^3	No Designation/ Classification	30 Day Average 1.5 ug/m^3	Attainment
Hydrogen Sulfide	No Federal Standard	--	1-hr 0.03 ppm (42 ug/m^3)	Unclassified
Sulfates	No Federal Standard	--	24-hr 25 ug/m^3	Attainment
Visibility Reducing Particles	No Federal Standard	--	See note (2) below	Unclassified
Vinyl Chloride	No Federal Standard	--	24-hr 0.010 ppm (26 ug/m^3)	Attainment

Notes:
[1]On April 30, 2007 the Governing Board of the San Joaquin Valley Air Pollution Control District voted to request USEPA to reclassify the San Joaquin Valley Air Basin as extreme nonattainment for the federal 8-hour ozone standards. The California Air Resources Board, on June 14, 2007, approved this request. This

request must be forwarded to USEPA by the California Air Resources Board and would become effective upon USEPA final rulemaking after a notice and comment process; it is not yet in effect.
[2]Statewide Visibility Reducing Particle Standard: Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

4.3.2 Regulatory Setting

Federal Clean Air Act and Amendments. These statutes provide the USEPA with the authority to set ambient air quality standards and grant a waiver for California to set stricter standards. Other states have the choice of adopting federal standards or the more stringent California ambient air quality standards. The USEPA also requires a State Implementation Plan that outlines the state regulations and programs that will be implemented to demonstrate how a state will attain or maintain the ambient air quality standards within a given period of time. Through the Clean Air Act and Amendments, the USEPA also implements on- and off-road engine emission reduction programs that periodically phase in engine efficiency requirements and/or ancillary engine or exhaust equipment that result in cleaner emissions from on- and off-road equipment.

California Air Quality Statutes. Through these statutes, the CARB is given the authority to develop ambient air quality standards for the state. The CARB also implements the Off-road Mobile Sources Emission Reduction Program to reduce emissions from off-road equipment, and the Portable Equipment Registration Program, a program that evaluates portable equipment and provides a registry for qualifying equipment to be exempt from obtaining separate air quality permits to operate within each individual air basin.

San Joaquin Valley Air Pollution Control District. In addition to supporting CARB and USEPA air quality programs, the SJVAPCD also develops plans and implements control measures of regulated pollutants in the San Joaquin Air Basin, primarily affecting stationary sources such as factories and industrial plants. In addition, the SJVAPCD provides guidance for projects undergoing a CEQA evaluation through its "Guide for Assessing and Mitigating Air Quality Impacts".

4.3.3 Significance Criteria

The significance criteria for assessing the impacts to air quality come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state

ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

4.3.4 Impact Analysis

The SJVAPCD has developed uniform procedure guidelines for CEQA air quality analyses to be utilized for implementing federal and State air quality plans. This guidance is set forth in the Environmental Review Guidelines Procedures for Implementing the California Environmental Quality Act, the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2002b), and the Guide for Assessing and Mitigating Air Quality Impacts Technical Document Information for Preparing Air Quality Sections in EIRs (SJVAPCD, 2002a).

The SJVAPCD guidance distinguishes between short-term (construction) impacts to air quality and long-term (operation) impacts to air quality. The documents present methodologies for assessing air quality impacts and include thresholds of significance that apply to a project within their jurisdiction. These methods were used to evaluate the Proposed Project's impacts to air quality presented below.

4.3.4.1 Construction Impacts

Would the project conflict with or obstruct implementation of the applicable air quality plan?

For potential short-term impacts to air quality, the SJVAPCD focuses on control measures of PM_{10} emissions that occur as a result of the construction of a given project. The SJVAPCD Regulation VIII requires that all construction projects located within its jurisdiction implement fugitive dust control measures. These measures are listed in Table 4.3-2, Regulation VIII Control Measures for Construction Emissions of PM_{10} in the San Joaquin Valley Air Basin. With the implementation of the required SJVAPCD control measures, impacts would be less than significant.

Table 4.3-2 Regulation VIII Control Measures for Construction Emissions of PM_{10} in the San Joaquin Valley Air Basin

The following controls are required to be implemented at all construction sites in the San Joaquin Valley Air Basin
All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Although the SJVAPCD recognizes that construction equipment emits ozone precursors and carbon monoxide, it has determined that those pollutants may cause a significant air quality impact only in the case of a "very large or very intense" construction project (SJVAPCD, 2002b). The SJVAPCD has established a tiered approach to determining the significance related to a project's quantified ozone precursor emissions. The SJVAPCD has pre-calculated the emissions for a large number of different types of projects to identify the level at which they have no possibility of exceeding the emissions thresholds. Projects falling under these size thresholds qualify for what the SJVAPCD refers to as the "Small Project Analysis Level" (SPAL), and no quantification of ozone precursor emissions is needed. One of the SPAL designations is a housing project of 152 single family housing units in size. Based on the 5 acre substation site and the limited disturbance associated with installing the new subtransmission line segment, construction of the Proposed Project would produce fewer emissions of criteria pollutants than

constructing 152 single family housing units. As a result, the Proposed Project would not be considered a very large nor intense construction project. Impacts to air quality standards and air quality violations would be less than significant.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The SJVAPCD accounts for cumulative impacts to air quality in its "Guide for Assessing and Mitigating Air Quality Impacts Technical Document Information for Preparing Air Quality Sections in EIRs" and its "Guide for Assessing and Mitigating Air Quality Impacts". The SJVAPCD considered basin-wide cumulative impacts to air quality when developing its significance thresholds (SJVAPCD, 2002b). The construction of the Proposed Project would result in impacts to air quality well below those normally considered to be significant. As a result, the cumulative impacts to air quality from construction of the Proposed Project are considered to be less than significant.

Would the project expose sensitive receptors to substantial pollutant concentrations?

The SJVAPCD requires additional PM_{10} control measures to be implemented during construction at sites in proximity to sensitive receptors. A sensitive receptor is generically defined as a location where human populations, especially children, seniors, and sick people are found, and there is a reasonable expectation of continuous exposure for the duration of the averaging period of air quality standards. Because the Proposed Project would be constructed in an agricultural area, construction of the Proposed Project would have a less than significant effect to exposing sensitive receptors to substantial pollutant concentrations.

Would the project create objectionable odors affecting a substantial number of people?

Construction of the Proposed Project would not include components that would create objectionable odors that would affect a substantial number of people, nor would it substantially expose construction personnel to existing sources of odor. Impacts would be less than significant.

4.3.4.2 Operation Impacts

Would the project conflict with or obstruct implementation of the applicable air quality plan?

The SJVAPCD guidance documents outline a methodology for determining the long-term (operational) impacts of a project. This methodology uses a tiered approach for determining if ozone precursor emissions are above or below significance thresholds. The lowest tier, the Small Project Analysis Level (SPAL), is based on the project size and the project type (SJVAPCD, 2002b). Reviewing the criteria set forth by the SJVAPCD, one of the most stringent categories includes a residential land use and vehicle trip rate of 1,453 vehicle trips per day. Because the Proposed Project would generate substantially

fewer than 1,453 vehicle trips per day, operation of the Proposed Project qualifies for the Small Project Analysis Level and is expected to emit less than the significance threshold for ozone precursors (SJVAPCD, 2002b).

Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Operation of the Proposed Project would consist of routine inspections and repair of the substation, subtransmission line segment, and access roads. These intermittent activities would not contribute substantially to an existing or projected air quality violation. Impacts would be less than significant.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The SJVAPCD accounts for cumulative impacts to air quality in its "Guide for Assessing and Mitigating Air Quality Impacts Technical Document Information for Preparing Air Quality Sections in EIRs" and its "Guide for Assessing and Mitigating Air Quality Impacts". The SJVAPCD considered basin-wide cumulative impacts to air quality when developing its significance thresholds (SJVAPCD, 2002b). The number of vehicle trips per year required to operate the Proposed Project would be substantially less than that expected from a project requiring a quantitative analysis by the SJVAPCD. The operation of the Proposed Project would result in impacts to air quality far below those considered to be significant. As a result, the cumulative impacts to air quality from construction and operation of the Proposed Project are considered to be less than significant.

Would the project expose sensitive receptors to substantial pollutant concentrations?

A SPAL project is also required to assess potential impacts from hazardous air pollutants during operations. Hazardous air pollutants emitted during operations would be limited to those from fuel combustion in vehicles utilized during routine inspections and repair of the substation, subtransmission line segment, and access roads. Due to the intermittent and limited vehicular activity during operations, hazardous air pollutant impacts are anticipated to be less than significant.

Would the project create objectionable odors affecting a substantial number of people?

Operation of the Proposed Project would not include components that would create objectionable odors that would affect a substantial number of people, nor would it substantially expose operation personnel to existing sources of odor. There would be no impact.

4.3.5 Substation Site Alternative

The Substation Site Alternative would also be located within an area under the jurisdiction of the SJVAPCD, and its construction and operation would be similar in

scope to that of the Proposed Project substation. The Substation Site Alternative would have similar impacts as the Proposed Project substation. Impacts would be less than significant.

4.3.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative would also be located within an area under the jurisdiction of the SJVAPCD, and its construction and operation would be similar in scope to that of the Proposed Project subtransmission line segment. However, the Subtransmission Line Segment Alternative is approximately 3.5 miles longer than the Proposed Project subtransmission line segment, which may have greater impacts to air quality than the Proposed Project subtransmission line segment. However, impacts would be less than significant.

4.3.7 References

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4.4 Biological Resources

This section describes the biological resources in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.4.1 Environmental Setting

The biological diversity in Kings County has historically been associated with the former Tulare Lake, which was a shallow, freshwater lake surrounded by extensive tule marshes and a "bathtub ring" of alkali scrub vegetation. This former lake was watered by runoff from the Sierra Nevada Mountains to the east and from the arroyos originating in the arid foothills of the Coastal Ranges to the west. The largest of these streams (including the Kings River, Cross Creek, and Kern River) supported luxuriant hardwood forests, riparian woodland, willow scrub, and marsh vegetation. The hydrology of this runoff-dependent system has been so drastically altered by agricultural water development and flood control that Tulare Lake no longer exists as a natural wetland ecosystem, and the resulting riparian community has been reduced to scattered, highly degraded remnant stands where vigorous mature trees are outnumbered by snags and mistletoe-infested specimens. Most of the original plant communities of Kings County are still present, although in much reduced acreages (Kings County, 1993).

There is no US Fish and Wildlife Service designated critical habitat in northeastern Kings County. There are no known HCPs or NCCPs within the vicinity of the Proposed Project.

Presently, there are no ordinances relating to tree protection within the Kings County Municipal Code.

4.4.2 Regulatory Setting

Federal Endangered Species Act. The federal Endangered Species Act (7 USC 136; 16 USC 460) of 1973 provides for the conservation of plant and animal species that are endangered or threatened with extinction throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The federal Endangered Species Act forbids any government agency, corporation, or citizen from taking (i.e. harming, harassing, or killing) endangered animals without a permit. Section 10 of the federal Endangered Species Act requires non-federal entities to consult with the USFWS prior to executing a project that affects federally listed species or the alteration of critical habitat.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or

barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) or part thereof.

State of California Endangered Species Act. The State of California Endangered Species Act ensures legal protection for plants and animals listed as rare or endangered. The State also lists "Species of Special Concern" based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under the law, the California Department of Fish and Game (CDFG) is empowered to review projects for their potential to impact state-listed species and Species of Special Concern and their habitats.

California Fish and Game Code, Sections 1600-1603. This statute regulates activities that would "substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of a natural watercourse" that supports fish or wildlife resources. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. A Streambed Alteration Agreement must be obtained for any project that would result in an adverse impact to a river, stream, or lake. If fish or wildlife would be substantially adversely affected, an agreement to implement mitigation measures identified by the CDFG would be required.

California Fish and Game Code Section 3503.5. States that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment is considered take by CDFG.

4.4.3 Significance Criteria

The significance criteria for assessing the impacts to biological resources come from the CEQA Environmental Checklist. According to the checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

4.4.4 Impact Analysis

Focused biological surveys and habitat suitability assessments for special status plant and wildlife species for the Proposed Project, Substation Site Alternative, and the Subtransmission Line Segment Alternative were conducted on July 14 and 15, 2009. In addition, focused surveys to determine the presence or absence were conducted for the burrowing owl and San Joaquin kit fox due to recorded observations of these species in the region. These surveys were conducted in July 2009, and were limited to those areas that contained potentially suitable habitat.

Prior to field surveys, a literature review was performed to identify special status plants, wildlife, and habitats known to occur in the vicinity of the Survey Areas. This search included a review of the US Geological Survey Hanford, Remnoy, Laton, Burris Park, Goshen, Traver, Paige, Waukena, and Guernsey 7.5-minute quadrangles in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California, and the CDFG California Natural Diversity Database (CNDDB). The Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998b) was also reviewed.

Vegetation Communities and Sensitive Plant Species

- Alkali grassland occurs on the west side of 6th Avenue, south of the junction with Highway 198. This habitat type is dominated by non native grasses and forbs including ripgut grass (*Bromus diandrus*), London rocket (*Sisymbrium irio*), and cheeseweed (*Malva parviflora*); however, the native component of this vegetation type includes salt grass (*Distichilis spicata*), alkali sacaton (*Sporobolus airoides*), alkali weed (*Cressa truxillensis*), and common spikeweed (*Centromadia pungens* ssp. *pungens*). The area is fairly disturbed but maintains at least 10 percent cover by native grasses and forbs.

- Agriculture occurs throughout the areas surveyed and is the dominant vegetation type. This includes active fields of corn (*Zea mays*), cotton (*Gossypium sp.*), and alfalfa (*Medicago sativa*), as well as various fruit and nut orchards.

- Ornamental vegetation is found throughout the areas surveyed, most often associated with developed areas. Ornamental species observed include oleander (*Nerium oleander*) and Tasmanian blue gum (*Eucalyptus globulus*).

- Irrigation channels in the areas surveyed vary in width from 10 to 25 feet. The sides of the channel are lined with sparse vegetation including African umbrella sedge (*Cyperus involucratus*), water smartweed (*Polygonum amphibium*), and common horseweed (*Conyza canadensis*).

- Developed areas in the areas surveyed include paved roads, parking areas, and buildings (e.g., residences, commercial buildings and dairy facilities).

- Disturbed areas in the areas surveyed are mostly unvegetated and used as access roads for equipment and vehicle movement around active fields.

No special status vegetation communities are present in the areas surveyed.

Special status plant species known to occur in the areas surveyed are listed in Table 4.4-1, Sensitive Plant Species Potentially Occurring in the Vicinity of the Proposed Project. Also summarized is the habitat suitability and the likelihood of occurrence.

Table 4.4-1 Sensitive Plant Species Potentially Occurring in the Vicinity of the Proposed Project

Species and Status	Proposed Project Substation Site	Proposed Project Subtransmission Line Segment	Substation Site Alternative	Subtransmission Line Segment Alternative
Heartscale *Atriplex cordulata* 1B.2	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat
Brittlescale *Atriplex depressa* 1B.2	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat
Earlimart orache *Atriplex erecticaulis* 1B.2	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat
Lesser saltscale *Atriplex minuscule* 1B.1	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat
Subtle orache *Atriplex subtilis* 1B.2	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat
Recurved larkspur *Delphinium recurvatum* 1B.2	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat	Not expected to occur; no suitable habitat

Note:
CNPS List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
CNPS Threat Code Extensions
None Plants lacking any threat information
.1 Seriously Endangered in California (over 80 percent of occurrences threatened; high degree and immediacy of threat)
.2 Fairly Endangered in California (20–80 percent of occurrences threatened)

Wildlife and Sensitive Wildlife Species

Due to the active agriculture nature of the area, there is limited suitable habitat for wildlife species. Western mosquitofish (*Gambusia affinis*) and tadpoles were observed in the irrigation channels. The tadpoles were unidentified; however, there is potential for species such as the western toad (*Bufo boreas*) and Pacific treefrog (*Pseudacris* [*Hyla*] *regilla*) to occur within the areas surveyed. One reptile species, western fence lizard (*Sceloporus occidentalis*) was observed during the reconnaissance survey. Common reptile species such as side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis catenifer*) are also expected to occur.

Table 4.4-2 Sensitive Wildlife Species Potentially Occurring in the Vicinity of the Proposed Project

Species and Status	Proposed Project Substation Site	Proposed Project Subtransmission Line Segment	Alternative Substation Site	Subtransmission Line Segment Alternative
Vernal pool fairy shrimp *Branchinecta lynchi* FT	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat
Vernal pool tadpole shrimp *Lepidurus packardi* FE	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat
California tiger salamander *Ambystoma californiense* FT, SSC	Not expected to occur, no suitable breeding habitat	Not expected to occur, no suitable breeding habitat	Not expected to occur, no suitable breeding habitat	Not expected to occur, no suitable breeding habitat
Western spadefoot *Spea hammondii* SSC	Not expected to occur, no suitable breeding habitat	May occur, limited suitable breeding and upland habitat	Not expected to occur, no suitable breeding habitat	May occur, limited suitable breeding and upland habitat
Southwestern pond turtle *Actinemys marmorata pallida* SSC	Not expected to occur, no suitable breeding habitat	May occur, limited suitable breeding and upland habitat	Not expected to occur, no suitable breeding habitat	May occur, limited suitable breeding and upland habitat
Blunt-nosed leopard lizard *Gambelia sila* FE, SE	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	May occur, limited suitable habitat in alkali grassland areas
Golden eagle *Aquila chrysaetos* FP	May occur for foraging; no suitable nesting habitat	May occur for foraging; no suitable nesting habitat	May occur for foraging; no suitable nesting habitat	May occur for foraging; no suitable nesting habitat
Swainson's hawk *Buteo swainsoni* ST	May occur for foraging; no suitable nesting habitat	May occur, suitable foraging and limited nesting habitat.	May occur for foraging; no suitable nesting habitat	May occur, suitable foraging and limited nesting habitat

Species and Status	Proposed Project Substation Site	Proposed Project Subtransmission Line Segment	Alternative Substation Site	Subtransmission Line Segment Alternative
Burrowing owl *Athene cunicularia* SSC	Not expected to occur, no suitable habitat	**Expected to occur, suitable foraging and burrowing habitat. Observed during biological surveys**	Not expected to occur, no suitable habitat	**Expected to occur, suitable foraging and burrowing habitat. Observed during biological surveys**
Tipton kangaroo rat *Dipodomys nitratoides nitratoides* FE, SE	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat	Not expected to occur, no suitable habitat
San Joaquin kit fox *Vulpes macrotis mutica* FE, ST	Not expected to occur, no suitable habitat	May occur, not observed during focused surveys	Not expected to occur, no suitable habitat	May occur, not observed during focused surveys

Note:

Federal (USFWS)	FE	Endangered
	FT	Threatened
	FP	Fully Protected
State (CDFG)	SE	Endangered
	ST	Threatened
	SSC	Species of Special Concern

Bird species observed during the surveys include turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), Cassin's kingbird (*Tyrannus vociferans*), western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), northern rough-winged swallow (*Stelgidopteryx serripennis*), cliff swallow (*Petrochelidon pyrrhonota*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), lark sparrow (*Chondestes grammacus*), brown-headed cowbird (*Molothrus ater*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis psaltria*), and house sparrow (*Passer domesticus*).

Mammals, or their sign, observed during the surveys include desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), and raccoon (*Procyon lotor*).

Sensitive wildlife species that are known to occur or potentially occur in the areas surveyed are listed in Table 4.4-2, Sensitive Wildlife Species Potentially Occurring in the Vicinity of the Proposed Project. Of these potentially occurring sensitive wildlife species, two are listed species: the blunt-nosed leopard lizard (*Gambelia sila*) and Swainson's hawk (*Buteo swainsoni*). During the focused surveys conducted in July 2009, the burrowing owl was observed along the Proposed Project subtransmission line segment and the Subtransmission Line Segment Alternative. The San Joaquin kit fox was not observed during the focused surveys.

Wildlife Movement

The Proposed Project occurs within a land use matrix of primarily agricultural areas, with sparse residential areas. Urban development is concentrated in the City of Hanford approximately 2 miles to the west of the Proposed Project. Due the abundance of active agriculture in the region, the area is not expected to serve as a potential wildlife corridor.

Jurisdictional Areas

The irrigation canals associated with the active agriculture operations in the region may be under the jurisdiction of the USACE and/or the CDFG.

4.4.4.1 No Impact

Construction and operation of the Proposed Project would not result in impacts for the following CEQA criteria:

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

The land that would be used for construction of the Proposed Project does not support any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS. As a result, there would be no impact to riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS from construction and operation of the Proposed Project.

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?

The Proposed Project is not located on federally protected wetlands as defined by Section 404 of the Clean Water Act. Therefore, construction and operation of the Proposed Project would affect federally protected wetlands. There would be no impact.

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?

Given the small size of the Proposed Project and the fact that it is adjacent to the existing effects of urban development (e.g., night lighting, noise, and general human activity), construction and operation of the Proposed Project is not expected to impact regional wildlife movement through the surrounding area. There would be no impact.

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Kings County does not presently have ordinances relating to tree protection. There would be no impact.

Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no known HCPs or NCCPs within the vicinity of the Proposed Project. There would be no impact.

4.4.4.2 Construction Impacts

Construction of the Proposed Project has the potential to result in impacts for the following CEQA criteria:

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

Sensitive Plant Species

Construction of the Proposed Project is not expected to disturb areas that have the potential to support any special status plant species due to the lack of suitable habitat and soils. As discussed in Section 3.9, Environmental Surveys, SCE would conduct sensitive plant surveys prior to construction. If special status plants are observed during the survey, and the area cannot be avoided during construction, SCE would consult with the appropriate agencies to develop mitigation for the species affected. Impacts are expected to be less than significant.

Sensitive Wildlife Species

The Proposed Project would be constructed on land that is considered suitable for foraging by the Swainson's hawk (State threatened), golden eagle (fully protected) and other raptors. Construction of the Proposed Project could potentially impact foraging opportunities for these species; however, these species do not have nesting habitat in the

vicinity of the construction areas, and there is a large amount of foraging availability in the surrounding region. As a result, impacts would be less than significant.

The burrowing owl (State species of special concern) was observed on the Proposed Project subtransmission line segment during the focused surveys that were conducted in July 2009. As discussed in Section 3.9, Environmental Surveys, a burrowing owl survey would be conducted within 30 days prior to construction of the subtransmission line segment to determine presence or absence of the species. If present, SCE would adhere to CDFG protocol. Impacts would be less than significant.

The San Joaquin kit fox was not observed during focused surveys conducted in July 2009. As discussed in Section 3.9, Environmental Surveys, SCE would conduct preconstruction surveys prior to the start of construction. If evidence of San Joaquin kit fox is present at the site, SCE would implement USFWS protocol to avoid impacts to this species. Impacts are expected to be less than significant.

In addition, there is limited potential for the western spadefoot and southwestern pond turtle to occur along the Proposed Project subtransmission line segment. As discussed in Section 3.9, Environmental Surveys, a preconstruction survey would occur 14 days prior to construction of the subtransmission line segment. If the species are found to be present, and adequate avoidance cannot be established, SCE would consult with the USFWS and the CDFG for further guidance.

Bird nesting season is typically February 1 through August 31. As discussed in Section 3.9, Environmental Surveys, nests near the construction work areas would be identified during the preconstruction Environmental Surveys and removed if outside the nesting season (nesting season typically occurs between February 1 and August 31). If work must occur in the vicinity of active nests during the nesting season, SCE would coordinate with the CDFG and USFWS and obtain approval prior to removing the nest. Potential impacts to nesting birds are expected to be less than significant.

Night lighting during construction of the Proposed Project may be required. This lighting could inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife adjacent to the substation facility. Of greatest concern is the impact on small ground dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. In addition, night lighting could inhibit wildlife from using the habitat adjacent to lighted areas. This impact is considered less than significant.

Temporary construction noise has the potential to disrupt foraging, nesting, roosting, and/or denning activities for wildlife species. Wildlife species stressed by noise may disperse from the habitat located near the construction area. This impact is considered less than significant.

4.4.4.3 Operation Impacts

Operation of the Proposed Project has the potential to result in impacts for the following CEQA criteria:

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

As described in Section 3.1.3, Subtransmission Line Segments Description, the subtransmission line segments would be designed to be consistent with the Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006, minimizing the possibility of avian electrocution. These design features include increased conductor spacing and suspending phase conductors. As a result, there is a reduced risk of avian electrocution from the subtransmission lines. Impacts would be less than significant.

4.4.5 Substation Site Alternative

The Substation Site Alternative has a similar setting to that of the Proposed Project substation site. All preconstruction surveys that would be conducted for the Proposed Project would also be need to be conducted for the Substation Site Alternative. Impacts for the Substation Site Alternative would be similar to those for the Proposed Project. Impacts would be less than significant.

4.4.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting to that of the Proposed Project subtransmission line segment. All preconstruction surveys that would be conducted for the Proposed Project would also be required for the Subtransmission Line Segment Alternative. Similar to the Proposed Project subtransmission line segment, burrowing owl were observed in the area of the Subtransmission Line Segment Alternative during the July 2009 surveys. In addition, the route for the Subtransmission Line Segment Alternative is located within an area that provides a limited amount of suitable habitat for the blunt-nosed leopard lizard (federal endangered, State endangered), and would require additional preconstruction surveys. If the blunt-nosed leopard lizard is present and cannot be avoided, consultation with the USFWS and CDFG would be required. As a result, the impacts for the Subtransmission Line Segment Alternative would be greater than those for the Proposed Project.

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4.5 Cultural Resources

This section describes the cultural resources in the area of the Proposed Project. Potential impacts to cultural resources (i.e., archeological and historical resources) are discussed first, followed by a discussion of paleontological resources. The alternatives are also discussed.

4.5.1 Environmental Setting

The San Joaquin Valley between the lower Kings River and the Tehachapi Mountains receives little rainfall, but is well-watered by rivers extending west from the Sierra Nevada. In pre-agricultural times, the valley landscape included an extensive network of interconnected lakes, rivers, streams, and sloughs that were charged by runoff from the Sierra Nevada snow pack. Prior to the late 19th century, northeastern Kings County would have been near to the shore of Tulare Lake, the largest body of fresh water in surface area west of the Great Lakes. Most of the area was dominated by wetlands and large growths of tules. The wetlands supported a huge number of aquatic fowl, including migratory ducks and geese, and abundant fish, turtles, and freshwater mussels. In drier spots, sage, greasewood, and bunchgrass flourished. Trees, such as cottonwoods, sycamores, and willows, lined river channels and sloughs, but were absent from the valley floor. Antelope, deer, and elk wintered on the plains. Other wildlife included jackrabbits, ground squirrels, and quail (Wallace, 1978).

Prehistory

The Central Valley prehistoric record is divided into three main periods, the Paleo Indian, the Archaic, and the Emergent. These periods represent human occupation related to changes in technology and cultural behavior over time, often in response to environmental changes.

Paleo-Indian Period (11,550 to 8,550 cal B.C.) Evidence of human occupation in the Central Valley during the Paleo-Indian period comes primarily from the San Joaquin Valley. Flutted projectile points dating between 11,550 and 9550 cal B.C. have been found in three San Joaquin Valley localities, Tracy Lake, the Woolfsen mound, and the Tulare Lake basin.

Lower Archaic (8,550 to 5,550 cal B.C.) Lower Archaic occupation of the Central Valley is mainly known from isolated finds located along the shorelines of ancient lakes. Stemmed projectile points, crescents, and other flaked stone artifacts are frequently recovered from Tulare Lake.

Middle Archaic (5550 to 550 cal B.C.) Middle Archaic sites are better known in the foothills, where sites are characterized by an abundance of ground stone implements for the processing of acorns and pine nuts (Rosenthal et al, 2007). During this period exploitation of river corridors in the Sacramento and San Joaquin Valleys increased. Archaeological evidence indicates a growing reliance on fishing, as evidenced by the presence of gorge hooks, composite bone hooks, and spears in the archaeological

assemblage. The faunal assemblage included tule elk, mule deer, pronghorn sheep, rabbits, and waterfowl suggesting a exploitation of freshwater marshes, riparian forests, and grasslands. The presence of obsidian, shell beads, and other exotic materials, also indicate that regional trade was widespread during the Middle Archaic (Rosenthal et al, 2007).

Upper Archaic (550 cal B.C. to cal A.D. 1,100) Little information is available for Upper Archaic traditions in the southern San Joaquin Valley. Two known Upper Archaic period deposits on Buena Vista Lake suggest year-round settlements as represented by house floors and significant food remains indicating resource exploitation of riverine, wetland, and terrestrial environments (Rosenthal et al, 2007). During this period, regional variations were more common than in previous periods and focused on resources which could be processed in bulk, such as acorns, salmon, shellfish, rabbits, and deer. Use of mortars and pestles for food processing was prevalent, except for the valley margins where handstones and millingslabs remained dominant. The shell bead trade and technological specialization increased during the Upper Archaic. (Rosenthal et al, 2007).

Emergent Period (cal A.D. 1100 to Historic times) During this period, the faunal assemblage of Central Valley sites is characterized by large quantities of fish, bird, and mammal bones. Processing of plant foods is evidenced by the presence of mortars and pestles in archaeological contexts. In the southern San Joaquin Valley, pottery was not manufactured but was obtained by trade with groups from the foothills. Cottonwood type projectile points are representative of this period and are commonly found in the Tulare and Buena Vista basins (Rosenthal et al, 2007). Many of the technologies and cultural traditions from previous periods disappeared throughout the Central Valley, and practices very similar to those observed by later European explorers appeared at this time. The bow and arrow replaced the dart and atlatl in hunting and manufacturing centers were decentralized. Raw materials, in the form of obsidian cobbles and shell bead blanks, were transported from their sources to areas where the finished product would be completed (Rosenthal et al, 2007).

Ethnographic Setting

At the time of contact, a large portion of the Central Valley was occupied by speakers of the California Penutian language family, known as the Yokuts. At the time of contact, the Southern Valley Yokut population concentrated around three lakes in the southern San Joaquin Valley: Tulare Lake, Buena Vista Lake, and Kern Lake (Arkush, 2008; Fagan, 2003). The indigenous group native to northeastern Kings County is known as the Tachi tribelet of the Southern Valley Yokuts. Yokuts tribelets tended to be organized in large village settlements or in groups of small, politically affiliated villages. Yokut groups from the southern valley maintained trade relationships with the Chumash, who lived to the southwest (Fagan, 2003).

Historic Period

Spanish explorers first encountered the Southern Valley Yokuts in 1772 when a small contingent of soldiers, led by Pedro Fages, passed through the Tejon Pass and into the

southern San Joaquin Valley. After a stop at a village on Buena Vista Lake (located between Bakersfield and Taft in Kern County), the party headed west toward San Luis Obispo. The area was visited again in 1776 by Francisco Garces. In 1806, Franciscans made an attempt to missionize the Southern Valley Yokuts and a few groups such as the Tachi and the Telamni, were absorbed into the mission system. However, the majority of Central Valley Native Americans could not be missionized at this time (Wallace, 1978).

The southern San Joaquin Valley became, instead, a place for runaway neophytes (Native Americans who converted to Christianity). These runaways introduced their own customs, as well as some learned from the Spanish, including a desire for horses. The Yokuts began to raid missions and ranchos and became known as the "Horsethief Indians" (Wallace, 1978). After Mexico won its independence from Spain, Mexican rancheros began to retaliate, trying to recover their lost livestock. Their efforts included punishing and enslaving the Yokut raiders. An epidemic in 1833 decimated the Southern Valley Yokuts, killing off roughly 75 percent of the population.

Other settlement into the Central Valley included American and British-Canadian fur trappers, who entered the valley as early as 1827, and John C. Fremont, who conducted scientific expeditions into the southern San Joaquin Valley in 1844 and 1845 (JRP Historical Consulting, 2009).

Yokuts contact with the Spanish, Mexican, and Euroamericans in the region is considered minimal until after 1850 when California became part of the United States and during the gold rush of the early 1850s. The remaining population of Yokuts gave up rights to their lands in exchange for goods in an 1851 treaty with the United States government. The influx of huge numbers of outsiders reduced remaining native populations while largely eradicating traditional cultural practices. The final few Southern Valley Yokuts people were sent to the Tejon or Fresno reservations (Wallace, 1978). These reservations failed to prosper and the people who remained on them were moved to Tule River reservation in 1859.

The history of the region is associated with the construction of the railroad and the water conveyance systems designed to carry water to the vast agricultural fields that developed in the region. The San Joaquin Valley Railroad was originally built in 1877 as part of the Southern Pacific Railway's Coalinga Branch line. In the same year, and following the laying of the tracks, the City of Hanford was founded and named after a railroad executive named James Madison Hanford (Brown and Richmond, 1940). The SJVR existing rails were installed and replaced at various times between 1908 and 1967. The San Joaquin Valley Railroad Company purchased all the facilities on the Coalinga branch line from the Southern Pacific and began the operation of the railroad in 1992. To date, the railroad line is still in use. The railroad mainline is 21.9 miles long and is associated with 22 features including wooden or steel bridges located over natural streams and man-made irrigation canals, concrete, steel, or wooden culverts. Twelve of these features were constructed between 1904 and 1955, however, the construction period of the remaining features is unknown (Tang and Ballester, 2001b). The SJVR is crossed in several segments by various water works that predate the construction of the railroad itself.

California is considered to be an arid region. Thus, the development of water systems has played an important role in the economic and urban development of the State. After the contact period and beginning with the establishment of the missions in 1769, Spanish missionaries and neophytes where the first non-indigenous people to built irrigation systems in the state. The construction of these system was meant to serve both the missions and the associated pueblos (JPR and Caltrans, 2000).

Although the earliest historic water systems were designed to support mining activities, the construction of these water works was later used for farming and ranching activities. The arid conditions of the San Joaquin Valley drove the first American-era farmers to create water systems specifically for irrigation. Short earthen ditches were built to divert water from streams running west out of the Sierra Nevada mountains. During the late 1850s and 1860s, the earliest ditches to be constructed were built in the vicinity of the City of Visalia between 1852 and 1853. During the 1860s, other ditches were built through the Kaweah River and the Kings River deltas. Before 1900, private companies constructed water works in several towns of the San Joaquin Valley. In 1876 the Modesto Water Company was created, and a water system was built for the City of Hanford in 1881. During the first part of the 20th century, irrigation systems in the San Joaquin Valley were acquired by irrigation districts originally created by local residents. These residents would develop an irrigation district and then buy the commercial canals that served it.

The Peoples Ditch Irrigation System was considered to be one of three major irrigation works distributing water from the Kings River to farming lands in Kings County, serving nearly 60,000 acres in the Hanford area (Tang and Ballester, 2001a). Construction of the Peoples Ditch began in 1872 by Daniel Spangler, who had settled six or seven miles north of the City of Hanford. The project was completed by the Peoples Ditch Company, a mutual water company organized by local farmers in 1873.

The Melga Canal was built in the early 1910s and was designed to distribute water from the Peoples Ditch. The Melga Canal is an earthen feature with partially rock-lined sides at various places. Another ditch associated with the Peoples Ditch system is the unlined earthen ditch known as the Settlers Ditch. The Settlers Ditch Company was founded in 1888 and was one of the six independent mutual water companies distributing water from the Peoples Ditch system (Tang and Ballester, 2001c).

The Lakeside Ditch company was created in 1873 and the ditch was finalized two years later. The Lakeside Ditch transported water from Cross Creek to the area south and east of the City of Hanford, serving a total of 19,750 acres (Tang and Ballester, 2001a).

Paleontological Resources

Paleontological resources include fossil specimens and their respective fossil sites. Fossils are the remains of ancient organisms that are preserved in sedimentary strata. Sediment in northeastern Kings County is associated with the Pleistocene-aged Modesto Formation, and is characterized by granitic sand and gravel deposits (Mathews and Burnett, 1965).

4.5.2 Regulatory Setting

The CPUC is tasked with compliance of all provisions in CEQA and the state CEQA Guidelines that concern cultural resources (CEQA Sections 21083.2, 21084.1, and Guidelines 15064.5) as explained below.

Cultural resources as defined in CEQA include prehistoric and historic era archaeological sites, districts, and objects; historic buildings, structures, objects and districts; and traditional/cultural sites or the locations of important historic events. CEQA Guidelines Section 15064.5 states that a project may have a significant environmental effect if it causes a substantial adverse change in the significance of a historic resource. Additionally, the Lead Agency must consider properties eligible for listing on the California Register of Historical Resources (CRHR) or that are defined as a unique archaeological resource in Public Resources Code Section 21083.2.

California Register of Historical Resources

Cultural resources include archaeological and historic objects, sites and districts, historic buildings and structures, and sites and resources of concern to local Native Americans and other ethnic groups. Cultural resources that meet the criteria of eligibility to the California Register of Historical Resources (CRHR) are termed "historic resources." Archaeological resources that do not meet CRHR criteria also may be evaluated as "unique;" impacts to such resources could be considered significant, as described below.

A site meets the criteria for inclusion on the CRHR if:

A. It is associated with events that have made a significant contribution to the broad patterns of California's History and Cultural Heritage

B. It is associated with the life or lives of a person or people important to California's past

C. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

D. It has yielded, or may be likely to yield, information important to prehistory or history

A resource eligible for the CRHR must meet one of the criteria of significance described above and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

The CRHR automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register
- California Registered Historical Landmarks from No. 770 onward
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5
- Individual historical resources
- Historical resources contributing to historic districts
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone

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

- Contains information needed to answer important scientific questions and there is a demonstrable public interest in that information
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person
- A non-unique resource is one that does not fit the above criteria

Paleontological Resources

Appendix G (part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, which states, "a project will normally result in a significant impact on the environment if it will …disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." Public Resources Code Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor.

4.5.3 Significance Criteria

The significance criteria for assessing impacts to cultural resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5
- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature
- Disturb any human remains, including those interred outside of formal cemeteries

4.5.4 Impact Analysis

This cultural resource impact analysis is adapted and expanded from two cultural resources technical studies "Cultural Resource Assessment for the Proposed Southern California Edison Company Mascot Substation Project near the City of Hanford Kings County, California" (Parr, 2009a), and "Addendum to Cultural Resource Assessment for the Proposed Southern California Edison Company Mascot Substation Project near the City of Hanford Kings County, California (Parr, 2009b). The analysis includes the results of records searches, archival research, and pedestrian survey.

This paleontological resource impact analysis is adapted from the results of the paleontological study "Paleontologic Resource Inventory, Impact Assessment, and Recommended Mitigation Measures in Support of SCE Mascot Substation, Kings County, California" (Lander, 2008).

Cultural Resources Record Search

A cultural resources records search was conducted at the Southern San Joaquin Valley Information Center, located at California State University, Bakersfield. The purpose of the records search was to determine the extent of previous cultural resources investigations within a 1-mile radius of the Proposed Project and alternatives, and to determine whether any prehistoric or historic archaeological sites or isolated findings or architectural resources have been previously identified within the area. Materials reviewed as part of the records search included archaeological site records and listings of resources on the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), California Points of Historical Interest, California Historical Landmarks, and the California Historic Resources Inventory.

The records search shows that 11 surveys have been previously conducted within one mile of the Proposed Project and alternatives. As a result of these surveys, 12 cultural resources have been previously recorded within 1 mile of the Proposed Project area and

alternatives. These consist of eight historic residences, and four linear historic features: the tracks of the San Joaquin Valley Railroad, and the Melga Canal, Settlers Ditch, and Lakeside Ditch.

No prehistoric cultural resources have been recorded within 1 mile of the Proposed Project or alternatives.

Paleontological Resources Records Search

Information regarding paleontological resources was conducted at the University of California Museum of Paleontology and the Natural History Museum of Los Angeles County. The purpose of the records search was to identify previous paleontological resources investigations within the vicinity of the Proposed Project and alternatives. Materials reviewed as part of the records search also included the surficial geologic mapping of the study area by Matthews and Burnett (1965), and several publications including Jefferson (1991), Jennings and Strand (1958), Lander and Harlan (2006), Rogers (1966), and Smith (1964).

No previously recorded fossil site is reported as occurring in the Modesto Formation within the vicinity of the Proposed Project or its immediate vicinity. However, elsewhere in the San Joaquin Valley, the Modesto Formation has yielded fossilized bones and teeth representing extinct Rancholabrean (late Pleistocene) species of land mammals, including Jefferson's giant ground sloth, Columbian mammoth, western camel, and longhorn bison (Jefferson, 1991, Lander and Harlan, 2006).

Numerous additional fossil sites in the San Joaquin Valley occur in areas underlain by alluvial fan deposits, as mapped by Jennings and Strand (1958), Smith (1964), Matthews and Burnett (1965), and Rogers (1966). The alluvial fan deposits within the Modesto Formation have also produced the remains of Harlan's ground sloth, pocket gopher, horse, deer, and antique bison, and the remains of a bird (Jefferson 1991, Lander and Harlan, 2006). Two of the fossil sites occurred at depths only 3 to 4 feet below the previous ground surface (Lander and Harlan, 2006). The fossil remains, particularly those of bison, from the alluvial fan deposits are scientifically important because they have allowed the documentation of the late Pleistocene (Rancholabrean) age for the older portion of these deposits at depths as shallow as 3 to 4 feet below the present ground surface, and the paleoenvironmental reconstruction of the San Joaquin Valley during this time interval.

Native American Consultation

On May 7, 2008, SCE conducted a Sacred Lands File (SLF) records search of the Proposed Project through the Native American Heritage Commission (NAHC). The NAHC SLF records search results did not indicate the presence of any known Native American cultural resources within the project site or vicinity, and included a list of Native American organizations and individuals who may have an interest in the project area. Letters were sent via certified mail on June 30, 2009 to five Native American

individuals and organizations identified by the NAHC as being affiliated with the vicinity of the project area. These documents can be found in Appendix H, Agency Consultations.

Pedestrian Surveys

Field surveys were conducted between July 6th and 9th, and on September 10, 2009. The field surveys included the Proposed Project, Substation Site Alternative, and the Subtransmission Line Segment Alternative, as well as a 50 foot buffer area around each one of these areas. The Proposed Project substation site and the Substation Site Alternative were surveyed utilizing transects spaced no more than 6 meters (20 feet) apart. Both sites were planted in alfalfa which, at the time of the survey, stood knee high. However, the plants were thin and spaced widely enough that ground visibility was fair.

The Proposed Project subtransmission line segment and the Subtransmission Line Segment Alternative follow existing roads. The survey corridor for the Proposed Project Subtransmission Line was 60 meters (200 feet) wide along the west side of the road. The survey corridor for the Subtransmission Line Segment Alternative was 30 meters (100 feet) on each side of the road.

Most of the areas surveyed were planted in crops (corn, alfalfa, cotton, and orchards). Typically, the crops were thin enough so that survey was possible and ground visibility was reasonably good. In certain segments of the survey corridor, however, the crops were so thick as to be impenetrable. This often was the case in areas containing mature corn or cotton.

Pedestrian Survey Results

No prehistoric or historic archaeological resources (including sites or isolated finds), historic-period buildings, features, or structures were identified during the records search or the field survey of the Proposed Project substation site.

The Proposed Project subtransmission line segment crosses three previously identified historic features: the San Joaquin Valley Railroad (SJVR), the Settlers Ditch, and the Lakeside Ditch. A description of these resources is summarized in Table 4.5-1, Summary of Cultural Resources Crossed by the Proposed Project. No prehistoric or historic-period archaeological sites or isolated finds were identified in or adjacent to the subtransmission line segment during the field surveys.

Table 4.5-1 Summary of Cultural Resources Crossed by the Proposed Project

Cultural Resource	Approximate Location	Description
P16-000122 Segment of the San Joaquin Valley Railroad	The Proposed Project subtransmission line segment crosses the resource approximately 0.6 mile south of Grangeville Boulevard	The SJVR was built in 1877 and formerly was the Coalinga Branch of the Southern Pacific Railroad. The SJVR was modified several times between 1908 and 1967. Only segments of the SJVR and some of its associated features have been formerly recorded. The bridges and culverts associated with the railroad were constructed following standardized plans with no distinctive characteristics. The railroad features were found not to be associated with any important historic events or persons. In addition, it was determined that the railroad itself is a component of modern transportation infrastructure and therefore lacks unique historic character. Thus, it was determined that the site does not meet the criteria for listing in the National Register of Historic Places.
P16-000127 Settlers Ditch	The Proposed Project subtransmission line segment crosses the resource approximately 0.25 mile south of Lacey Boulevard	This earthen ditch was built in 1888 and was first recorded in 1998. The Settlers Ditch varies between 10 and 12 feet in width and has not been formally recorded in its entire length. This resource is potentially eligible for listing in the National Register of Historic Places as a contributing element of a potentially significant historic linear feature, the Peoples Ditch Irrigation System. The Settlers Ditch has been maintained throughout the years and currently remains in use.
P16-000086 Lakeside Ditch	The Proposed Project subtransmission line segment crosses the resource approximately 0.5 mile south of Lacey Boulevard. The portion of the ditch crossed by the Proposed Project appears to be underground or rerouted.	This earthen ditch was built in 1873. The Lakeside Ditch varies in width between 10 and 12 feet and has not been formally recorded in its entire length, and has not been evaluated for listing in the National Register of Historic Places or the California Register of Historical Resources.

Sources: Tang and Ballester, 2001abd; Pavlik, 1998; Parr, 2009a

4.5.4.1 Construction Impacts

Would the project cause a substantial adverse change in the significance of an historical resource pursuant to Section 15065.5?

The Proposed Project subtransmission line segment crosses three linear, historic features: the SJVR, the Settlers Ditch and the Lakeside Ditch. These resources have not been formally evaluated for inclusion in the National Register of Historic Places or the California Register of Historical Resources. The subtransmission line segment would span these resources and would not result in an adverse change to their significance. Impacts would be less than significant.

Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?

There were no prehistoric or historic archeological resources identified for the Proposed Project or within the vicinity of the Proposed Project. As a result, construction of the Proposed Project would not cause a substantial adverse change to any known archaeological resources. However, visibility was lacking in some areas surveyed. As discussed in Section 3.9, Environmental Surveys, SCE would conduct cultural resource surveys in these areas prior to ground disturbing activities. Any archaeological resources subject to potential adverse effects would be evaluated for their eligibility for listing in the California Register of Historical Resources or as a unique archaeological resource. Any archaeological resource discoveries would be fully documented using California Department of Parks and Recreation Form 523 and supplements. In addition, as described in Section 3.10, Worker Environmental Awareness Training, SCE would include instructions that would guide construction crews on the procedures to follow if cultural resources were uncovered during construction. As a result, impacts to archeological resources are expected to be less than significant.

Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The Proposed Project substation site is underlain by the Modesto Formation which is known to be paleontologically sensitive has a high potential to contain significant paleontological resources. As a result, SCE is proposing to implement the following Applicant Proposed Measures:

> **APM-PAL-01.** Develop and Implement a Paleontological Monitoring Plan. A project paleontologist meeting the qualifications established by the Society of Vertebrate Paleontologists shall be retained by SCE to develop and implement a Paleontological Monitoring Plan prior to the start of ground disturbing activities for the Proposed Project. As part of the Paleontological Monitoring Plan, the project paleontologist shall establish a curation agreement with an accredited facility prior to the initiation of ground-disturbing activities. The Paleontological Monitoring Plan shall also include a final monitoring report. If fossils are identified, the final

monitoring report shall contain an appropriate description of the fossils, treatment, and curation.

APM-PAL-02. Paleontological Monitoring at the Proposed Project Substation Site. A paleontological monitor shall be on site to observe ground-disturbing activities at depths greater than 3 feet at the Proposed Project substation site. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

APM-PAL-03. Paleontological Monitoring for Installation of Subtransmission Structures. A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the 66 kV subtransmission structures. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

APM-PAL-04. Paleontological Monitoring for Installation of Telecommunications Duct Banks. A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the telecommunications duct banks. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

With the implementation of **APM-PAL-01**, **APM-PAL-02**, **APM-PAL-03**, **and APM-PAL-04**, impacts to paleontological resources due to construction of the Proposed Project are expected to be less than significant.

Would the project disturb any human remains, including those interred outside of formal cemeteries?

Human remains are not known to occur in the vicinity of the Proposed Project, but such remains could occur in Native American archaeological contexts. CEQA Guidelines at 15064.5(d) and (e) make provision for the discovery and disposition of human remains and reference other applicable state law:

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the

appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

(1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

(2) The requirements of CEQA and the Coastal Act.

(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

In the event that human remains are encountered during construction and cannot be avoided, the remains would be removed in accordance with CEQA Guidelines 15064.5(d) and (e), which are quoted above.

Impacts are expected to be less than significant.

4.5.4.2 Operation Impacts

Operation of the Proposed Project consists of routine inspection and maintenance of the substation and subtransmission line segments. These activities would not affect any known archaeological or historical resources, and impacts would be less than significant.

4.5.5 Applicant Proposed Measures

As previously identified, SCE would implement the following Applicant Proposed Measures, listed in Table 4.5-2, Cultural Resource Applicant Proposed Measures.

Table 4.5-2 Cultural Resource Applicant Proposed Measures

Applicant Proposed Measure	Description
APM-PAL-01 Develop and Implement a Paleontological Monitoring Plan	A project paleontologist meeting the qualifications established by the Society of Vertebrate Paleontologists shall be retained by SCE to develop and implement a Paleontological Monitoring Plan prior to the start of ground disturbing activities for the Proposed Project. As part of the Paleontological Monitoring Plan, the project paleontologist shall establish a curation agreement with an accredited facility prior to the initiation of ground-disturbing activities. The Paleontological Monitoring Plan shall also include a final monitoring report. If fossils are identified, the final monitoring report shall contain an appropriate description of the fossils, treatment, and curation.
APM-PAL-02 Paleontological Monitoring at the Proposed Project Substation Site	A paleontological monitor shall be on site to observe ground-disturbing activities at depths greater than 3 feet at the Proposed Project substation site. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

APM-PAL-03 Paleontological Monitoring for Installation of Subtransmission Structures	A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the 66 kV subtransmission structures. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.
APM-PAL-04 Paleontological Monitoring for Installation of Telecommunications Duct Banks	A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 3 feet during installation of the telecommunications duct banks. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

4.5.6 Substation Site Alternative

No prehistoric or historic archaeological resources (including sites or isolated finds), historic-period buildings, features, or structures were identified during the field survey of the Substation Site Alternative. The impacts to cultural resources associated with the Substation Site Alternative would be similar to those of the Proposed Project. Impacts would be less than significant.

Similar to the Proposed Project substation site, the Substation Site Alternative is also underlain by the Modesto Formation. The Applicant Proposed Measures implemented for the Proposed Project would also be implemented for the Substation Site Alternative. Impacts would be similar to those of the Proposed Project substation site. With the implementation of APMs, impacts would be less than significant.

4.5.7 Subtransmission Line Segment Alternative

No prehistoric or historic archaeological resources (including sites or isolated finds) were identified in or adjacent to the Subtransmission Line Segment Alternative during the field survey. The three historic resources crossed by the Proposed Project subtransmission line segment would also be crossed by the Subtransmission Line Segment Alternative, although in different places. The Subtransmission Line Segment Alternative would additionally cross the Melga Canal in two places. The impacts to cultural resources associated with the Subtransmission Line Segment Alternative would be similar to those of the Proposed Project. Impacts would be less than significant.

Similar to the Proposed Project, the Subtransmission Line Alternative is also underlain by the Modesto Formation. The Applicant Proposed Measures implemented for the Proposed Project would also be implemented for the Substation Site Alternative. Impacts

would be similar to those of the Proposed Project substation site. With the implementation of APMs, impacts would be less than significant.

4.5.8 References

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4.6 Geology and Soils

This section describes the geology and soils in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.6.1 Environmental Setting

Kings County is located in Southern San Joaquin Valley that is bounded by the Coast Ranges to the west, and the Sierra Nevada mountains to the east. The surface of the San Joaquin Valley is underlain by Pleistocene and more recent alluvium comprised of sediments originating from the igneous and metamorphic rock of the Sierra Nevada Mountains located to the east of Kings County. During the past 200 million years, the Central Valley has accumulated over 20,000 feet of sedimentary material originating primarily from the Sierra Nevada mountains, and carried to the valley by drainages carrying vast amounts of water. The upper and most recently deposited material consists of alluvial deposits that are approximately 200 feet thick (Harden, 2004).

There are no State of California Alquist-Priolo Fault Zones in Kings County (CGS, 2009). The nearest Alquist-Priolo Earthquake Hazard Zone is the San Andreas Fault, approximately 50 miles to the southwest of the Proposed Project. The California Geological Survey has not developed a landslide hazard identification map for Kings County, or a liquefaction hazard/susceptibility map for Kings County (CGS, 2009). The danger of secondary natural hazards in Kings County such as liquefaction, settlement, landslides, and seiches, which result from the interaction of groundshaking with existing ground instabilities, is considered to be minimal. Tsunamis are not considered a threat since the Pacific Ocean lies on the opposite side of the Coast Ranges and at a considerable distance from Kings County (Kings County, 1993).

Land subsidence in the San Joaquin Valley due to groundwater withdrawal was at its greatest during the 1950s and 1960s, and has been slowing since the late 1960s (and in some areas, stopped) as a result of greater use of surface water for crop irrigation. Northeastern Kings County is not considered an area of major subsidence (USGS, 1999).

Much of the irrigated land in the San Joaquin Valley is affected by salt, although the amount and type of salts varies depending on the type of soil and the amount of irrigation water used (Kings County, 1993).

4.6.2 Regulatory Setting

Clean Water Act. This law was enacted to restore and maintain the chemical, physical, and biological integrity of the nation's waters by regulating point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. This includes the creation of a system that requires states to establish discharge standards specific to water bodies (National Pollution Discharge Elimination System (NPDES)), which regulates storm water discharge from construction sites through the implementation of a Storm Water Pollution Prevention Plan.

California Porter-Cologne Water Quality Act. This California state law provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the State Water Resources Control Board (SWRCB) as the ultimate authority over State water rights and water quality policy, and also established nine Regional Water Quality Control Boards (RWQCB) to oversee water quality on a day-to-day basis at the local/regional level. The RWQCBs have the responsibility of granting NPDES permits for storm water runoff from construction sites.

4.6.3 Significance Criteria

The significance criteria for assessing the impacts to geology and soils come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.) strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides

- Result in substantial soil erosion or the loss of topsoil

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse

- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property

- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

4.6.4 Impact Analysis

The Proposed Project would lie upon soil types as listed in Table 4.6, Soil Types Underlying the Proposed Project, and are shown on Figure 4.6, Soils Map.

Table 4.6 Soil Types Underlying the Proposed Project

Location	Soil Type	Erosion Class	Drainage Class	Liquid Limit
Proposed Project Substation Site	Kimberlina fine sandy loam, saline-alkali	Slight	Well drained	Low
Proposed Project Subtransmission Segment	Kimberlina fine sandy loam, saline-alkali	Slight	Well drained	Low
	Garces Loam	Slight	Well drained	Low

Source: USDA, 2009

4.6.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criteria:

Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides?

There are no known active faults in the immediate vicinity of the Proposed Project. The Proposed Project would be located in an area of minimal seismicity and would only be susceptible to minor groundshaking in the event of a significant earthquake on any of the regional active faults. Due to the deep depth of groundwater (please see Section 4.8, Hydrology and Water Quality) and the minor groundshaking that would occur in the event of an earthquake on any of the regional active faults, the sediments beneath the Proposed Project are not expected to be liquefiable. Due to the relatively level topography upon which the Proposed Project would be built, no impact is expected from landslides. There would be no impact.

Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The soil series consists of well-drained relatively flat lying soils and are not subject to off-site landslide, liquefaction, subsidence, lateral spreading, or collapse. Construction of the Proposed Project would include minor grading, which would not result in slope or other geologic instability. There would be no impact.

Figure 4.6 Soils Map

Figure 4.6 Soils Map

Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

The soils beneath the Proposed Project are well-drained and do not have a high liquid limit, and therefore, are not expected to be expansive. There would be no impact.

Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The soils in the vicinity of the Proposed Project are capable of supporting septic systems, and do so for the nearby properties. There would be no impact.

4.6.4.2 Construction Impacts

Construction of the Proposed Project has the potential to result in impacts for the following CEQA criterion:

Would the project result in substantial soil erosion or the loss of topsoil?

During construction, erosion control measures would be implemented, utilizing best management practices, to avoid or minimize soil erosion and off-site deposition. Because soil surface disturbance for the Proposed Project would be greater than one acre, specific erosion control measures would be identified as part of the NPDES permit and Storm Water Pollution Prevention Plan (SWPPP) required for construction. As a result, impacts due to soil erosion and loss of topsoil during construction of the Proposed Project would be less than significant.

4.6.4.3 Operation Impacts

Operation of the Proposed Project has the potential to result in impacts for the following CEQA criterion:

Would the project result in substantial soil erosion or the loss of topsoil?

During operation of the Proposed Project, soil erosion and loss of topsoil would be minimized by the gravel base at the substation site, and storm water drainage controls would be consistent with the grading permit SCE obtains from Kings County, minimizing erosion and the loss of topsoil. Therefore, impacts due to soil erosion and loss of topsoil as a result of operation of the Proposed Project would be less than significant.

4.6.5 Substation Site Alternative

The Substation Site Alternative is located across the street from the Proposed Project substation site, and is also situated upon relatively level ground. Impacts associated with the Substation Site Alternative would be similar to those of the Proposed Project. Impacts would be less than significant.

4.6.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative is located within the same geologic region as that of the Proposed Project. Impacts associated with the Subtransmission Line Segment Alternative would be similar to those of the Proposed Project. Impacts would be less than significant.

4.6.7 References

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4.7 Hazards and Hazardous Materials

This section describes the hazards and hazardous materials in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.7.1 Environmental Setting

This section provides background information and baseline conditions for the hazards and hazardous materials environmental analysis under CEQA.

Hazardous Waste

SCE conducted a preliminary Phase I Environmental Site Assessment, dated April 20, 2009, for the Proposed Project substation site (please see Appendix E, Phase I Environmental Site Assessment, for more information). The results of this site assessment indicate that there is a very low potential to encounter soil or groundwater contamination at the site.

Emergency Response

American Ambulance and SkyLife Helicopter provide transport service to local emergency facilities in Kings County. Additionally, the Kings County Fire Department has trained staff to perform basic EMT services. The Kings County Sheriff's Office provides law enforcement response to unincorporated areas of the County. Emergency evacuation routes include Highway 198, Highway 43, Grangeville Boulevard, Houston Avenue, and 6th Avenue (Kings County, 2009).

Wildland Fires

The prevalence of wildland, or nonurban, fires is primarily based on topography, weather conditions, and the existence of sufficient fuel. Since most of Kings County is essentially flat, sloping slightly towards a topographic low point in the Tulare Lake Basin, fire hazard in much of the county is classified as moderate (Kings County, 2003). Past wildfires have occurred in the Coastal Ranges.

Airports and Airstrips

Two airports located within Kings County have been identified for public use, the Hanford Municipal Airport and the Corcoran Airport. The nearest airport, Hanford Municipal airport, is located approximately 1.5 miles from the Proposed Project. The nearest identified airstrip is approximately 4 miles from the Proposed Project.

Schools

Northeastern Kings County has two school districts: the Hanford Joint Union School District and the Hanford Elementary School District. There are no schools within one-quarter mile of the Proposed Project; the nearest school is Kit Carson Elementary School, at 9895 7th Avenue, approximately 0.5 miles from the Proposed Project.

4.7.2 Regulatory Setting

Federal Hazardous Materials Regulations (49 USC 1501 et.seq.). These sections identify the required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations applicable to the shipment and transportation of hazardous materials.

Clean Water Act. This law was enacted to restore and maintain the chemical, physical, and biological integrity of the nation's waters by regulating point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. This includes the creation of a system that requires states to establish discharge standards specific to water bodies (NPDES), which regulates storm water discharge from construction sites through the implementation of a Storm Water Pollution Prevention Plan.

California Porter-Cologne Water Quality Act. This California state law provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the State Water Resources Control Board (SWRCB) as the ultimate authority over State water rights and water quality policy, and also established nine Regional Water Quality Control Boards (RWQCB) to oversee water quality on a day-to-day basis at the local/regional level. The RWQCBs have the responsibility of granting NPDES permits for storm water runoff from construction sites.

CPUC G.O. 95 and CPUC G.O. 165. These General Orders by the CPUC specify construction, operation, and maintenance requirements for electrical facilities.

4.7.3 Significance Criteria

The significance criteria for assessing the impacts to hazards and hazardous materials come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;

- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.7.4 Impact Analysis

4.7.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criterion:

Would the project be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The Proposed Project would not be located on a known hazardous waste site. As a result, there would be no impact to the public or the environment from being located on a site included on a list of hazardous materials sites. In the event that contaminated soil is encountered during excavation activities, the soil would be segregated, sampled, and tested to determine appropriate disposal/treatment options. If the soil is classified as hazardous (using federal or State standards, whichever is more stringent), the soil would be properly profiled, manifested and transported to a Class I Landfill or other appropriate soil treatment or recycling facility. There would be no impact.

Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The Proposed Project would not be located within one-quarter mile of an existing or proposed school. There would be no impact.

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

A portion of the Proposed Project subtransmission line segment would be located within 2 miles of the Hanford Municipal Airport, but it is outside the Kings County Airport Land Use Compatibility Plan area. There would be no impact.

For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Because the nearest identified airstrip is approximately 4 miles away, construction and operation of the Proposed Project would not expose persons working in the project area to excessive noise levels due to the proximity of an airstrip. There would be no impact.

4.7.4.2 Construction Impacts

Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Hazardous materials to be used during the construction of the Proposed Project include fuels, oil, and lubricants. These materials are common at construction sites, and have a relatively low toxicity. Best Management Practices as identified in the Storm Water Pollution Prevention Plan (SWPPP) prepared for the project would be implemented during construction to reduce the potential for or exposure to accidental spills involving the use of hazardous materials (see Section 3.2.1.1, Storm Water Pollution Prevention Plan, for more detail). Impacts would be less than significant.

Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Due to the low volume and low toxicity of the hazardous materials to be used during the construction of the Proposed Project, the potential for environmental impacts from hazardous material incidents is less than significant. The most likely incidents involving these hazardous materials are associated with minor spills or drips. Impacts from such incidents would be avoided by thoroughly cleaning up minor spills as soon as they occur. A site-specific Construction Storm Water Pollution Prevention Plan (see Section 3.2.1.1, Storm Water Pollution Prevention Plan, for more detail) would be followed to ensure quick response to minor spills and minimal impacts to the environment. Impacts would be less than significant.

Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

In places where the components of the Proposed Project span a road or require a lane closure (i.e., new subtransmission line segment or telecommunications) construction activities would be coordinated with the local jurisdiction so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back while pulling conductor across a roadway, but emergency vehicles would be provided access even in the event of temporary road closures. Therefore, emergency access would not be directly impacted by construction of the project because all streets would remain open to emergency vehicles at all times during construction activities. As a result, construction of the Proposed Project would not physically interfere with or impair the implementation of

adopted emergency response and evacuation plans. Impacts would be less than significant.

Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Fire risks during construction would be low because construction areas for the Proposed Project would be in areas irrigated for agriculture and grubbed of vegetation prior to the staging of equipment, minimizing the potential for a construction vehicle to start a fire. As a result, construction of the Proposed Project would have a less than significant impact to risk of loss, injury or death involving wildland fires.

4.7.4.3 Operation Impacts

Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Operation of the Proposed Project would consist of routine maintenance and emergency repairs. These activities are unlikely to pose a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The Proposed Project would include transformer banks that contain mineral oil that could leak or spill if the transformers were damaged by an unforeseen incident. To minimize potential impacts, the design of the substation would provide containment and/or diversionary structures or equipment to prevent discharge of an oil spill as described in the Spill Prevention Control and Countermeasure (SPCC) Plan that would be prepared for the Proposed Project during final design (please see Section 3.1.1.10, Substation Drainage, for more information on SPCC requirements). An SPCC Plan would be prepared and implemented by SCE before any oil-containing equipment is brought to the substation site. Impacts would be less than significant.

Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Operation of the Proposed Project would not affect emergency plans or evacuation routes because the subtransmission line segment would span all potential emergency response and evacuation routes. Electrical facilities are typically considered critical facilities in emergency response plans, and every effort would be made by SCE to maintain electrical service during emergencies. Impacts to emergency plans as a result of operation of the Proposed Project would be less than significant.

Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The subtransmission line segment may pose a fire hazard if vegetation or other obstructions come in contact with energized electrical equipment. These facilities would be constructed and maintained in a manner consistent with CPUC G.O. 95 and CPUC G.O. 165. Consistent with these and other applicable State and federal laws, brush around the area of the equipment would be cleared, minimizing the potential for fire. Impacts would be less than significant.

4.7.5 Substation Site Alternative

The construction and operation of a substation at the Substation Site Alternative would be similar to that of the Proposed Project. The impacts with respect to hazards and hazardous materials would be similar to those for the Proposed Project. Impacts would be less than significant.

4.7.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative would be constructed and maintained in a manner similar to that of the Proposed Project. The impacts with respect to hazards and hazardous materials would be similar to those for the Proposed Project. Impacts would be less than significant.

4.7.7 References

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

4.8 Hydrology and Water Quality

This section describes the hydrology and water quality in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.8.1 Environmental Setting

Tulare Lake once served as the natural drainage of the Kings River, Cross Creek, and Tule River as part of the hydrologic watersheds of the Sierra Nevada mountains along the east side of the San Joaquin Valley. In modern times, canal and flood control development has redirected water flow and managed waterways through a series of canals, water storage, and agricultural levies. The primary cause of flooding in Kings County is the drainage pattern toward the Tulare Lake basin. This area has no outlet to the ocean unless water is pumped by artificial means out of the basin. Flood events typically occur every five years (Kings County, 2009a). Surface water in the region is shown on Figure 4.8, Hydrology and Floodplain Boundaries. Average annual precipitation in the City of Hanford typically ranges between 6 and 9 inches (Kings County, 2009b).

Northeastern Kings County is located within the Tulare Lake subbasin of the San Joaquin Valley groundwater basin. Groundwater flow is generally to the southwest, toward the former Tulare lakebed. Groundwater in northeastern Kings County is at approximately 100 to 120 feet below ground surface (DWR, 2008).

A major portion of Kings County has been identified by the California Department of Water Resources as having a critical groundwater overdraft condition. Approximately 32 percent of water used annually in Kings County for all purposes is obtained from groundwater. Groundwater is replenished from the natural precipitation, stream and creek flows, imported water, and underground flows which vary annually depending on hydrologic conditions (Kings County, 2009a). On average, the Tulare Lake subbasin water level has declined nearly 17 feet from 1970 through 2000 (DWR, 2006).

Most of eastern Kings County has been identified as an dam inundation area for Pine Flat Dam (Kings River) and the Terminus Dam (Kaweah River) (Kings County, 2009a).

4.8.2 Regulatory Setting

Clean Water Act. This law was enacted to restore and maintain the chemical, physical, and biological integrity of the nation's waters by regulating point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. This includes the creation of a system that requires states to establish discharge standards specific to water bodies (NPDES), which regulates storm water discharge from construction sites through the implementation of a Storm Water Pollution Prevention Plan.

California Porter-Cologne Water Quality Act. This California state law provides a comprehensive water quality management system for the protection of California waters.

Porter-Cologne designated the State Water Resources Control Board (SWRCB) as the ultimate authority over State water rights and water quality policy, and also established nine Regional Water Quality Control Boards (RWQCB) to oversee water quality on a day-to-day basis at the local/regional level. The RWQCBs have the responsibility of granting NPDES permits for storm water runoff from construction sites.

4.8.3 Significance Criteria

The significance criteria for assessing the impacts to hydrology and water quality come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
- Create or contribute to runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff
- Otherwise substantially degrade water quality
- Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow

Figure 4.8 Hydrology and Floodplain Boundaries

Figure 4.8 Hydrology and Floodplain Boundaries

4.8.4 Impact Analysis

4.8.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criteria:

Would the project create or contribute to runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

There are no storm water drainage systems in the vicinity of the Proposed Project. The surface improvements for the Proposed Project substation footprint would include impermeable surfaces that would incrementally increase the amount of storm water runoff at the site, but the site would be graded to direct storm water to an on-site or off-site storm water system as identified in the grading permit issued by Kings County. There would be no impact.

Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Because the Proposed Project does not involve housing, there would be no impacts associated with placing housing within a 100-year floodplain.

Would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

No large water bodies are located close to the Proposed Project and seiche or tsunami would not affect the area. In addition, the Proposed Project would be located on relatively flat ground and, therefore slope stability concerns, such as the potential for mudflow, are not considered a potential hazard. There would be no impact.

4.8.4.2 Construction Impacts

Would the project violate any water quality standards or waste discharge requirements?

Construction of the Proposed Project would not discharge effluent from the construction sites without a NPDES general permit for storm water discharge obtained from the Central Valley Regional Water Quality Control Board (please see Section 3.2.1.1, Storm Water Pollution Prevention Plan, for more information). Any sanitary waste produced during construction (e.g., from portable toilets) would be disposed of according to all applicable laws, rules, and regulations. As a result, construction of the Proposed Project would not violate any water quality standards or waste discharge requirements. Impacts would be less than significant.

Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level?

Construction of the Proposed Project may indirectly use groundwater for dust suppression, but the construction activities would not utilize groundwater in quantities that would result in a net deficit or lowering of the groundwater table. Impacts would be less than significant.

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The Proposed Project substation site would not be located within a drainage course and would not require the alteration of existing drainages. The grading for the substation footprint would change the natural flow of runoff in the area, but storm water runoff, and surface erosion and siltation would be controlled during construction by the implementation of storm water BMPs as specified in the SWPPP prepared for the Proposed Project (see Section 3.2.1.1, Storm Water Pollution Prevention Plan, for more detail on the SWPPP). As a result, construction of the Proposed Project would not substantially alter the existing drainage pattern of the site or area or produce a substantial increase in the rate or amount of surface runoff in a manner which would result in substantial erosion or siltation on- or off-site. Impacts would be less than significant.

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As discussed above, the Proposed Project would not be located within a drainage course and would not require the alteration of existing drainages. The grading plan and SWPPP protections implemented during construction of the Proposed Project would also include measures to reduce the potential for flooding. Impacts would be less than significant.

Would the project otherwise substantially degrade water quality?

Impacts to water quality associated with flooding, erosion, siltation, and discharge of pollutants, there are no other activities associated with construction of the Proposed Project that have the potential to substantially degrade water quality. Use of hazardous materials during construction of the Proposed Project is discussed in Section 4.7, Hazards and Hazardous Materials. Impacts would be less than significant.

Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

As shown on Figure 4.8, Hydrology and Water Quality, the Proposed Project would not occur within a 100-year floodplain. The Proposed Project would be located within the dam inundation area for the Pine Flat Dam and the Terminus Dam, but the potential for

dam failure is considered low. Due to the low potential for dam failure, impacts due to flooding as a result of the failure of a levee or dam would be less than significant.

4.8.4.3 Operation Impacts

Would the project violate any water quality standards or waste discharge requirements?

Operation of the Proposed Project would not discharge effluent except storm water. The quality of storm water runoff from the substation site would be controlled by SPCCs (please see Section 3.1.1.10, Substation Drainage, for more information) and the substation drainage plan would be included in the grading permit obtained from Kings County, and the plan would be consistent with all applicable laws, rules, and regulations pertaining to storm water discharge. Impacts would be less than significant.

Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level?

Operation of the Proposed Project may indirectly use groundwater (through a water agency) to maintain landscaping and a restroom facility, but this usage is not expected to deplete groundwater supplies. The impermeable surfaces associated with the Proposed Project would be minimal, and would not substantially interfere with groundwater recharge. As a result, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table. Impacts would be less than significant.

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The operation areas of the Proposed Project are small and would not alter existing drainages. The surface improvements for the substation footprint would change the natural flow of runoff in the area, but storm water at the site would be directed to an on-site or off-site storm water system as identified in the grading permit obtained from Kings County. As a result, the Proposed Project would not substantially alter the existing drainage pattern of the site or area or produce a substantial increase in the rate or amount of surface runoff in a manner which would result in siltation on- or off-site. Impacts would be less than significant.

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As discussed above, the Proposed Project would not be located within a drainage course and would not require the alteration of existing drainages. The grading plan developed to

obtain the grading permit from Kings County would account for flooding potential on- and off-site. Impacts would be less than significant.

Would the project otherwise substantially degrade water quality?

Operation of the Proposed Project would not provide substantial additional sources of polluted runoff, and is otherwise unlikely to substantially degrade water quality. Potential contaminants contained in storm water discharge are addressed in Section 4.7, Hazards and Hazardous Waste. Impacts would be less than significant.

Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

As discussed above in the Construction Impacts section, the Proposed Project is located within a dam inundation area for both Pine Flat and Terminus Dams. Due to the very low potential for dam failure, impacts due to flooding as a result of the failure of a levee or dam would be less than significant.

4.8.5 Substation Site Alternative

The Substation Site Alternative has a similar hydrology and water quality setting as that of the Proposed Project, and it is similar in scope. As a result, impacts to hydrology and water quality would be similar to those for the Proposed Project. Impacts would be less than significant.

4.8.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar hydrology and water quality setting as that of the Proposed Project, and it is similar in scope. As a result, impacts to hydrology and water quality would be similar to those for the Proposed Project. Impacts would be less than significant.

4.8.7 References

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

Kings County. 2009a. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

Kings County. 2009b. 2008 Annual Agricultural Crop Report for the County of Kings. Prepared by Department of Agriculture/Measurement Standards.

Department of Water Resources (DWR). 2008. Groundwater Level Data by Basin. [online] http://www.water.ca.gov/waterdatalibrary/groundwater/download/index.cfm [cited March 2009].

DWR. 2006. Groundwater Bulletin 118. [online]
http://www.water.ca.gov/pubs/groundwater/bulletin_118/
basindescriptions/5-22.12.pdf [cited June 2009].

4.9 Land Use and Planning

This section describes the land use and planning in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.9.1 Environmental Setting

The Proposed Project is located in unincorporated Kings County. In this area of Kings County, the land use is primarily agricultural, with some commercial and residential uses. Existing land use is shown on Figure 4.9-1, Existing Land Use.

Kings County has outlined their long-term development strategy through its General Plan. This document provides broad policies and objectives to be used to guide development within the County. Kings County has designated areas to be used in the future for specific uses, such Agriculture, Residential, Commercial, Mixed Use, Industrial, Open Space, and Public. The designated land uses are shown on Figure 4.9-2, Designated Land Use. The Kings County General Plan is in the process of being updated (Kings County, 2009). The planned land use in the vicinity of the Proposed Project is shown on Figure 4.9-2, Designated Land Use.

There are no known Habitat Conservation Plan (HCP) areas or Natural Community Conservation Plan (NCCP) areas in the vicinity of the Proposed Project.

4.9.2 Regulatory Setting

Habitat Conservation Plans. In 1983, the United States Congress adopted Section 10 of the federal Endangered Species Act as a way to promote "creative partnerships between the public and private sectors and among governmental agencies in the interest of species and habitat conservation." Section 10 authorizes states, local governments, and private landowners to apply for an Incidental Take Permit for otherwise lawful activities that may harm listed species or their habitats. To obtain a permit, an applicant must submit an HCP outlining what he or she will do to "minimize and mitigate" the impact of the permitted take on the listed species. The principle underlying the Section 10 exemption from the federal Endangered Species Act is that some individuals of a species or portions of their habitat may be expendable over the short term, as long as enough protection is provided to ensure the long term recovery of the species.

Natural Community Conservation Plans. An NCCP is part of a program administered by California Department of Fish and Game that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use.

Figure 4.9-1 Existing Land Use

Figure 4.9-1 Existing Land Use

Figure 4.9-2 Designated Land Use

Figure 4.9-2 Designated Land Use

4.9.3 Significance Criteria

The significance criteria for assessing the impacts to land use and planning come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Physically divide an established community
- Conflict with an applicable environmental plan, policy, or regulation of an agency with jurisdiction over the project (including, not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Conflict with any applicable habitat conservation plan or natural community conservation plan

California Public Utilities Commission G.O. 131-D, Section XIV.B. CPUC G.O. 131-D, Section XIV.B states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project.

4.9.4 Impact Analysis

4.9.4.1 No Impact

Construction and operation of the Proposed Project would not result in impacts for the following CEQA criteria:

Would the project physically divide an established community?

The Proposed Project would be located on agricultural land in Kings County, and most residences within the area are located on portions of larger agricultural parcels. Because the Proposed Project would not physically divide an established community, there would be no impact.

Would the project conflict with an applicable environmental plan, policy, or regulation of an agency with jurisdiction over the project (including, not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The Proposed Project would be located on land designated for agricultural use (please see Section 4.2, Agricultural Resources, for more information). The agricultural designations permit the use of the land for public utility and public service structures including electric transmission and distribution substations. Because the Proposed Project would not require a change in an existing land use designation, construction and operation of the Proposed Project would not conflict with any applicable land use plan, policy, or regulation. There would be no impact.

Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

There are no known Habitat Conservation Plan (HCP) areas or Natural Community Conservation Plan (NCCP) areas in the vicinity of the Proposed Project. There would be no impact to these plans.

4.9.4.2 Construction Impacts

There are no impacts to land use and planning resulting from construction of the Proposed Project.

4.9.4.3 Operation Impacts

There are no impacts to land use and planning resulting from operation of the Proposed Project.

4.9.5 Substation Site Alternative

The Substation Site Alternative is located on agricultural land, presently used to grow alfalfa. The Substation Site Alternative has a similar setting as the Proposed Project substation site, and is similar in scope. As a result, like the Proposed Project, the Substation Site Alternative would have no impact to land use and planning.

4.9.6 Subtransmission Line Segment Alternative

Subtransmission Line Segment Alternative has a similar setting to the Proposed Project, and would be located adjacent to existing roadways. As a result, like the Proposed Project, the Subtransmission Line Segment Alternative would have no impact to land use and planning.

4.9.7 References

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009].

Kings County. 2008. Kings County Zoning Ordinance. [online] http://www.countyofkings.com/planning/toc.html#zo [cited August 2009].

4.10 Mineral Resources

This section describes the mineral resources in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.10.1 Environmental Setting

Oil and gas production in Kings County has diminished over the past 25 years, and this trend is likely to continue. Previously, the only mineral mining operations in the county were a gypsum mine and an open pit mercury mine, but they have ceased operation (Kings County, 1993). The State of California has not designated any part of Kings County as principal mineral-producing localities (CGS, 2000).

4.10.2 Regulatory Setting

There are no mineral resource laws, rules, or regulations that apply to the Proposed Project or its alternatives.

4.10.3 Significance Criteria

The significance criteria for assessing the impacts to mineral resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
- Result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

4.10.4 Impact Analysis

4.10.4.1 No Impact

Construction and operation of the Proposed Project would not result in impacts for the following CEQA criteria:

Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

The State of California has not identified Kings County as having mineral resources of value to the residents of the State. Construction and operation of the Proposed Project would have no impact to mineral resources of value to the region and residents of the state.

Would the project result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Kings County has not identified any mineral resource protection zones in its General Plan. Construction and operation of the Proposed Project would have no impact to the loss of availability of locally important mineral resources.

4.10.4.2 Construction Impacts

There are no impacts to mineral resources resulting from construction of the Proposed Project.

4.10.4.3 Operation Impacts

There are no impacts to mineral resources resulting from operation of the Proposed Project.

4.10.5 Substation Site Alternative

The Substation Site Alternative is also located in Kings County, and like the Proposed Project, would have no impact to mineral resources.

4.10.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative is also located in Kings County, and like the Proposed Project, would have no impact to mineral resources.

4.10.7 References

California Geological Survey (CGS). 2000. Map of California Principal Mineral Producing Localities 1990 - 2000. [online] http://www.conservation.ca.gov/cgs/geologic_resources/mineral_production/Documents/YellowMap.pdf. [cited May 2009].

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

4.11 Noise

This section describes the noise in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.11.1 Environmental Setting

Noise is defined as unwanted or objectionable sound. Sound is usually considered unwanted when it interferes with normal activities, when it causes physical harm, and when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment.

Decibel (dB) is the unit of measure used to describe the loudness of sound. Because the range of sound that humans can hear is quite large, the dB scale is logarithmic, making calculations more manageable. A number of factors affect people's perception of sound. These factors include the actual level of noise, the frequencies involved, the period of exposure to the sound, and changes or fluctuations in the sound level during exposure. In order to measure sound in a manner that accurately reflects human perception, several measuring systems or scales have been developed. The A-weighted scale reflects the fact that the human ear does not perceive all pitches or frequencies equally; therefore, decibel measurements are adjusted (or weighted) to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. The adjusted unit is known as the A-weighted decibel (dBA).

To reflect the fact that ambient noise levels from various sources vary over time, they are generally expressed as an equivalent noise level (Leq), which is a computed steady noise level over a specified time as the varying sound. Leq values are commonly expressed for one-hour periods, but different averaging times may be specified.

For the evaluation of community noise effects, Community Noise Equivalent Level (CNEL) is often used. It represents the average A-weighted noise level during a 24-hour day with a 5-decibel addition for the period from 7:00 pm to 10:00 pm and a 10-decibel addition for the period from 10:00 pm to 7:00 pm.

The Proposed Project would be located in the unincorporated area of Kings County. Noise levels in this area are those typical of agricultural uses. Other sources of noise include vehicular traffic on major roads and streets of the area, Lemoore Raceway, and Hanford Municipal Airport. Measurements of noise levels at various locations in the general vicinity of the Proposed Project are available in the General Plan for Kings County. The most relevant data are shown in Table 4.11-1, Noise Measurements in Kings County.

Table 4.11-1 Noise Measurements in Kings County

Location	Estimated L_{dn}	Sources
2nd Ave. between Highway 198 and Grangeville Blvd	49	Natural Sounds, Distant Traffic
Northeast Corner of County	56	Natural sounds, Agricultural Equipment

Source: Kings County, 2009

Two airports located within the County have been identified for public use, the Hanford Municipal Airport and the Corcoran Airport. The nearest airport, Hanford Municipal airport, is located approximately 1.5 miles from the Proposed Project. There are several private airstrips in Kings County, the nearest of which to the Proposed Project is approximately 4 miles away.

4.11.2 Regulatory Setting

Kings County does not have a noise ordinance. However, Kings County has a Right-to-Farm Ordinance that recognizes that "agricultural activities and operations, including, but not limited to, equipment and animal noise; …are conducted on a 24-hour a day, seven-day a week basis…" in agricultural areas. Therefore, normal and usual agricultural operation creating elevated sound levels are not considered a nuisance.

One of the fundamental objectives of the Kings County Noise Element is to "protect existing noise-producing agricultural, commercial, and industrial uses in the County of Kings from encroachment by noise-sensitive land uses." The Noise Element is proposing non-transportation noise standards to apply to receiving land uses, with the most stringent being a residential land use receiving greater than 55 Leq and 75 Lmax.

4.11.3 Significance Criteria

The significance criteria for assessing the impacts to noise levels come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it results in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

- For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels

4.11.4 Impact Analysis

4.11.4.1 No Impact

For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

A portion of the Proposed Project subtransmission line segment would be located within two miles of the Hanford Municipal Airport, but it is outside the Kings County Airport Land Use Compatibility Plan area. Because the Proposed Project would not be located within an airport noise-impacted area delineated by the Kings County Airport Land Use Compatibility Plan, there would be no impact due to the exposure of people working in the area to excessive airport noise.

For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels?

Because the nearest identified airstrip is approximately 4 miles away, construction and operation of the Proposed Project would not expose persons working in the project area to excessive noise levels due to the proximity of an airstrip. There would be no impact.

4.11.4.2 Construction Impacts

Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Kings County does not have a noise ordinance. However, Kings County has a Right-to-Farm Ordinance that recognizes that "agricultural activities and operations, including, but not limited to, equipment and animal noise; …are conducted on a 24-hour a day, seven-day a week basis…" in agricultural areas. Therefore, normal and usual agricultural operation creating elevated sound levels are not considered a nuisance. Because the Proposed Project would be located within an agricultural area, construction equipment noise would be consistent with that expected for normal agricultural operations. Impacts would be less than significant.

Would the project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction activities, such as the tamping of ground surfaces and the passing of heavy trucks on uneven surfaces may produce minor groundborne vibration in the immediate vicinity of the activity. Impacts from construction-related groundborne vibration, should they occur, would be intermittent and confined to only the immediate area around the activity. As a result, the impact would be less than significant.

Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction of the Proposed Project would be temporary and short in duration. There would be no permanent increases in noise levels during construction of the Proposed Project. As a result, there would be no impact.

Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction of the Proposed Project would require a variety of equipment. Typical noise levels for construction equipment at 50 feet from the source are listed in Table 4.11-2, Typical Noise Levels Generated by Construction Equipment.

The maximum intermittent noise levels are expected to range from 74 to 89 dBA at approximately 50 feet, and noise levels would be further attenuated by distance to the receptor and the presence of structures and vegetation.

Noise impacts associated with construction would mainly affect those persons closest to the Proposed Project subtransmission line segment route. Existing homes along the route would experience a temporary increase in noise levels above those existing without the project. However, the distance from those persons to the construction area would attenuate the noise, and the construction sites would vary by location daily due to the linear nature of the subtransmission line segment. Impacts would be less than significant.

Table 4.11-2 Typical Noise Levels Generated by Construction Equipment

Equipment	Noise Level (dBA) at 50 Feet
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: FTA, 2006

4.11.4.3 Operation Impacts

Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Kings County does not have a noise ordinance. However, Kings County has a Right-to-Farm Ordinance that recognizes that "agricultural activities and operations, including, but not limited to, equipment and animal noise; …are conducted on a 24-hour a day, seven-day a week basis…" in agricultural areas. Therefore, normal and usual agricultural operation creating elevated sound levels are not considered a nuisance. Because the Proposed Project would be located within an agricultural area, the noise associated with routine maintenance and emergency repair that would occur during operation of the

Proposed Project would be consistent with that expected for normal agricultural operations. Impacts would be less than significant.

Would the project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Operation of the Proposed Project would consist of routine maintenance and emergency repair, which is unlikely to produce groundborne vibration. In addition, operation of the transformer could produce groundborne vibration, but it would be perceptible only in the immediate vicinity of the transformer pad, if at all. Impacts due to the generation of excessive groundborne vibration during operation of the Proposed Project would be less than significant.

Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The permanent noise sources that would occur with the Proposed Project are limited to the subtransmission line segment (conductors and insulators), and transformer operation at the Mascot Substation.

When a subtransmission line is in operation, an electric field is generated in the air surrounding the conductors forming a "corona". Corona results from the partial breakdown of the electrical insulating properties of the air surrounding the conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small local pressure changes that result in audible noise, or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a 120 hertz hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, making corona discharge and the associated audible noise more likely. Therefore, audible noise from transmission lines is generally a foul weather (wet conductor) phenomenon. However, during fair weather, insects and dust on the conductors can also serve as sources of corona.

The Electric Power Research Institute (EPRI) conducted several studies of corona effects (EPRI, 1978; 1987). These typical noise levels for transmission lines with wet conductors are presented in Table 4.11-3, Transmission Line Voltage and Audible Noise Level.

Table 4.11-3 Transmission Line Voltage and Audible Noise Level

Line Voltage	Audible Noise Level Directly Below the Conductor
138 kV	33.5 dbA
240 kV	40.4 dbA
356 kV	51.0 dbA

As part of the project, SCE would install polymer (silicon rubber) insulators on the subtransmission line segment. This material is hydrophobic (repels water) and minimizes the accumulation of surface contaminants such as soot and dirt, which in turn reduces the potential for corona noise to be generated at the insulators.

Substations usually generate steady noise from the operation of transformers, and the cooling fans and oil pumps needed to cool the transformer during periods of high electrical demand. With all auxiliary cooling fans operating, the worst-case noise level from the transformers at full load is predicted to be no more than 66 dBA at three feet away from the equipment. Typically, transformers are located near the center of the substation footprint, approximately 60 feet from the 8-foot block wall surrounding the substation site. Considering that a 6 dBA decrease of sound occurs with every doubling of distance from the source, transformer noise would be attenuated to approximately 40 dBA 60 feet from the source. The 8-foot block wall that would be constructed around the substation would provide noise attenuation of about 10 dBA, so that the transformer noise level outside the wall would be approximately 30 dBA (CPUC, 2007). This estimation is far below the most stringent noise impacted land use compatibility guidelines (State of California, 2003).

As a result, the Proposed Project would not cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Impacts would be less than significant.

Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Operation of the Proposed Project would consist of routine inspection and maintenance of the facilities, and would not contribute to a temporary increase in ambient noise in the area. Impacts would be less than significant.

4.11.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as the Proposed Project substation site, and is similar in scope. Construction and operation of the Proposed Project at the Substation Site Alternative would be similar to those of the Proposed Project. Impacts would be less than significant.

4.11.6 Subtransmission Line Segment Alternative

The 66 kV Subtransmission Line Segment Alternative is longer in length than the subtransmission line segment for the Proposed Project and the construction duration would be longer in length. As a result, impacts to noise would be greater than those for the Proposed Project. However, the impacts would be less than significant.

4.11.7 References

Electrical Power Research institute (EPRI). 1978. Transmission Line Reference Book, 115 - 138 kV.

EPRI. 1987. Transmission Line Reference Book, 345 kV.

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

Kings County. 1994. Kings County Airport Land Use Compatibility Plan. [online] http://www.countyofkings.com/planning/Plan/Kings%20County%20airport%20land%20use%20compatibility%20plan.pdf [cited April 2009].

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

CPUC. 2007. Mitigated Negative Declaration, SCE's Application for a Permit to Construct the Riverway Substation Project, Application No. 06-06-004, SCH No. 2007051159, July 2007.

State of California. 2003. General Plan [online] http://www.opr.ca.gov/planning/publications/General_Plan_Guidelines_2003.pdf [cited September 2009]

4.12 Population and Housing

This section describes population and housing in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.12.1 Environmental Setting

The Proposed Project would be located in unincorporated Kings County. The historic and future population growth data of Kings County, its unincorporated area, and the City of Hanford is presented in Table 4.12, Historic and Estimated Population. Population in Kings County increased approximately 52 percent between 1990 and 2009. Similarly, the City of Hanford experienced a population increase of approximately 73 percent during the same time period.

Table 4.12 Historic and Estimated Population

Year	Kings County	Unincorporated Kings County	City of Hanford
1990	101,469	34,254	30,463
1995	114,825	33,640	37,362
2000	128,787	32,428	41,296
2005	145,426	36,407	47,923
2009	154,743	35,474	52,687

Source: California Department of Finance, 2009

4.12.2 Regulatory Setting

There are no population or housing laws, rules, or regulations that apply to the Proposed Project.

4.12.3 Significance Criteria

The significance criteria for assessing the impacts to population and housing come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Induce substantial population growth in the area, either directly (by proposing new homes and businesses) or indirectly (through the extension of new roads or other infrastructure)
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

4.12.4 Impact Analysis

4.12.4.1 No Impact

Construction and operation of the Proposed Project would not result in impacts for the following CEQA criteria:

Would the project induce substantial population growth in the area, either directly (by proposing new homes and businesses) or indirectly (through the extension of new roads or other infrastructure)?

Neither construction nor operation of the Proposed Project would induce substantial population growth in the area, directly or indirectly. Construction activities are anticipated to occur for approximately 11 months, and during peak times, SCE expects to have a maximum of approximately 40 craft laborers working per day during construction. Some need for temporary accommodations is likely to arise during construction. However, there are numerous hotel and motel accommodations within the City of Hanford and the City of Visalia, approximately 20 miles away. When in operation, the substation would be unstaffed and remotely operated, and visits to the substation site would likely be approximately three to four times per month, and would not require dedicated, full-time personnel.

The Proposed Project is being built to meet the electrical needs of the area, and therefore, would not induce substantial population growth in the area either directly or indirectly (see Section 6.2, Growth Inducing Impacts, for more information). Therefore, construction and operation of the Proposed Project would not create new opportunities for local industry or commerce or impact population growth in the area.

Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Construction and operation of the Proposed Project would not displace any existing housing; therefore, there would be no impact.

Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The Proposed Project would not displace any existing residences, businesses, or people as a result of construction or operation. Therefore, there would be no impact.

4.12.4.2 Construction Impacts

There are no impacts to population and housing resulting from construction of the Proposed Project.

4.12.4.3 Operation Impacts

There are no impacts to population and housing resulting from operation of the Proposed Project.

4.12.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as the Proposed Project, and is similar in scope. As a result, impacts to population and housing would be the same as those of the Proposed Project. There would be no impact to population and housing.

4.12.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting to that of the Proposed Project, and is similar in scope. As a result, impacts to population and housing would be the same as those of the Proposed Project. There would be no impact to population and housing.

4.12.7 References

California Department of Finance. 2009. Demographic Research Unit. [online] http://www.dof.ca.gov/research/demographic/reports/ [cited May 2009].

4.13 Public Services

This section describes public services in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.13.1 Environmental Setting

Fire protection throughout the areas surrounding the Proposed Project is provided by the Kings County Fire Department. The Kings County Fire Department operates ten fire stations with professional staff providing fire suppression, emergency medical, rescue, and fire prevention services (Kings County, 2009).

The California Highway Patrol, with additional support from the Kings County Sheriff's Department, provides traffic and law enforcement for unincorporated areas of Kings County.

Northeastern Kings County has two school districts: the Hanford Joint Union School District and the Hanford Elementary School District.

The closest hospital facility to the Proposed Project is the Hanford Community Medical Center. This hospital provides general medical and surgical services (Kings County, 2009).

4.13.2 Regulatory Setting

There are no public service laws, rules, or regulations that apply to the Proposed Project or its alternatives.

4.13.3 Significance Criteria

The significance criteria for assessing the impacts to public services come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities

4.13.4 Impact Analysis

The nearest fire station to the Proposed Project is approximately 1 mile away at 7622 Houston Avenue. There are no schools within one-quarter mile of the Proposed Project; the nearest school is Kit Carson Elementary School, at 9895 7th Avenue, approximately 0.5 miles from the Proposed Project.

4.13.4.1 Construction Impacts

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?

The Proposed Project is not located within a high wildfire area and construction is unlikely to require the expansion of fire protection services in the local jurisdictions. Construction of the Proposed Project is unlikely to require the use of local law enforcement agencies. If necessary, SCE would hire a local security company to provide 24-hour attendance at the material staging yards during construction, minimizing the involvement of local law enforcement.

The construction of the Proposed Project would not significantly affect school enrollment or impact the performance objectives of these schools.

Construction of the Proposed Project would have a less than significant impact to government facilities such as fire, police, schools, or other public facilities. Impacts to parks in the area are evaluated in Section 4.14, Recreation.

4.13.4.2 Operation Impacts

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?

Operation of the Proposed Project would consist of routine maintenance and emergency repair. These activities are unlikely to require the use of public services. Because operation of the project would have no growth-inducing impacts (please see Section 6.2, Growth Inducing Impacts, for more information), it would not create a need for new schools, hospitals, or other public services. As a result, operation of the Proposed Project would have a less than significant impact to public services. Impacts to parks in the area are evaluated in Section 4.14, Recreation.

4.13.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as that of the Proposed Project, and is similar in scope. As a result, impacts to public services would be similar to those of the Proposed Project. Impacts to public services would be less than significant.

4.13.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting to that of the Proposed Project, and is similar in scope. As a result, impacts to public services would be similar to those of the Proposed Project. Impacts to public services would be less than significant.

4.13.7 References

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

Kings County Fire Department. 2009. Website. [online] http://www.countyofkings.com/fire/stations.html [cited September 2009]

4.14 Recreation

This section describes recreation in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.14.1 Environmental Setting

There are no parks within 300 feet of the Proposed Project. Kings County presently owns and maintains three parks: Burris, Hickey, and Kingston. The nearest county park to the Proposed Project is approximately 7 miles away at Burris Park near the Kings River to the north of the Proposed Project (Kings County, 1993).

4.14.2 Regulatory Setting

There are no recreation-related laws, rules, or regulations that apply to the Proposed Project or its alternatives.

4.14.3 Significance Criteria

The significance criteria for assessing the impacts to recreational resources come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

- Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment

4.14.4 Impact Analysis

4.14.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criteria:

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction and operation of the Proposed Project would not involve the use of recreational facilities, nor would it cause population growth that would result in the increased use of recreational facilities (please see Section 6.2, Growth Inducing Impacts). Therefore, construction and operation of the Proposed Project would not result in the deterioration of existing recreational facilities.

Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

As discussed above, construction and operation of Proposed Project would not affect existing recreational facilities, and would not induce population growth which would result in the need for new or expanded recreational facilities. As a result, there would be no impact to the environment from new or expanded recreational facilities from construction and operation of the Proposed Project.

4.14.4.2 Construction Impacts

There are no impacts to recreation resulting from construction of the Proposed Project.

4.14.4.3 Operation Impacts

There are no impacts to recreation resulting from operation of the Proposed Project.

4.14.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as that of the Proposed Project, and is similar in scope. As a result, impacts to recreation would be the same as those for the Proposed Project. There would be no impact to recreation.

4.14.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting as that of the Proposed Project, and is similar in scope. As a result, impacts to recreation would be the same as those for the Proposed Project. There would be no impact to recreation.

4.14.7 References

Kings County. 1993. Kings County General Plan. [online]
http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

4.15 Transportation and Traffic

This section describes transportation and traffic in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.15.1 Environmental Setting

Streets and highways serve as the dominant system of transportation in Kings County, with highway traffic generally composed of farm-to-market, business and commuter trips. Other transportation systems in Kings County include public transit, rail, non-motorized, and aviation.

Roadways are typically ranked according to guidelines set forth by the Highway Capacity Manual that assigns a Level of Service (LOS) rating based on factors such as speed, travel time, ability to maneuver, traffic interruptions, and safety. The highest ranked roadways are designated LOS A, representing a free-flow of traffic, and the lowest ranked roadways are designated LOS F, representing forced or broken-down flow. Kings County considers an LOS D to be acceptable standard for all County-maintained roads.

Kings County has a high level of truck travel, much of it related to the local agricultural economy. One interstate and five state roadways in Kings County are designated truck routes that are part of the established National Network of long haul truck routes. These truck routes permit a single trailer with a 48-foot maximum length or double trailers with a maximum length of 28.5 feet. Truck Routes in the area of the Proposed Project are shown on Figure 4.15, Truck Routes.

Public Transportation

Kings Area Rural Transit (KART) is a public rural and urban transportation service that provides countywide bus service. KART provides seven fixed bus routes between cities and communities in the County. Dial-A-Ride service is also available for those residents of the cities of Hanford, Lemoore, Armona, and Avenal.

Two common carriers (Greyhound and Orange Belt Stages) provide private bus services within Kings County, which links County travelers with other regions in the San Joaquin Valley and California. The Agricultural Industries Transportation Services (AITS) program is designed to provide qualified agricultural workers in Kings, Kern, Tulare, Fresno, and Madera Counties with safe, reliable, and affordable vans they can use to drive themselves and others to work (Kings County, 2009).

Figure 4.15 Truck Routes

Figure 4.15 Truck Routes

Rail Service

Passenger rail service in Kings County is provided by Amtrak on its San Joaquin service, with rail stations located in Hanford and Corcoran. Freight rail service is currently provided by two rail lines. The north/south rail line service is the Burlington Northern & Santa Fe (BN&SF) Railway line that runs from Bakersfield in the south to Roseville in the north. The east/west rail line service is the San Joaquin Valley Railroad (SJVRR) and travels from Visalia in the east to Huron in the west (Kings County, 2009).

Air Service

Two airports located within Kings County have been identified for public use, the Hanford Municipal Airport and the Corcoran Airport. The nearest airport, Hanford Municipal airport, is located approximately 1.5 miles from the Proposed Project.

4.15.2 Regulatory Setting

Caltrans. Manages state highways and rail facilities in California and has the discretionary authority to issue special permits for the movement of vehicles/loads exceeding statutory limitations on the size, weight, and loading of vehicles contained in Division 15 of the California Vehicle Code, and to issue encroachment permits for the use of California State highways for purposes other than normal transportation.

Kings County. Kings County requires an encroachment permit for any impediment to travel on highways over which the County has jurisdiction, and requires a transportation permit to carry extralegal loads on County roadways.

4.15.3 Significance Criteria

The significance criteria for assessing the impacts to transportation and traffic come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways
- Result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)

- Result in inadequate emergency access
- Result in inadequate parking capacity
- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)

4.15.4 Impact Analysis

Kings County has evaluated the Level of Service for several roadways in the vicinity of the Proposed Project. This information is summarized in Table 4.15, Roadway Traffic Counts in the Vicinity of the Proposed Project.

Table 4.15 Roadway Traffic Counts in the Vicinity of the Proposed Project

Roadway	Vehicles per day	Level of Service
State Route 198 6th Avenue to Tulare County Line	19,800	F
State Route 43 Between Highway 198 and Lacey Boulevard	11,300	C
State Route 43 Between Lacey Boulevard and Grangeville Boulevard	10,300	C
Grangeville Boulevard Between Hanford City Limits and 6th Avenue	3,080	B
Grangeville Boulevard Between 6th Avenue and Tulare County Line	3,120	B
6th Avenue Between Houston Avenue and State Route 198	380	B
6th Avenue Between State Route 198 and Fargo Avenue	2,290	B

Source: Kings County, 2009

As shown in the table above, all of the roadway segments, except for one, are currently operating at acceptable LOS D conditions or better. Highway 198 between 6th Avenue and the Tulare County line is currently operating at LOS F conditions. There are plans to widen Highway 198 from two to four lanes in this area within the next five years (Kings County, 2009).

4.15.4.1 No Impact

Construction and operation of the Proposed Project would not produce impacts for the following CEQA criteria:

Would the project result in change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

A portion of the Proposed Project subtransmission line segment would be located within 2 miles of the Hanford Municipal Airport, but it is outside the Kings County Airport Land Use Compatibility Plan area. As a result, construction and operation of the Proposed Project would not impact air traffic patterns.

Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

Construction and operation of the Proposed Project would not include components that would increase any transportation-related design hazards nor involve incompatible uses of transportation facilities. Therefore, there would be no impact due to an increase in hazards.

Would the project result in inadequate emergency access?

Operation of the Proposed Project would not affect emergency access in the region because the subtransmission line segment would span all potential emergency response and evacuation routes. Electrical facilities are typically considered critical facilities in emergency response plans, and every effort would be made by SCE to maintain electrical service during emergencies. Impacts to emergency access as a result of operation of the Proposed Project would be less than significant.

Would the project result in inadequate parking capacity?

Parking during construction of the Proposed Project would occur at the Material Staging Yard, and during operation, parking would occur at the substation. Because the construction and operation of the Proposed Project would not require the use of designated parking areas, there would be no impacts to parking from construction and operation.

Would the project conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

There are no existing bus stops or bicycle racks located on the roadways that would be utilized by construction or operation of the Proposed Project. There would be no impact to plans or programs supporting alternative transportation.

4.15.4.2 Construction Impacts

Would the project cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Construction of the Proposed Project would involve the use of roadways for worker commutes and material delivery. Table 4.15, Roadway Traffic Counts in the Vicinity of the Proposed Project, provides information about the traffic volumes and levels of service for the roadways in the vicinity of the Proposed Project. It is estimated that a maximum of approximately 40 craft laborers per day would be working onsite during construction of the Proposed Project. Personnel would generally drive to a worksite at the beginning of the day and leave at the end of the day, with fewer people traveling to and from the worksite throughout the day. SCE would encourage carpooling to the material staging yard to reduce personnel vehicle traffic to the greatest extent possible.

Material delivery to the material staging yard would vary throughout the construction period. It is anticipated that the greatest number of truck trips for the Proposed Project would be those to the substation site during grading. It is estimated that during the 15 week grading period, hauling soil from and to the site would result in approximately 51 trips per day.

In addition, construction of the Proposed Project subtransmission line segment would require soil hauling to install the new subtransmission structures. Up to approximately five truck trips per day could be expected during subtransmission structure installation.

This level of construction traffic is negligible when added to the existing daily traffic on existing roadways, and would not change the level of service that the roadways are presently experiencing. In addition, as described in Section 3.2.1.4, Traffic Control, the use of flaggers to stop traffic may be required during installation of conductor above active roadways. SCE would obtain permits as required from appropriate agencies to cross these roadways and would perform work according to permit requirements. Since these closures would be isolated, temporary, short in duration, and coordinated with agencies, construction of the new subtransmission line segment would not significantly disrupt traffic.

Construction of the Proposed Project would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. As a result, impacts to an increase in traffic would be less than significant.

Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

As discussed above, the amount of construction traffic is low when added to the existing daily traffic on roadways in the area, and would not change the LOS standard the

roadway is presently experiencing. Impacts to the LOS standard would be less than significant.

4.15.4.3 Operation Impacts

Would the project cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Operation of the Proposed Project would consist of routine maintenance and emergency repair. The Proposed Project substation would be unstaffed, and trips to the substations are expected to occur three to four times a month. In addition, the 66 kV subtransmission line segment would be inspected annually. These activities would not result in a substantial increase in traffic. There would be no impact to existing traffic load or capacity of the street system from operation of the Proposed Project.

Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

As discussed above, the amount of operation-related traffic is low when added to the existing daily traffic on roadways in the area, and would not affect the LOS standard the roadways are already experiencing. Impacts would be less than significant.

4.15.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as that of the Proposed Project, and is similar in scope. As a result, impacts to transportation and traffic would be similar to those of the Proposed Project. Impacts to transportation and traffic would be less than significant.

4.15.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting to that of the Proposed Project, and is similar in scope. As a result, impacts to transportation and traffic would be similar to those of the Proposed Project. Impacts to transportation and traffic would be less than significant.

4.15.7 References

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009].

4.16 Utilities and Service Systems

This section describes the utilities and service systems in the area of the Proposed Project. The potential impacts of the Proposed Project and alternatives are also discussed.

4.16.1 Environmental Setting

Much of the water used for irrigation, agriculture, domestic and industrial uses comes from surface water from the Kings River, Cross Creek, and the California Aqueduct. The Kings County Water District (KCWD) provides drinking water to the northeastern portion of Kings County.

Waste water service in Kings County is provided by public sewers in the incorporated cities and community service districts. In rural areas, septic systems and leach fields are used (Kings County, 2009).

Flood flows in community districts and urban fringe areas in Kings County are typically conveyed by irrigation channels, and are typically captured for groundwater recharge prior to discharge to the Tulare Lake basin in central Kings County. In more rural and agricultural areas, where the Proposed Project area is located, roadways are elevated relative to grade, designed to drain storm water onto adjacent properties (Kings County, 2009).

There are three active landfills in Kings County with approximately 34 million cubic yards of permitted capacity remaining. These landfills and their cubic yards of permitted capacity remaining are Avenal Regional Landfill (26 million), Chemical Waste Management, Inc. (1.9 million), and Kettleman Hills (6 million) (CIWMB, 2009).

4.16.2 Regulatory Setting

California Health and Safety Code Section 25150. Requires treated wood to be disposed of in either a Class I hazardous waste landfill or in a composite-lined portion of a solid waste landfill unit that meets RWQCB-specified requirements.

4.16.3 Significance Criteria

The significance criteria for assessing the impacts to public services come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if the project:

- Exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board
- Requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

- Requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

- Does not have sufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements are needed

- Results in the determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments

- Is served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs

- Does not comply with federal, state, and local statutes and regulations related to solid waste

4.16.4 Impact Analysis

4.16.4.1 No Impact

Construction and operation of the Proposed Project would not result in impacts for the following CEQA criteria:

Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Construction and operation of the Proposed Project would not discharge concentrated wastewater or large volumes of wastewater to a wastewater treatment facility that would exceed treatment requirements set forth by the RWQCB. As a result, construction and operation of the Proposed Project would have no impact to the treatment requirements of wastewater treatment plants serving the area.

Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

There is presently no water service at the substation site. However, should municipal water be used during construction (for dust suppression) and operation (for landscaping), it would not be in volumes or flow rates that would affect water treatment plant capacities. In addition, construction and operation of the Proposed Project would not discharge large volumes of wastewater. Construction and operation of the Proposed Project would have no impact to the expansion of water or wastewater treatment facilities serving the area.

Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction of the Proposed Project would not involve large-scale impermeable surfaces that would significantly increase the amount of storm water discharge in the area. As a result, construction and operation the Proposed Project would not require the construction of new storm water drainage facilities or expansion of existing facilities in the area. There would be no impact.

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The use of water for dust suppression during construction and for landscaping during operation is minimal, and would not be in volumes that would affect water supplies. Construction and operation of the Proposed Project would have no impact to the water supply in the area.

Would the project result in the determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction and operation of the Proposed Project would not discharge large volumes of wastewater. Construction and operation of the Proposed Project would have no impact to wastewater treatment providers in the area.

4.16.4.2 Construction Impacts

Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Waste from construction activities would be sent to one or more of the landfills in the area. The landfills in the region have adequate permitted capacity to be able to accommodate this waste. Construction of the Proposed Project would result in a less than significant impact to landfill capacity.

Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The Proposed Project may include the disposal of treated wood poles. The wood poles removed during construction of the Proposed Project would be returned to the material staging yard, and depending on the condition of each pole, would be reused, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a RWQCB-certified municipal landfill. As a result, construction of the Proposed Project would have a less than significant impact to the applicable federal, state, and local statutes and regulations related to solid waste.

4.16.4.3 Operation Impacts

Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

The operation of the Proposed Project would primarily consist of routine visits to Mascot Substation, and annual inspection and routine maintenance of the subtransmission line segment and access roads. These activities would not generate waste in an amount that would affect the permitted capacity of landfills in the region. Operation of the Proposed Project would have a less than significant impact on the permitted capacity of a landfill.

Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The operation of the Proposed Project would consist of routine maintenance and emergency repair. These activities are not expected to generate solid waste subject to federal, state, or local statutes or regulations related to solid waste. Operation of the Proposed Project would have no impact to the applicable federal, state, and local statutes and regulations related to solid waste.

4.16.5 Substation Site Alternative

The Substation Site Alternative has a similar setting as that of the Proposed Project, and is similar in scope. As a result, impacts to utilities and service systems would be similar to those of the Proposed Project. Impacts to utilities and service systems would be less than significant.

4.16.6 Subtransmission Line Segment Alternative

The Subtransmission Line Segment Alternative has a similar setting to that of the Proposed Project, and is similar in scope. As a result, impacts to utilities and service systems would be similar to those of the Proposed Project. Impacts to utilities and service systems would be less than significant.

4.16.7 References

Kings County. 1993. Kings County General Plan. [online] http://www.countyofkings.com/planning/toc.html#gp [cited April 2009].

Kings County. 2009. 2035 Kings County General Plan [online] http://www.countyofkings.com/planning/2035%20General%20Plan.html [cited August 2009]

California Integrated Waste Management Board (CIWMB). 2009. Solid Waste Information System. [online] http://www.ciwmb.ca.gov/SWIS/default.htm [cited June 2009]

5.0 COMPARISON OF ALTERNATIVES

This section compares the environmental impacts of the alternatives. CEQA Guidelines (Section 15126.6(d)) require that an environmental impact report include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

The basic objectives of the Proposed Project, as developed in Section 1.5, are as follows:

- Serve long-term electrical demand requirements in the Electrical Needs Area beginning in 2012
- Construct the new electrical facilities to be located northeast of the City of Hanford, in order to maximize electrical benefits in the Electrical Needs Area
- Provide greater operational flexibility to transfer load between lines and substations within the Electrical Needs Area and the surrounding area
- Provide safe and reliable electrical service consistent with SCE's planning and operation guidelines
- Meet project need while minimizing environmental impacts

These objectives guide in developing a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives. All of the alternatives evaluated in the PEA, with the exception of the No Project Alternative, satisfy the project objectives.

General Order No. 131-D requires that an Application for a Permit to Construct include the "[r]easons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each." Table 5.1, Comparison of Alternatives, compares the Proposed Project, Substation Site Alternative, and Subtransmission Line Segment Alternative, by CEQA resource category.

As described in Chapter 4, Environmental Impact Assessment, with the implementation of Applicant Proposed Measures, impacts from the Proposed Project would be less than significant.

Table 5.1 Comparison of Alternatives

Section	Proposed Project Impacts	Substation Site Alternative	Subtransmission Line Segment Alternative
Aesthetics	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Agriculture Resources	Less than significant	Similar to the Proposed Project	Less than the Proposed Project
Air Quality	Less than significant	Similar to the Proposed Project	More than the Proposed Project
Biological Resources	Less than significant	Similar to the Proposed Project	More than the Proposed Project
Cultural Resources	Less than significant with APMs	Similar to the Proposed Project	Similar to the Proposed Project
Geology and Soils	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Hazards and Hazardous Materials	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Hydrology and Water Quality	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Land Use and Planning	No impact	Similar to the Proposed Project	Similar to the Proposed Project
Mineral Resources	No impact	Similar to the Proposed Project	Similar to the Proposed Project
Noise	Less than significant	Similar to the Proposed Project	More than the Proposed Project
Population and Housing	No impact	Similar to the Proposed Project	Similar to the Proposed Project
Public Services	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Recreation	No impact	Similar to the Proposed Project	Similar to the Proposed Project
Transportation and Traffic	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project
Utilities and Service Systems	Less than significant	Similar to the Proposed Project	Similar to the Proposed Project

6.0 OTHER CEQA CONSIDERATIONS

6.1 Cumulative Impacts

CEQA requires lead agencies to consider the cumulative impacts of proposals under their review. Section 15355 of the CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact "consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (Section 15130(a)(1)). The cumulative impacts analysis "would examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects" (Section 15130(b)(3)).

Section 15130(a)(3) also states that an environmental document may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

In conducting a cumulative impacts analysis, impacts are referenced to the temporal span and spatial areas in which the Proposed Project would cause impacts. Additionally, a discussion of cumulative impacts must include either: (1) a list of past, present, and reasonably future projects, including, if necessary, those outside the lead agency's control; or (2) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provided that such documents are referenced and made available for public inspection at a specified location (Section 15130(b)(1)). "Probable future project" includes approved projects that have not yet been constructed; projects that are currently under construction; projects requiring an agency approval for an application that has been received at the time a Notice of Preparation is released; and projects that have been budgeted, planned, or included as a later phase of a previously approved project (Section 15130(b)(1)(B)(2)).

There are few development projects within one mile of the Proposed Project. These developments are listed in Table 6.1, Projects Considered in Cumulative Impact Assessment.

Table 6.1 Projects Considered in Cumulative Impact Assessment

Number	Location	Name/Description	Jurisdiction	Status
1	Highway 198 and 7th Avenue	Garner Basin – Construction of a 36.6 acre recharge basin	Kings County	Approved
2	Highway 198 between Highway 43 and Tulare County line	Hanford Expressway Project – Widen SR198 from two lanes to four lanes	Caltrans	Approved

CEQANet, State of California, 2009; Kings County General Plan 2035, 2009

In addition to the projects listed above, the State of California High-Speed Train High Speed Rail Authority has included an alternative route for a new rail project between Fresno and Bakersfield to parallel Highway 43. A final route has not been selected.

The following section discusses the potential cumulative impacts of the Proposed Project for each environmental resource category.

Aesthetics. The effects to aesthetics resulting from construction and operation of the Proposed Project combined with those of the other projects listed in Table 6.1, Projects Considered in Cumulative Impact Assessment, wouldn't significantly affect the visual character or quality of the area. Cumulative impacts to aesthetics would be less than significant.

Agriculture. Construction and operation of the Proposed Project would have a less than significant effect to agriculture. The widening of SR198 and the possible alternative alignment of the high-speed train could result in the loss of farmland. However, as these transportation projects are located along existing transportation corridors, the impacts would be less than significant. The cumulative effects to agriculture would be less than significant.

Air Quality. Construction and operation of the Proposed Project would have a less than significant impact to air quality. Construction of the other projects listed in the cumulative impact analysis may contribute to adverse air quality, but the SJVAPCD has considered cumulative emissions when developing its thresholds of significance. Because the SJVAPCD does not consider construction emissions to count toward a threshold, but instead recommends using fugitive dust controls, cumulative impacts to air quality would be less than significant.

Biological Resources. Based on information collected to date, construction and operation of the Proposed Project is not expected to have significant impacts to biological resources. Several of the developments included in the cumulative impact analysis would occur on previously disturbed land. Impacts to biological resources are anticipated to be mitigated by the appropriate Lead Agency, and would not be cumulatively considerable when combined with the effects to biological resources from construction and operation of the Proposed Project. Cumulative impacts would be less than significant.

Cultural Resources. Construction and operation of the Proposed Project would not have significant and unavoidable impacts to cultural resources. The other developments included in the cumulative impact analysis may have impacts to cultural resources, but they would be subject to the same protective laws and regulations as the Proposed Project, and effects would not be cumulatively considerable.

Geology and Soils. When considering the effects to geology and soils that could be cumulatively considerable, such as the loss of topsoil, the potential impacts of all projects would be minimized by existing laws, regulations, and ordinances that require projects to implement SWPPPs during construction and obtain grading permits from local jurisdictions. The cumulative effects to geology and soils would be less than significant.

Hazards and Hazardous Waste. Construction and operation of the Proposed Project would not result in significant impacts to hazards or hazardous waste. None of the projects in the cumulative impact analysis would contribute to hazards or hazardous waste. Impacts would be less than significant.

Hydrology and Water Quality. Construction and operation of the Proposed Project would not result in significant impacts to hydrology and water quality. The projects evaluated in the cumulative impact analysis would similarly be subject to water quality protective measures such project-specific SWPPPs and grading permits. The cumulative effects to hydrology and water quality would be less than significant.

Land Use and Planning. Construction and operation of the Proposed Project would not result in significant impacts to land use and planning. The other projects in the cumulative impact analysis have been included in the region's long-term plans. Cumulative impacts to land use and planning would be less than significant.

Mineral Resources. Construction and operation of the Proposed Project would not result in significant impacts to mineral resources. The other developments planned in the area do not appear to affect mineral resources. There would be no cumulative impacts to mineral resources.

Noise. Construction and operation of the Proposed Project would not result in significant impacts to noise. The other developments that are part of the cumulative impact analysis may also generate noise during construction, but the construction noise generated by the Proposed Project would occur intermittently over eleven months. Cumulative impacts to noise would be less than significant.

Population and Housing. Construction and operation of the Proposed Project would not impact population and housing. Cumulative impacts to population and housing would be less than significant.

Public Services. Construction and operation of the Proposed Project would not result in significant impacts to public services. Any significant impacts to public services due to the construction and operation of the other projects in the cumulative impact analysis

would be addressed by the lead agencies during each project's CEQA process. Cumulative impacts to public services would be less than significant.

Recreation. Construction and operation of the Proposed Project would not impact recreation. Cumulative impacts to recreation would be less than significant.

Transportation and Traffic. Construction and operation of the Proposed Project would not result in significant impacts to transportation. The other projects that are part of the cumulative impact analysis may also generate traffic during construction (or road/lane closures), but the traffic generated during the construction of the Proposed Project would occur for a short period of time, and would not be considered cumulatively considerable. Operation of the Highway 198 widening would have a positive effect to transportation and traffic in the region. Cumulative impacts to transportation and traffic would be less than significant.

Utilities and Service Systems. Construction and operation of the Proposed Project would not result in significant impacts to utilities and service systems. Operation of the Garner Basin would have a positive effect to utilities and service systems in the region. Cumulative impacts to transportation and traffic would be less than significant.

Greenhouse Gas

Greenhouse gases (GHG) that may contribute to global climate change include water vapor, carbon dioxide (CO_2), several trace gases, and aerosols. Currently, man-made (anthropogenic) emissions are regulated in California for the following gases: CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).

Anthropogenic emissions of CO_2 in developed countries occur largely from combustion of fossil fuels. In California, the major categories of fossil fuel combustion CO_2 sources can be broken into sectors for residential, commercial, industrial, transportation, and electricity generation. Other GHG emissions, such as CH_4 and N_2O are also tracked, but occur in much smaller quantities. When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO_2 emission rate (CO_2e). California's anthropogenic GHG emissions are a small fraction of the world's total anthropogenic emissions, and are relatively minor when compared to estimates of naturally occurring CO_2 emissions.

Atmospheric CO_2 concentrations are the result of natural and anthropogenic sources and natural sinks such as the oceans and plant photosynthesis. Ice cores have been used to estimate historical CO_2 levels. Continuous atmospheric measurements with sophisticated instrumentation have only been available since 1954. The ice core data indicates that CO_2 levels may have been 10 or 20 times higher in the geologic past than in the present. CO_2 periodically cycled between 200 and 300 ppm during the last 400,000 years. However, during the past 50 years, the CO_2 has increased to 390 ppm as measured by instruments in Hawaii. Present levels are much lower than during most of the world's history.

However, CO_2 is estimated to be much higher today than it has been for several thousand years.

Historic global temperatures are difficult to estimate and much debate has occurred regarding methodologies that have been used. However, it is widely accepted that the global temperatures have cycled periodically much hotter and much colder than the present conditions. As recently as 1,000 years ago, the Medieval Warm Period was probably much warmer than today. Only 500 years ago, the Little Ice Age was probably much cooler than today.

The California Legislature has charged numerous state and local agencies with the task of developing regulations to address GHG emissions. For instance, the California Global Warming Solutions Act of 2006 (AB 32) charges the CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB established a scoping plan in December 2008 for achieving reductions in GHG emissions, and must develop regulations by January 1, 2011 for reducing those emissions by the year 2020. AB 32 also directs CARB to recommend a *de minimis* threshold of GHG emissions below which emission reduction requirements will not apply. Furthermore, California Senate Bill 97, passed in August 2007, requires the Office of Planning and Research (OPR) to prepare and develop CEQA guidelines for the feasible mitigation of GHG emissions, including, but not limited to, effects associated with energy consumption. Those guidelines are expected to be available in 2010, but may not include numeric criteria. Project-specific thresholds have yet to be developed by most responsible agencies.

The Climate Action Team, which consists of representatives from various state boards and departments, including the CPUC, has issued various reports outlining numerous strategies to reduce climate change-related emissions in California. The reports serve as the primary state guidance to date. The Proposed Project is therefore analyzed in light of whether it is consistent with the applicable GHG reduction measures recommended by the Climate Action Team's reports.

GHGs that contribute to climate change are CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6. SF_6 gas is used in substation circuit breakers and can potentially leak from the equipment. CO_2, CH_4, and other trace combustion products are emitted by fuel burning equipment during the construction and operation of the proposed facilities.

SF_6 Gas Management Guidelines. SCE SF_6 Gas Management Guidelines require proper documentation and control of SF_6 gas inventories, whether in equipment or in cylinders. Inventories are documented on both a quarterly and a yearly basis. SCE assumes that any SF_6 gas that is purchased and not used to fill new equipment is needed to replace SF_6 gas that has inadvertently leaked from equipment already in service. This allows SCE to track and manage SF_6 gas emissions. SCE currently voluntarily reports these emissions to the California Climate Action Registry, which was created by the California legislature to help companies track and reduce GHG emissions.

SCE has taken proactive steps in the effort to minimize GHG emissions since 1997. In 1997, SCE established an SF_6 Gas Resource Team to address issues pertaining to the environmental impacts of SF_6. The team developed the Gas Management Guidelines that allow for rapid location and repair of equipment leaking SF_6 gas. In addition, in 2001, SCE's parent organization, Edison International, joined the USEPA's voluntary SF_6 gas management program, committing SCE to join the national effort to minimize emissions of this GHG. Importantly, SCE's SF_6 emissions in 2006 were 41 percent less than in 1999, while the inventory of equipment containing SF_6 gas actually increased by 27 percent during the same time period.

SCE has made a significant investment in not only improving its SF_6 gas management practices, but also purchasing state-of-the-art gas handling equipment that minimizes SF_6 leakage. The new equipment has improved sealing designs that virtually eliminate possible sources of leakage. SCE has also addressed SF_6 leakage on older equipment by performing repairs and replacing antiquated equipment through its infrastructure replacement program. It is expected that the Proposed Project would have a minimal amount of SF_6 leakage as a result of the state-of-the-art equipment and SCE's SF_6 gas management practices. Pursuant to its existing practices, SCE would be reducing potential GHG impacts due to the Proposed Project to the greatest extent practicable.

Low Emission Fleet. The SCE fleet incorporates a significant number of clean diesel, electric and hybrid-electric service vehicles. In addition to meeting CARB emission standards for air quality criteria pollutants, SCE is aggressively lowering GHG emissions from SCE fleet operations.

CARB's threshold does not include construction emissions. Their current draft suggests that they may recommend fuel efficiency and other mitigation measures for construction activities.

The estimated total emissions of GHGs from the construction activities of the Mascot Substation Project are 626 metric tons CO_2e from all from combustion sources. Amortized over 30 years, the value is 21 metric tons per year. The estimated annual emissions of greenhouse gases from the operational activities are 23 metric tons CO_2e, primarily from SF_6 leakage (please see Appendix I, Equipment Emissions Estimations, for details). The total of amortized construction emissions and annual operational emissions is 44 metric tons CO_2e per year. This estimate is substantially lower than the 7,000 metric ton draft CARB threshold.

Since SCE complies with all Climate Action Team guidance and is well below the draft CARB recommendation, the Proposed Project is not expected to have a significant impact on greenhouse gas emissions.

6.2 Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines states that environmental documents "...discuss the ways in which the proposed project could foster economic or population

growth, or the construction of additional housing, either directly or indirectly in the surrounding environment..."

A project could be considered to have growth inducing effects if it:

- Either directly or indirectly fosters economic or population growth or the construction of additional housing in the surrounding area
- Removes obstacles to population growth
- Requires the construction of new community facilities that could cause significant environmental effects
- Encourages and facilitates other activities that could significantly affect the environment, either individually or cumulatively

Would the project either directly or indirectly foster economic or population growth or the construction of additional housing in the surrounding area?

The Proposed Project has been developed based upon a demonstrated need for electrical system reliability in the City of Hanford and the adjacent areas of unincorporated Kings County. The Proposed Project could be considered growth-inducing if growth resulted from the direct and indirect employment needed to construct, operate, and maintain the Proposed Project. As discussed in Chapter 3, Project Description, the construction and operation of the Proposed Project would not affect employment in the area. SCE anticipates that SCE personnel or contract workers would construct the Proposed Project. If contract workers were employed, they would not cause growth in the area due to the short-term and temporary nature of their employment. The Proposed Project would require routine maintenance and emergency repair, but would not require dedicated, full-time personnel.

Would the project remove obstacles to population growth?

Obstacles to population growth in the region served by the Proposed Project include development restrictions by the local agencies. The Proposed Project would not affect the feasibility of developing an area, nor would it affect any development restrictions administered by local agencies.

Would the project require the construction of new community facilities that could cause significant environmental effects?

The Proposed Project does not involve the creation of any community facilities or public roads that would provide new access to undeveloped or under developed areas, or extend public service to an area presently not served by electricity. The Proposed Project objectives respond to existing growth and demand trends.

Would the project encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively?

The demand for electricity is a result of, not a precursor to, development in the region. The basic objectives of the Proposed Project were developed in order to maintain electrical service reliability in the region.

6.3 Significant Environmental Effects of the Proposed Project

The CEQA Guidelines (Section 15126.2) requires a discussion of the overall significance of the environmental effects of the project. This discussion is to distinguish between the direct and indirect effects of a project, and the short-term/long term effects of a project. These potential significant environmental effects are summarized in Table 6.2, Significant Environmental Effects of the Proposed Project. With the implementation of APMs, all of the potential significant environmental effects associated with the Proposed Project would be reduced less than significant levels.

Table 6.2 Significant Environmental Effects of the Proposed Project

Resource	Description	Direct/Indirect	Short term/Long term
Cultural Resources			
Paleontological Resources in the Modesto Formation	Installation of substructures at depths greater than 3 feet have the potential to encounter paleontological resources	Direct	Short term Construction only

6.4 Mandatory Findings of Significance

The Mandatory Findings of Significance are as follows:

Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As presented in Chapter 4, Environmental Impact Assessment, construction and operation of the Proposed Project would not degrade the quality of the environment. The effects to biological resources discussed in Section 4.4.4, Biological Resources Impact Analysis. Construction and operation of the Proposed Project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-

sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. The effects to cultural resources resulting from construction and operation of the Proposed Project are discussed in Section 4.5.4, Cultural Resources Impact Analysis. Construction and operation of the Proposed Project would not eliminate important examples of any major periods of California history or prehistory.

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As discussed above in Section 6.1, Cumulative Impacts, the limited effects of the Proposed Project, when viewed with the potential effects of other projects occurring or planned to occur in the vicinity, are not expected to result in cumulatively considerable impacts.

Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Construction and operation of the Proposed Project would not cause substantial adverse effects on human beings. To the contrary, access to a reliable source of electricity would directly and indirectly enhance the lives of human beings, by supporting a functioning society that depends upon reliable electrical service.

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