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 Certificate of Public Convenience and Necessity for San Joaquin Cross Valley Loop Project	))))))	Application No. _____ (Filed May 30, 2008)

PROPONENT'S ENVIRONMENTAL ASSESSMENT SAN JOAQUIN CROSS VALLEY LOOP PROJECT

Volume 1 of 2

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Dated: May 30, 2008

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Abbreviations and Acronyms

ACSR	Aluminum Conductor Steel Reinforced
APM	Applicant Proposed Measure
BCHSHD	Big Creek Hydroelectric System Historic District
BM	Benchmark Maps
BMPs	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDC	California Department of Conservation
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2(eq)	Carbon dioxide equivalents
Corps	US Army Corps of Engineers
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	Decibels
dBA	Decibels on the A-weighted scale
DMC	DeLorme Mapping Company

Abbreviations and Acronyms

DWR	Department of Water Resources
EIR	Environmental Impact Assessment
EFS	Environmental First Search
ESA	Endangered Species Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
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
IPCC	International Panel on Climate Change
kcmil	Thousand circular mils
KDWCD	Kaweah Delta Water Conservation District
kV	Kilovolt
L_{dn}	Day-night average sound level
LOS	Level of service
MEER	Mechanical and Electrical Equipment Room
$\mu g/m^3$	Micrograms per cubic meter
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NERC	North American Electric Reliability Corporation
N_2O	Nitrous oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System

Abbreviations and Acronyms

NRCS	Natural Resource Conservation Service
O_3	Ozone
OPGW	Optical Ground Wire
Pb	Lead
PEA	Proponent's Environmental Assessment
PM	Particulate matter
PM_{10}	Particulate matter less than 10 microns
$PM_{2.5}$	Particulate matter less than 2.5 microns
ppm	Parts per million
RAS	Remedial Action Scheme
RCRA	Resource Conservation Recovery Act
ROW	Right of way
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison Company
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur dioxide
SOx	Sulfur oxides
SPAL	Small Project Analysis Level
SPCC	Spill Prevention Control and Countermeasure Plan
SRT	Sequoia Riverlands Trust
SSJVIC	Southern San Joaquin Valley Information Center
SVC	Static VAR Compensator
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TBM	Thomas Bros. Map
TCAG	Tulare County Association of Governments
TCOE	Tulare County Office of Education
USEPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish and Wildlife Service

Abbreviations and Acronyms

USGS	US Geological Survey
VOC	Volatile organic compound
VP	Viewpoint
WECC	Western Electricity Coordinating Council

EXECUTIVE SUMMARY

This Proponent's Environmental Assessment (PEA) evaluates the potential environmental impacts of Southern California Edison Company's (SCE) proposed San Joaquin Cross Valley Loop Project located in Northern Tulare County, California. The purpose of this project is to build electrical facilities necessary to maintain safe and reliable electric service to customers, and to serve the forecasted electrical demand in the southeastern portion of the San Joaquin Valley.

Electrical demand in the cities of Tulare, Visalia, Hanford, Farmersville, Exeter, and Woodlake, as well as the surrounding areas of Tulare and Kings Counties in SCE's service territory is served by the Rector 220/66 kilovolt (kV) System (Figure 1.1, Electrical Needs Area). The Rector System serves local demand utilizing electric energy that is primarily generated at facilities located outside of the Electrical Needs Area. These generation facilities include SCE's Big Creek Hydroelectric Project located in Fresno County and other generation facilities located in and south of Kern County.

Historically, the existing 220 kV transmission line configuration within the Big Creek Corridor adequately served the demand in the Electrical Needs Area. Presently, however, the growth in electrical demand in the western side of the Big Creek Corridor has far surpassed the growth in electrical demand in the eastern side. As a result, the existing 220 kV transmission lines in the western leg of the Big Creek Corridor are operating at or near capacity and the existing 220 kV transmission lines in the eastern leg are under-utilized. This unequal distribution of load has resulted in overloads on the 220 kV transmission lines serving Rector Substation from the Big Creek Hydroelectric Project. This condition jeopardizes SCE's ability to provide safe and reliable electric service to customers within the Electrical Needs Area.

Therefore, SCE is proposing a project to be operational in October 2012 to ensure the electrical transmission system has sufficient capacity and capability to provide safe and reliable electric service to customers in the Electrical Needs Area. Construction is scheduled to begin in 4th quarter of 2009 or immediately following receipt of all project approvals.

The San Joaquin Cross Valley Loop Project consists of the following activities:

- Replacement of approximately 1.1 miles of two sets of existing single circuit 220 kV transmission line segments with a single double circuit transmission line segment to be constructed with double circuit structures on the western side of SCE's existing ROW immediately north of Rector Substation. This would clear the eastern side of the existing SCE ROW in order to provide a location for the construction of the first 1.1 miles of the new transmission line described immediately below;

- Construction of a new, approximately 18.5 mile-long, double circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line circuit and the new Rector-Springville 220 kV transmission line circuit. The first 1.1 miles of the new double circuit transmission line would be on the eastern

side of SCE's existing ROW adjacent to the new double circuit 1.1 mile line segment described above;

- Installation of electrical equipment and substation supporting structures for the transmission lines, protective relays, and a mechanical and electrical equipment room (MEER) at Rector Substation to accommodate the transmission lines; and

- Removal of wave traps and line tuners and installation of additional protective relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation.

This PEA includes the information required by the California Public Utilities Commission's (CPUC) 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 Certificate of Public Convenience and Necessity (CPCN) 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 alternatives (Chapter 4). Potential impacts are assessed for all environmental factors contained in the most recent CEQA Environmental Checklist Form (Appendix A). The PEA concludes that the proposed project is presently believed to have less than significant impact or no impact to all environmental resource categories.

A comparison of alternatives is described in Chapter 5. No cumulative impacts, growth-inducing impacts, or indirect effects (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.

Section 1.0
Project Purpose and Need

1.0 PROJECT PURPOSE AND NEED

1.1 Project Purpose

The purpose of the San Joaquin Cross Valley Loop Transmission Project (Proposed Project) is to build electrical facilities necessary to maintain safe and reliable electric service to customers, and to serve the forecasted electrical demand in the southeastern portion of the San Joaquin Valley.

Under the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Western Electricity Coordinating Council (WECC), and California Public Utilities Commission rules, guidelines, or regulations, electrical transmission and distribution systems must have sufficient capacity to maintain safe, reliable, and adequate service to customers. The safety and reliability of the electrical system must be maintained under both normal conditions (i.e., base-case), when all facilities are in service, and abnormal conditions resulting 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.

1.2 Project Need

Electrical demand in the cities of Tulare, Visalia, Hanford, Farmersville, Exeter, and Woodlake, as well as the surrounding areas of Tulare and Kings Counties in SCE's service territory is served by the Rector 220/66 kilovolt (kV) System (Figure 1.1, Electrical Needs Area). The Rector System serves local demand utilizing electric energy that is primarily generated at facilities located outside of the Electrical Needs Area. These generation facilities include SCE's Big Creek Hydroelectric Project located in Fresno County and other generation facilities located in and south of Kern County.

Electricity is transmitted from the generating facilities to the Electrical Needs Area by a 220 kV transmission line system that is commonly referred to as the Big Creek Corridor. There are four 220 kV transmission lines within the Big Creek Corridor that originate at the Big Creek Hydroelectric Project. Two of these 220 kV transmission lines are located in the western leg of the corridor and terminate at the Rector 220/66 kV Substation (Big Creek 1-Rector 220 kV transmission line and Big Creek 3-Rector 220 kV transmission line). The other two 220 kV transmission lines are located in the eastern leg of the corridor and terminate at the Springville 220/66 kV Substation (Big Creek 3-Springville 220 kV transmission line and Big Creek 4-Springville 220 kV transmission line).

SCE utilizes a multi-step planning process to ensure that the necessary system facilities are operational in time to meet increased electrical demand. The planning process begins with the development of a peak demand forecast for each substation. Peak demand forecasts are developed using trends in population data, urbanization data, and meteorological data. Technical engineering analyses are then conducted to determine whether the forecast of peak demand can be accommodated on the existing transmission, subtransmission, and distribution systems. System facilities, such as substations or transmission lines, have defined operating limits. When projections indicate that these limits would be exceeded, a project is proposed to keep the electrical system within specified operating limits.

Historically, the existing 220 kV transmission line configuration within the Big Creek Corridor adequately served the demand in the Electrical Needs Area. Presently, however, the growth in electrical demand in the western side of the Big Creek Corridor has far surpassed the growth in electrical demand in the eastern side. As a result, the existing 220 kV transmission lines in the western leg of the Big Creek Corridor are operating at or near capacity and the existing 220 kV transmission lines in the eastern leg are under-utilized. This unequal distribution of load has resulted in overloads on the 220 kV transmission lines serving Rector Substation from the Big Creek Hydroelectric Project. This condition jeopardizes SCE's ability to provide safe and reliable electric service to customers within the Electrical Needs Area.

The need to loop the existing Big Creek 3-Springville 220 kV transmission line into the Rector Substation, as accomplished by the Proposed Project, was identified in the San Joaquin Valley Comprehensive Study (Appendix C), dated April 29, 2004, an addendum to the California Independent System Operator Corporation (CAISO) Controlled 2004-2013 SCE Transmission Study Report. This report identified the looping of the Big Creek 3-Springville 220 kV transmission line into the Rector Substation as the most economically feasible transmission line upgrade to implement in order to reduce the possibility of overloads on existing 220 kV transmission lines in the Big Creek Corridor[1]. On June 24, 2004, the CAISO Board of Governors approved the looping of the Big Creek 3-Springville 220 kV transmission line into the Rector Substation as the preferred long-term transmission alternative to address the identified reliability concerns[2]. The results from the 2004 study are summarized below.

Base-Case. The base-case scenario is defined by having all Big Creek Corridor electrical facilities in operation. As shown in Figure 1.2, Big Creek 3-Rector 220 kV Line Loading, Normal Conditions, the Big Creek 3-Rector 220 kV transmission line will be overloaded beyond its maximum allowable capability under base-case conditions when Rector load exceeds 700 MW. The peak load recorded at Rector Substation in 2007 was 696 MW (August 7, 2007). In 2008, the peak load forecast at Rector Substation using a 1-in-10 year heat storm assumption, is projected to be 752 MW.

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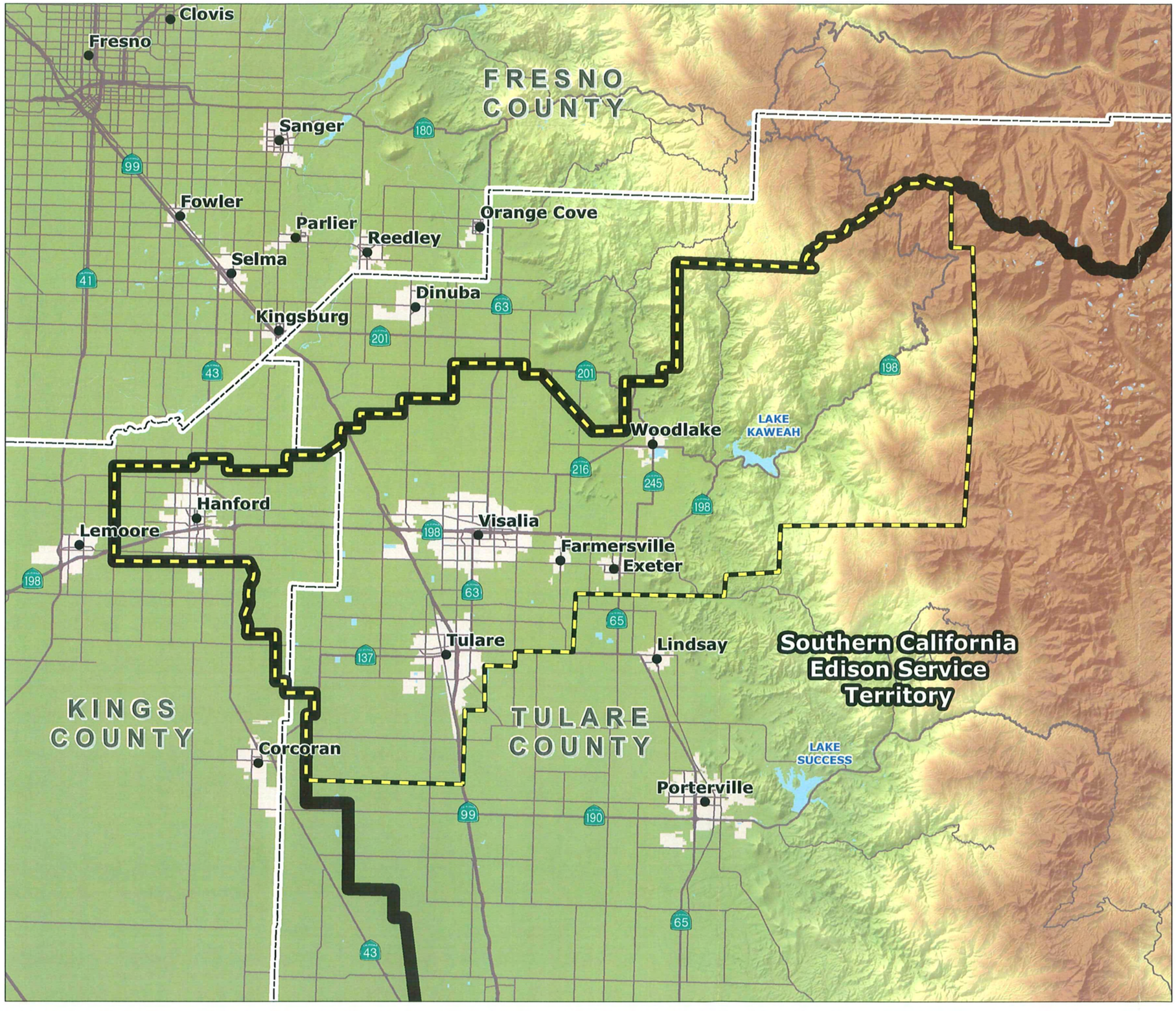
[1]In addition, this report identified the need to install a static VAR compensator (SVC) at Rector Substation to address transient stability criteria violations at Rector Substation. On June 24, 2004, the CAISO Board of Governors also approved the installation of the SVC at Rector Substation, and it was installed in Summer 2007.

[2]Subsequent studies completed in 2005, 2006, and 2007 have confirmed the need to loop the Big Creek 3-Springville 220 kV transmission line into Rector Substation. These subsequent studies illustrate the need for the project earlier than 2012 and identify interim emergency operational measures, such as load shedding and generation curtailment, to be implemented until such time as the Proposed Project is operational.

Figure 1.1
Electrical Needs Area



Electrical Needs Area

SCE Service Territory Boundary (SCE, 2006)

Cities (ESRI, 2000)

County Boundaries (TBM, 2008)

Transportation Lines (TBM, 2008)

Water Features (TBM, 2008)

N
W E
S

0 5 10 20 Miles

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

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One Transmission Line Out of Service. The study results in Appendix C indicate that the worst case single contingency[3] outage involves the loss of the Big Creek 1-Rector 220 kV transmission line with implementation of the Remedial Action Scheme (RAS)[4]. Such an outage could result in an overload of the Big Creek 3-Rector 220 kV transmission line. As shown in Figure 1.2, Big Creek 3-Rector 220 kV Line Loading, Single Outage, under such outage conditions, the Big Creek 3-Rector 220 kV transmission line could exceed its emergency rating (106 percent) when Rector load exceeds 650 MW. Also shown in Figure 1.2, the loss of the Big Creek 3-Rector 220 kV transmission line could result in an overload of the Big Creek 1-Rector 220 kV transmission line when load at Rector is above 700 MW.

Two Transmission Lines Out of Service. The San Joaquin Valley Comprehensive Study results shown in Appendix C indicate that severe transmission line overloads as well as potential transmission system voltage collapse would occur upon double contingency[5] outage conditions. The worst case double contingency outage involves the simultaneous loss of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines. Under such outage conditions, implementation of the RAS to reduce Big Creek Hydroelectric Project generation would be ineffective and severe transmission line overloads and potential transmission voltage collapse could result when load at Rector Substation exceeds 450 MW. Having two transmission lines out of service could result in the need for rolling outages and/or customer blackouts in areas served by Rector Substation. Planning criteria presently allows for planned or controlled load shedding under double contingency transmission line outage conditions. However, prudent utility practice also dictates that the utility be able to restore electrical service to customers as quickly as possible following a transmission line outage condition. In this case, SCE has no means of restoring electrical service to customers until at least one of these transmission lines is re-energized. Therefore, an extended transmission line double outage condition could result in conditions where a significant amount of customer demand traditionally served by Rector Substation cannot be served for a prolonged period of time. Without a new electrical infrastructure project, the magnitude and severity of such problems will increase with increases in customer demand served by Rector Substation.

Due to the anticipated overloading of transmission lines between the Big Creek Hydroelectric Project and Rector Substation discussed above, during both base-case and line loss scenarios, SCE is proposing the Proposed Project to increase transmission capacity between the Big Creek Hydroelectric Project and Rector Substation to mitigate overload conditions in order to maintain electrical system reliability in the Electrical Needs Area.

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[3]A single contingency outage under NERC/WECC criteria is an event resulting in the loss of a single element such as a generator, transmission circuit, or a transformer.

[4]The Big Creek Corridor currently operates with a Remedial Action Scheme (RAS) in place. The RAS is a program designed to address thermal overload and specific stability concerns associated with transmission line outages in the Big Creek Corridor. The RAS will automatically disengage selected turbines at the Big Creek Hydroelectric Project upon particular instances of 220 kV transmission line outage conditions within the Big Creek Corridor. This automatic disengagement will reduce electricity generation in order to prevent system stability problems or overloading of the remaining 220 kV transmission lines in the Big Creek Corridor.

[5]A double contingency outage under NERC/WECC criteria is an event(s) resulting in the loss of two or more (multiple) elements, such as the loss of two transmission circuits.

1.3 Project Objectives

SCE has defined the following objectives to meet the project purpose and need:

- Provide safe and reliable electrical service consistent with NERC/WECC and CAISO reliability criteria;
- Provide safe and reliable electrical service consistent with SCE's electrical system planning guidelines;
- Increase transmission capacity between the Big Creek Hydroelectric Project and Rector Substation to mitigate overload conditions;
- Reduce the need to interrupt customer electrical service under transmission line outage conditions;
- Minimize the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions;
- Minimize electrical service interruptions to customers by scheduling the construction of new facilities in an orderly and rational manner;
- Meet project need while minimizing environmental impact; and
- Meet project need and construction schedule in a cost effective manner.

These objectives guide SCE 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. Chapter 2, Project Alternatives, describes the alternatives development and analysis process and selection of the Proposed Project.

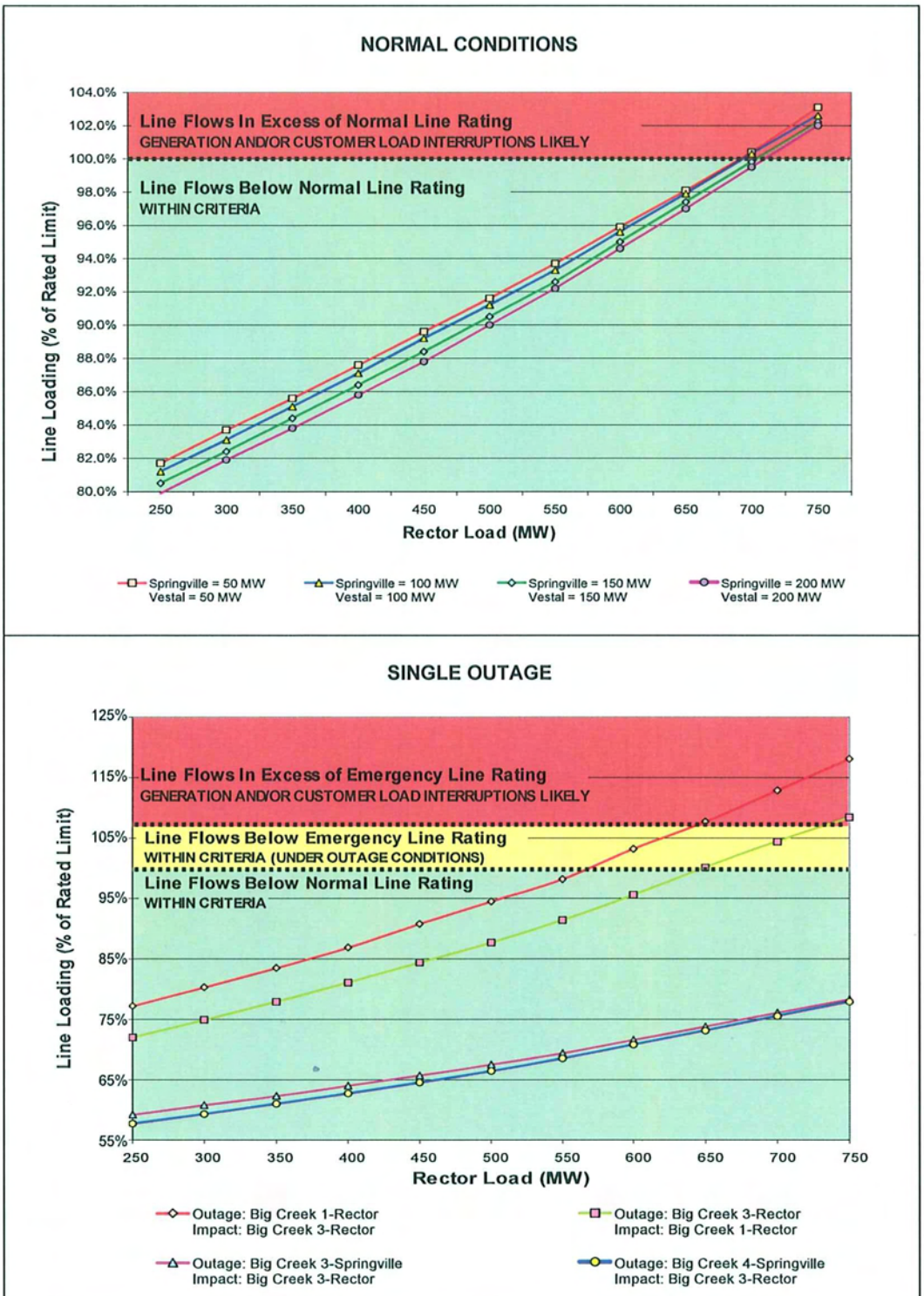

Figure 1.2
Big Creek 3 - Rector 220-kV Transmission Line Loading
(Source: San Joaquin Valley Comprehensive Study Report 4/29/2004)

Section 2.0
Project Alternatives

2.0 PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) and the CEQA Guidelines (Section 15126.6(a)) require that an environmental impact report describe a range of alternatives to a 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. This analysis must include evaluation of a "no project" alternative to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (No Project Alternative). In addition, the CEQA Guidelines (Section 15126.6(d)) require the evaluation of a reasonable range of alternatives to the project or its location to provide a comparative analysis for consideration by decision-makers.

SCE first evaluates whether the existing electrical infrastructure can be modified to meet the project objectives. If not, then SCE evaluates what new infrastructure is required and where it would be located in order to meet project objectives. The following sections describe the methodologies for screening system alternatives and site alternatives. Alternatives developed by these methodologies are then screened for their relative ability to meet the project objectives. This chapter concludes with a brief description of the alternatives retained for full analysis in the Proponent's Environmental Assessment (PEA).

2.1 System Alternatives

2.1.1 System Alternatives Evaluation Methodology

The development of the system alternatives consists of the four step process summarized below:

Step 1. Perform technical engineering analyses to determine whether the forecasted peak electrical demand can be accommodated by modifying the existing electrical infrastructure.

Step 2. If the forecasted electrical demand cannot be accommodated by modifying the existing electrical infrastructure, develop system alternatives that consist of feasible upgrades or additions to the existing electrical infrastructure.

Step 3. Evaluate each system alternative in accordance with the following criteria:

- The extent to which the alternative would substantially meet the proposed project objectives.
- The feasibility of the alternative considering capacity limits, ability to upgrade the system on existing utility property, and economic viability.

Step 4. Eliminate the alternative from further consideration if it is not feasible or does not meet project objectives. Otherwise, the alternative is retained for full analysis in the PEA.

If it is determined that a new electrical infrastructure upgrade or addition is required, then site location and routing alternatives are considered as described in Section 2.2, Route Alternatives.

2.1.2 System Alternatives Considered

As described in Appendix C, the San Joaquin Valley Comprehensive Study (2004 Comprehensive Study), multiple alternatives were considered to mitigate the anticipated overload conditions on the existing transmission lines between the Big Creek Hydroelectric Project and Rector Substation. These options included better utilization of existing transmission facilities, generation curtailment, load shedding, demand-side management, and construction of new transmission facilities. An explanation of those alternatives that were considered and dismissed is provided in the 2004 Comprehensive Study.

The alternatives that were determined to be viable options for mitigating the anticipated overload conditions on the existing transmission lines between the Big Creek Hydroelectric Project and Rector Substation are described below.

System Alternative A

System Alternative A (identified as a component of Alternative 2 in the 2004 Comprehensive Study) would involve the construction of a new double circuit 220 kV transmission line to loop the existing Big Creek 3-Springville 220 kV transmission line through Rector Substation. This would create the new Big Creek 3-Rector No. 2 220 kV transmission line and the Rector-Springville 220 kV transmission line. This system alternative would also include the installation of additional equipment at Rector Substation to accommodate the two new transmission lines, and installation of additional transmission line protection relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek Powerhouse No. 3. The effect of System Alternative A would be an increase in transmission capacity between the Big Creek Hydroelectric Project and Rector Substation. System Alternative A would also reduce customer service interruptions during transmission line outage conditions, and would decrease the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions.

System Alternative B

System Alternative B (identified as a component of Alternative 4 in the 2004 Comprehensive Study) would involve the construction of two new double circuit 220 kV transmission lines to loop the existing Big Creek 3-Springville 220 kV transmission line and the existing Big Creek 4-Springville 220 kV transmission line through Rector Substation. This would create the new Big Creek 3-Rector No. 2 220 kV transmission line, the new Big Creek 4-Rector 220 kV transmission line, the new Rector-Springville No. 1 220 kV transmission line, and the new Rector-Springville No. 2 220 kV transmission line. This system alternative would also include the installation of additional equipment at Rector Substation to accommodate the four new transmission lines, and the installation of additional transmission line protection relays at Rector Substation, Springville Substation, Vestal Substation, Big Creek Powerhouse No. 3, and Big Creek Powerhouse No. 4. The effect of System Alternative B would be an increase in transmission capacity between the Big Creek Hydroelectric Project and Rector Substation. System Alternative B would also reduce customer service interruptions during transmission line outage conditions, and would decrease the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions.

System Alternative C

System Alternative C (identified as a component of Alternative 1 in the 2004 Comprehensive Study) would involve the construction of a 220 kV series line reactor on the Big Creek 3-Rector 220 kV transmission line. The series line reactor is a device that is installed on a transmission line to increase the impedance of the transmission line. This increased impedance would attempt to balance electrical power flows on the two 220 kV transmission lines between the Big Creek Hydroelectric Project and Rector Substation, and would marginally increase capacity between Big Creek Hydroelectric Project and Rector Substation.

System Alternative D

System Alternative D (identified as a component of Alternative 3 in the 2004 Comprehensive Study) would involve the expansion of and modifications to the Springville 66 kV subtransmission system to serve current and future demand within the area currently served by Rector Substation. At a minimum, System Alternative D would require: (i) the installation of an additional 220/66 kV transformer at Springville Substation; (ii) the construction of two additional 66 kV double-circuit subtransmission lines, each approximately 40 miles long; and (iii) the reconductoring of approximately 140 miles of existing 66 kV subtransmission lines as well as the replacement of the majority of the associated 66 kV support structures. System Alternative D would effectuate a permanent load transfer from the Rector 66 kV subtransmission system to the Springville 66 kV subtransmission system. The effect of this load transfer would be to attempt to balance the electrical power flows on the eastern leg and western leg of the Big Creek Corridor. This would increase capacity between Big Creek Hydroelectric Project and the Electrical Needs Area, but the increase would be limited by the capability of 66 kV subtransmission facilities (e.g., conductor capacity, subtransmission system voltage constraints).

2004 Comprehensive Study Alternatives Eliminated From Further Consideration

In 2007, actual electrical demand served by Rector Substation surpassed the 2007 forecasted electrical demand levels projected in the 2004 Comprehensive Study. Subsequent forecasts have indicated that electrical demand will continue to exceed the 2004 Comprehensive Study forecasts. Actual and projected electrical demand has increased to such an extent that System Alternative C and System Alternative D are no longer able to provide a sufficient increase in capacity between the Big Creek Hydroelectric Project and the Electrical Needs Area and thus are no longer viable system alternatives to address the purpose and need for this project. In addition, since demand-side management is difficult to forecast and usually does not result in a significant load reduction in any one geographic area, this alternative was not considered as a viable option to eliminate the identified base case, single contingency and double contingency loading criteria violation. Therefore, System Alternative C, System Alternative D, and demand-side management are not given further consideration in this PEA.

2.1.3 System Alternatives Comparison

Both System Alternative A and System Alternative B would satisfy the purpose and need of this project. However, the scope of System Alternative B exceeds the scope of System Alternative A, and is in excess of what is required to satisfy the purpose and need for this project. System

Alternative B would result in additional environmental impacts and costs which cannot be justified. Consequently, System Alternative A best satisfies the project objectives.

No Project Alternative

CEQA requires consideration of the No Project Alternative. Under this alternative, no project would be built. As demand in the Electrical Needs Area continues to increase, the identified overload problems would be exacerbated to the point where safe and reliable electrical service would be compromised. As a result, the No Project Alternative does not satisfy any of the project objectives and is eliminated from further consideration in this PEA.

2.1.4 System Alternative Determination

SCE has determined that System Alternative A (San Joaquin Cross Valley Loop Transmission Project) is the preferred system alternative. Construction of the San Joaquin Cross Valley Loop Transmission Project would: provide safe and reliable electrical service consistent with NERC/WECC and CAISO reliability criteria; provide safe and reliable electrical service consistent with SCE's electrical system planning guidelines; increase transmission capacity between the Big Creek Hydroelectric Project and Rector Substation to mitigate overload conditions; reduce the need to interrupt customer electrical service under transmission line outage conditions; minimize the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions; minimize electrical service interruptions to customers by scheduling the construction of new facilities in an orderly and rational manner; meet project need while minimizing environmental impact; and meet project need and construction schedule in a cost effective manner.

2.2 Route Alternatives

SCE considered several different routing alternatives for System Alternative A. Each alternative began at Rector Substation and ended at various points along the existing Big Creek 3-Springville 220 kV transmission line north of Springville Substation which is located east of the community of Strathmore. The routing alternatives were determined using the evaluation methodology identified below.

Route Alternative Evaluation Methodology

To identify potential 220 kV transmission line route alternatives, SCE developed a screening criteria process that included the analysis of engineering, environmental, and land use factors. SCE considered the following factors, among others, in analyzing the route alternatives:

- Ability to meet basic objectives of the project;
- Ground topography and slope steepness;
- Line route distance;
- Impact to existing agricultural land use; and
- Avoidance of the Kaweah Oaks Preserve.

The routing options were identified as the Alternative 1, Alternative 2, Alternative 3, and Alternative 4 routes. These routes are shown on Figure 2.1, Route Alternatives, and are summarized below.

Alternative 1

The Alternative 1 route[6] is approximately 18.5 miles long and would utilize 1.1 miles of existing SCE right-of-way (ROW), and would require the acquisition of approximately 17.4 miles of new ROW. The route roughly parallels State Highway 198 and traverses an area primarily used for agriculture. The topography is generally flat until the route reaches the foothills to the Sierra Nevada Mountains at the easternmost 0.2 miles of the route.

The route begins by proceeding north from Rector Substation in existing SCE ROW for 1.1 miles. At mile 1.1 (approximately 2,400 feet south of State Highway 198), the route turns east to parallel Avenue 292 to Road 156 for approximately 1 mile. At Road 156, the route is directed north for approximately 0.1 miles, and then turns in an easterly direction for approximately 6.5 miles. At Mile 8.8, the route turns north at the former Visalia Electric Railroad bed. At Mile 8.9, the route turns east for approximately 0.7 miles to the base of Badger Hill. At the base of Badger Hill, the route turns north for approximately 3.2 miles. At Mile 12.9, the route turns east and parallels Cottage PO Drive/Avenue 320 until Mile 15.4. At Mile 15.4, the route turns southeast for 0.3 miles, and then turns northeast to parallel an existing SCE 66 kV subtransmission line. At Mile 16.0, the route turns east for 1 mile, then north for 0.4 miles, then east again for 1.1 miles until it reaches the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 58 miles south of Big Creek Powerhouse No. 3. The total length of the new Big Creek 3-Rector No. 2 220 kV transmission line utilizing the Alternative 1 route would be approximately 77 miles.

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[6]SCE has modified the Alternative 1 route shown to the public during open houses in November 2006 and January 2007. Please see Appendix E, Public Involvement, for more information.

Alternative 2

The Alternative 2 route is approximately 23.0 miles long and would utilize 10.8 miles of existing SCE ROW, and would require the acquisition of approximately 12.2 miles of new ROW. Outside of the existing SCE ROW, the route trends eastward for 4 miles on relatively flat terrain primarily used for orchards. The route then enters into an area with slightly hilly terrain that is primarily used for grazing. For the next 5 miles, the route follows the northern base of Colvin Mountain, traverses through the community of Elderwood, and enters the foothills of the Sierra Nevada Mountains. The route is located within the foothills for approximately 3 miles.

More specifically, the route proceeds north from Rector Substation for approximately 10.8 miles making use of existing transmission line ROW. At Mile 10.8, the route turns east for 3.5 miles. From Mile 14.3 to Mile 15.0, the route turns north to parallel Road 176 until Avenue 376. The route then proceeds east, paralleling Avenue 376 and then southeast through a saddle along the base of Colvin Mountain until Road 194. From Mile 17.3 to Mile 17.9, the route extends south and then southeast until Road 196. From there, the route extends east for approximately 1.2 miles and then south for approximately 0.6 miles. At Mile 19.7, the route turns east along the base of Lone Oak Mountain and continues east until it reaches the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 52 miles south of Big Creek Powerhouse No. 3. The total length of the new Big Creek 3-Rector No. 2 220 kV transmission line utilizing the Alternative 2 route would be approximately 75 miles.

Alternative 3

The Alternative 3 route[7] is approximately 24.3 miles long and would utilize 14.6 miles of existing SCE ROW, and would require the acquisition of approximately 9.7 miles of new ROW. Outside of existing SCE ROW, the route would be located within the foothills to the Sierra Nevada Mountains.

The route proceeds north from Rector Substation for approximately 14.6 miles making use of existing transmission line ROW. At Mile 14.6 (approximately 400 feet south of the Friant-Kern Canal), the route turns east on Stokes Mountain, leaving existing SCE ROW. The route crosses Stokes Mountain for approximately 3 miles. The route then descends from the Stokes Mountain ridgeline (1 mile) and turns northeast to parallel the Stokes Mountain/Stone Corral Canyon interface for approximately 4 miles. The route then crosses Boyd Drive and continues in the same northeasterly direction to crest the Goldstein Peak ridgeline at Mile 23. The route then descends into the Rattlesnake Creek Valley until it reaches the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 40 miles south of Big Creek Powerhouse No. 3. The total length of the new Big Creek 3-Rector No. 2 220 kV transmission line utilizing the Alternative 3 route would be approximately 64 miles.

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[7]The Alternative 3 route was developed after SCE's public involvement events in November 2006 and January 2007. Please see Appendix E, Public Involvement, for more information.

Figure 2.1
Alternative Route Map

Routes

- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3
- Alternative 4

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

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Alternative 4

The Alternative 4 route is approximately 18.8 miles long and would require the acquisition of new ROW for its entire length. Approximately 15 miles of the route would traverse through an area primarily developed for agriculture. Approximately 4 miles of the route would be located within the Yokohl Valley area of the foothills to the Sierra Nevada Mountains.

Beginning at Rector Substation, the route would proceed west for approximately 0.5 miles and then south for 2.3 miles. At Mile 2.8, the route turns east for 2.8 miles. From Mile 5.6 to Mile 9.6, the route turns southeast to Avenue 264 and then travels east, paralleling the north side of Avenue 264. From Mile 9.6 to Mile 11.8, the route turns slightly northeast then east to Road 216. Between Mile 11.8 and Mile 12.7, the route travels north paralleling Road 216, and then northeast paralleling Myer Road. From Mile 12.7 to Mile 14.7 the route travels east across farmland until Yokohl Drive. The route then turns to parallel Yokohl Drive and the base of Monument Hill to the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 64 miles south of Big Creek Powerhouse No. 3. The total length of the new Big Creek 3-Rector No. 2 220 kV transmission line utilizing the Alternative 4 route would be approximately 83 miles.

2.2.1 Route Recommendation

The total circuit length from Big Creek Hydroelectric Project to Rector Substation utilizing the proposed Big Creek 3-Rector No. 2 220 kV transmission line determines the effectiveness of the transmission line to meet two of the project objectives: increasing transmission line capacity between the Big Creek Hydroelectric Project and the existing Rector Substation; and minimizing the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions.

The Alternative 1, Alternative 2, and Alternative 3 routes result in similar transmission system electrical performance. Compared to these routes, the Alternative 4 route would result in greater transmission line length of the proposed Big Creek 3-Rector No. 2 220 kV transmission line, resulting in greater line impedance. This greater impedance decreases power flows on the transmission line and increases the need for reduced power generation at the Big Creek Hydroelectric Project during outage conditions. As a result, the Alternative 4 route is the least effective at meeting the project objectives of increasing transmission line capacity between the Big Creek Hydroelectric Project and the existing Rector Substation, and minimizing the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions. Consequently, the Alternative 4 route is eliminated from further consideration in this PEA, and the Alternative 1, Alternative 2, and Alternative 3 routes are evaluated as route alternatives for the San Joaquin Cross Valley Loop Project.

Although utilizing any one of the three routes (Alternative 1, Alternative 2, or Alternative 3) would meet the project's electric service objectives, Alternative 1 was selected as the preferred route. Alternative 1 requires the least amount of construction, requires the least amount of new access road construction, and has the least environmental impact.

The Alternative 1 route also minimizes the length of the segment that the existing 220 kV single circuit transmission towers be replaced with double circuit structures. The existing Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission lines are critical facilities that must be in service during periods of peak demand. Continuous outages on these transmission lines must occur only during the time frame of October 1 through April 1 (this outage window varies slightly from year to year, depending on the amount of snowmelt from the Sierra Nevada Mountains). The short distance of teardown and rebuild (1.1 miles) required for Alternative 1 lessens the time frame of a continuous line outage or the potential need for periodic transmission line outages and nighttime work during construction.

When compared to Alternative 1, Alternative 2 would require an additional 9.7 miles of existing single circuit tower replacement, lengthening the time frame of a continuous line outage that may conflict with the off peak season or the increased potential need of periodic line outages and nighttime work during construction. Alternative 2 would also require approximately 2 more miles new access roads for the transmission line, and has the potential to have significant impacts to environmental resources, such as sensitive biological species in vernal pools.

When compared to Alternative 1, Alternative 3 would require an additional 13.5 more miles of existing single circuit tower replacement, presenting the most significant challenges for project construction. It may not be feasible to remove and build the new segment of double circuit transmission line during the outage window, and other options for construction would have to be considered, such as temporarily re-routing the Big Creek 3-Rector 220 kV transmission line on a shoofly during construction of the new double circuit segment, or taking several small outages to work at night when electrical demand is lower.

In addition to the constructability issues, Alternative 3 would require approximately 7 more miles of new access roads for the route, and has a very strong potential to impact environmental resources, including sensitive biological and cultural resources. Additionally, a portion of Alternative 3 is located in an area that has mapped land stability issues. Accordingly, construction of Alternative 3 is least likely to meet the project objectives of meeting electrical and construction schedule in a cost effective manner.

2.2.2 Proposed Project

For the reasons discussed above, System Alternative A with Route Alternative 1 is the Proposed Project for SCE's San Joaquin Cross Valley Loop Project.

Section 3.0
Project Description

3.0 PROJECT DESCRIPTION

This chapter describes the construction and operation of the Proposed Project. The Proposed Project consists of the following activities:

- Replacement of approximately 1.1 miles of two sets of existing single circuit 220 kV transmission line segments with a single double circuit transmission line segment to be constructed with double circuit structures on the western side of SCE's existing ROW immediately north of Rector Substation. This would clear the eastern side of the existing SCE ROW in order to provide a location for the construction of the first 1.1 miles of the new transmission line described immediately below;

- Construction of a new, approximately 18.5 mile-long, double circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line circuit and the new Rector-Springville 220 kV transmission line circuit. The first 1.1 miles of the new double circuit transmission line would be on the eastern side of SCE's existing ROW adjacent to the new double circuit 1.1 mile line segment described above;

- Installation of electrical equipment and substation supporting structures for the transmission lines, protective relays, and a mechanical and electrical equipment room (MEER) at Rector Substation to accommodate the transmission lines; and

- Removal of wave traps and line tuners and installation of additional protective relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation.

The components of the Proposed Project are summarized in Table 3.1, Components of the Proposed Project and are described in more detail below. The transmission line route for the Proposed Project is presented in Appendix D, Proposed Project Road Story and Structure Inventory.

3.1 220 kV Transmission Lines

3.1.1 Replacement of Single Circuit 220 kV Transmission Towers with Double Circuit Structures

To provide a location for the construction of the new double circuit transmission line within existing SCE ROW north of Rector Substation, 26 single circuit towers supporting the Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission lines would be removed and the transmission lines would be relocated onto six new double circuit tubular poles and one new double circuit lattice tower on the western side of SCE's existing ROW. This configuration is shown on Figure 3.1, Replacement of Single Circuit 220 kV Structures with Double Circuit 220 kV Structures, and Figure 3.2, Turning Point 1.1 Miles North of Rector Substation Between SCE ROW And ROW To Be Acquired. The new poles and tower would support 1033.5 kcmil non-specular ACSR conductors, polymer insulators, and one OPGW for shielding/telecommunications. The design of the Proposed Project would allow for future

upgrade of the single 1033.5 kcmil ACSR conductor per phase with two 1033.5 kcmil ACSR conductors per phase or other conductors that would allow more capacity. This approach is consistent with prudent utility practice should additional electrical transfer capability be required in the future.

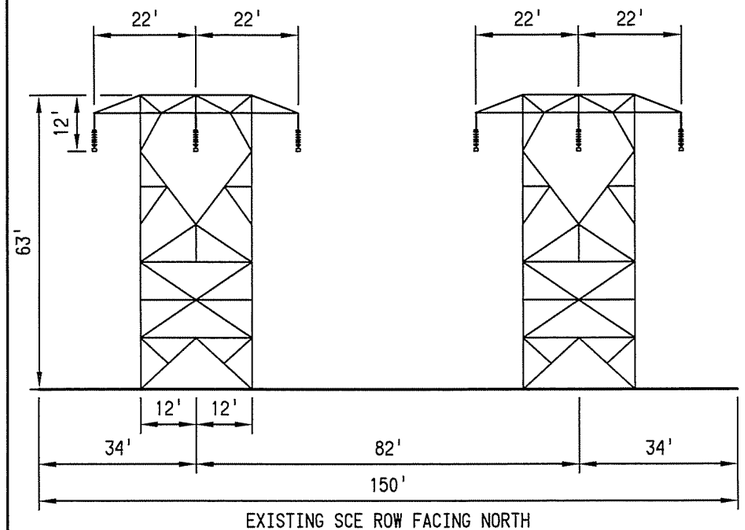
Table 3.1 Components of the Proposed Project

Facility	Description
Replacement of 1.1 miles of two sets of single circuit 220 kV transmission towers with new 220 kV double circuit structures	▪ Location: From Rector Substation to 1.1 miles north within SCE ROW ▪ Remove: Approximately 26 single circuit lattice towers, conductor, and assemblies ▪ Install: Approximately 6 double circuit tubular poles, 1 double circuit lattice tower, and replace or modify 2 single circuit lattice towers ▪ Conductors: Install two circuits of 1033.5 thousand circular mils (kcmil) non-specular aluminum conductor steel reinforced (ACSR); one conductor per phase, three phases per circuit ▪ Insulators: Polymer ▪ Shield wire/fiber optic: Install one optical ground wire (OPGW) for communication and shielding ▪ Structure heights: Approximately 120 to 160 feet above ground ▪ Span lengths: Between approximately 850 feet and 1,050 feet
Construction of new double circuit 220 kV transmission line from the Big Creek 3-Springville 220 kV transmission line into Rector Substation	▪ Location: Rector Substation to a connection point on the Big Creek 3-Springville 220 kV transmission line; 18.5 miles long (1.1 miles within existing SCE ROW, and 17.4 miles within new ROW to be acquired) ▪ Install: Approximately 96 double circuit tubular poles, 6 single-phase tubular poles (at the connection point), and 11 double circuit lattice steel towers (6 tubular poles and 1 lattice tower would be located within existing SCE ROW, and 90 tubular poles and 10 lattice towers would be located within new ROW to be acquired by SCE) ▪ Conductor: Install two circuits of 1033.5 kcmil non-specular ACSR conductor, one conductor per phase, three phases per circuit ▪ Insulators: Polymer ▪ Shield wire/fiber optic: Install one OPGW for communication and shielding ▪ Structure heights: Approximately 120 to 160 feet above ground ▪ Span lengths: Between approximately 400 feet and 1,200 feet ▪ New access: Approximately 8.0 miles new access roads and spur roads

Facility	Description
Substation modifications	▪ Rector Substation: Relocate terminations of two existing transmission lines to adjacent dead-end bays to accommodate connection of the new transmission lines to the existing 220 kV switchrack ▪ Rector Substation: Equip two 220 kV line positions with circuit breakers, disconnects, and switchracks to accommodate connection of the two new transmission lines to the existing 220 kV switchrack ▪ Rector Substation: Replace two existing circuit breakers ▪ Rector Substation: Install a Mechanical and Electrical Equipment Room (MEER) at Rector Substation to house protective relay equipment ▪ Rector Substation, Big Creek 3 Substation, Vestal Substation, and Springville Substation: Install upgraded protective relays and remove existing wave trap and line tuner.

EXISTING
BIG CREEK 3-RECTOR
220KV TRANSMISSION LINE

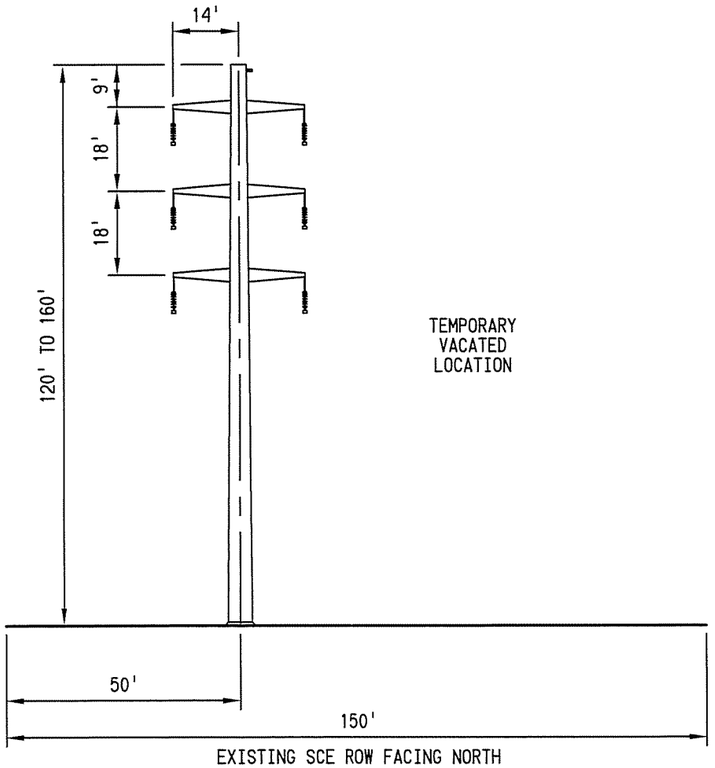
EXISTING
BIG CREEK 1-RECTOR
220KV TRANSMISSION LINE



NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

PRESENT ROW

CONSOLIDATED
BIG CREEK 3-RECTOR
AND BIG CREEK 1-
RECTOR 220KV
TRANSMISSION LINES



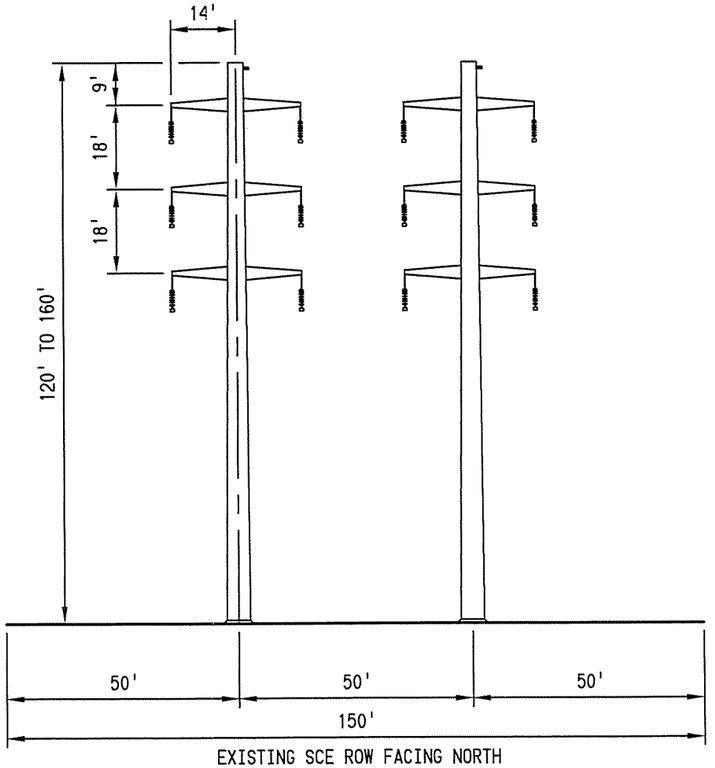
TEMPORARY
VACATED
LOCATION

NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

AFTER CONSOLIDATING THE
TWO SINGLE CIRCUIT STRUCTURES
TO ONE DOUBLE CIRCUIT STRUCTURE

CONSOLIDATED
BIG CREEK 3-RECTOR
AND BIG CREEK 1-
RECTOR 220KV
TRANSMISSION LINES

NEW
BIG CREEK 3-RECTOR
NO. 2 AND RECTOR-
SPRINGVILLE 220KV
TRANSMISSION LINES



NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

FINAL ROW CONFIGURATION
WITH CONSOLIDATING EXISTING
LINES AND ADDING NEW LINES

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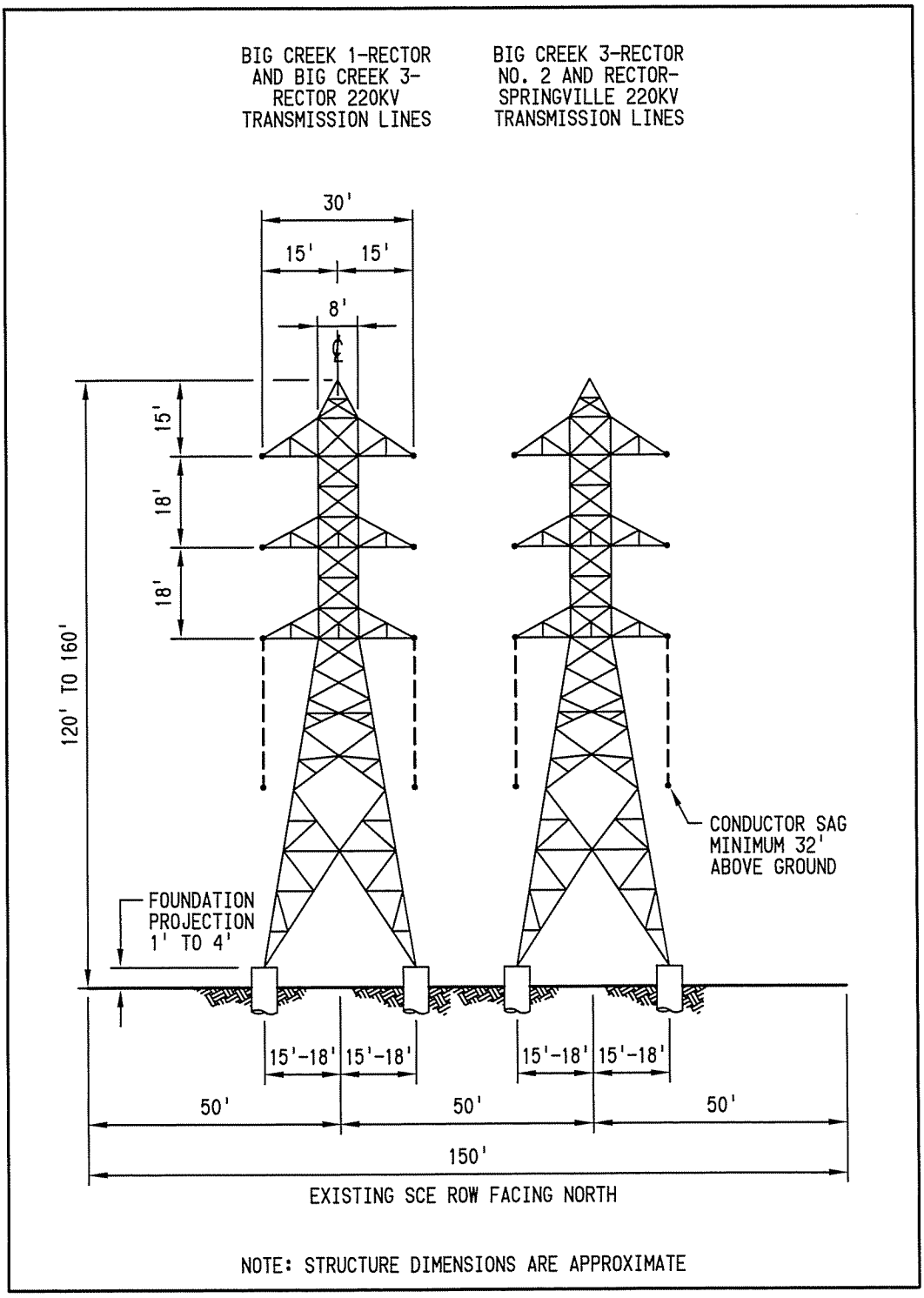
CROSSVALLEYTLPROJFIG3.1.DWG

FIGURE 3.1

REPLACEMENT OF SINGLE CIRCUIT 220KV STRUCTURES
WITH DOUBLE CIRCUIT 220KV STRUCTURES



NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

* REVISE ON AUTOCAD SYSTEM ONLY *

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CROSSVALLEYTLPROJFIG3.2.DWG

FIGURE 3.2

1.1 MILES NORTH OF RECTOR SUBSTATION TURNING POINT BETWEEN SCE ROW AND ROW TO BE ACQUIRED

3.1.2 New Double Circuit 220 kV Transmission Line

The new double circuit 220 kV transmission line created by construction of the Proposed Project would be accomplished by (1) creating a connection point on the existing Big Creek 3-Springville 220 kV transmission line by severing the existing conductor 58 miles south of Big Creek Powerhouse No. 3; (2) adding a 220 kV transmission line between the connection point and Rector Substation (creating the Big Creek 3-Rector No. 2 220 kV transmission line); and (3) adding a second 220 kV transmission line on the same double circuit structures as the Big Creek 3-Rector No. 2 220 kV transmission line between Rector Substation and the connection point (creating the Rector-Springville 220 kV transmission line). Approximately 1.1 miles of the new double circuit 220 kV transmission line would be in existing SCE ROW, and approximately 17.4 miles of the new double circuit transmission line would be in ROW to be acquired by SCE.

The initial 1.1 miles of the new double circuit transmission line would extend north from SCE's Rector Substation in existing SCE ROW on double circuit structures. These new double circuit structures would be adjacent to the Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission lines that would have been combined onto a set of double circuit structures for the above mentioned replacement portion of the project. At mile 1.1 (approximately 2,400 feet south of Highway 198), the new double circuit 220 kV transmission line would turn east, leaving the existing SCE ROW.

At Mile 1.1 (approximately 2,400 feet south of State Highway 198), the new double circuit 220 kV transmission line would be directed east for approximately 1 mile to parallel Avenue 292 to Road 156. At Road 156, the new double circuit 220 kV transmission line would be directed north for approximately 0.1 miles, and then would turn in an easterly direction for approximately 6.5 miles. At Mile 8.8, the new double circuit 220 kV transmission line would turn north at the former Visalia Electric Railroad bed. At Mile 8.9, the new double circuit 220 kV transmission line would turn east for approximately 0.7 miles to the base of Badger Hill. At the base of Badger Hill, the new double circuit 220 kV transmission line would turn north for approximately 3.2 miles. At Mile 12.9, the new double circuit 220 kV transmission line would turn east to parallel Cottage PO Drive/Avenue 320 until Mile 15.4. At Mile 15.4, the new double circuit 220 kV transmission line would turn southeast for 0.3 miles, and then would turn northeast to parallel an existing SCE 66 kV subtransmission line. At Mile 16.0, the new double circuit 220 kV transmission line would turn east for 1 mile, then north for 0.4 miles, then east again for 1.1 miles until it reaches the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 58 miles south of Big Creek Powerhouse No. 3. The proposed route for the new double circuit 220 kV transmission line can be found in Appendix D, Proposed Project Road Story and Structure Inventory.

New Double Circuit 220 kV Transmission Line Components

Construction of the 18.5-mile, double circuit 220 kV transmission line would require approximately 11 double circuit lattice towers, 96 double circuit tubular poles, one of which would be located inside Rector Substation, and six single phase tubular poles. Six tubular poles, one lattice tower, and six single phase tubular poles (at the connection point) would be located within existing SCE ROW, and 90 tubular poles and 10 lattice towers would be located within new ROW to be acquired by SCE.

Tubular poles would be either tubular steel or a concrete/steel hybrid. Tubular steel poles would be all steel structures with a dulled galvanized finish. If some sections are too large to be galvanized, a grey paint or other protective coating would be used. Concrete/steel hybrid poles have a lower tubular concrete base with a dulled galvanized steel upper section.

The lattice towers would be used at locations requiring additional structure strength, such as in areas requiring long conductor spans and at turning points. The lattice towers would utilize dull galvanized steel finish.

Based on preliminary designs, the double circuit transmission line structures would range in height from approximately 120 to 160 feet, with typical span lengths between structures ranging between 840 to 1,200 feet. See Figure 3.3, New Double Circuit 220 kV Transmission Line Structures, for a depiction of pole and tower designs proposed to be used for the Proposed Project. The information presented in this section is based on preliminary engineering design, and refinement during final engineering design may result in components that are modified from the descriptions provided in this PEA.

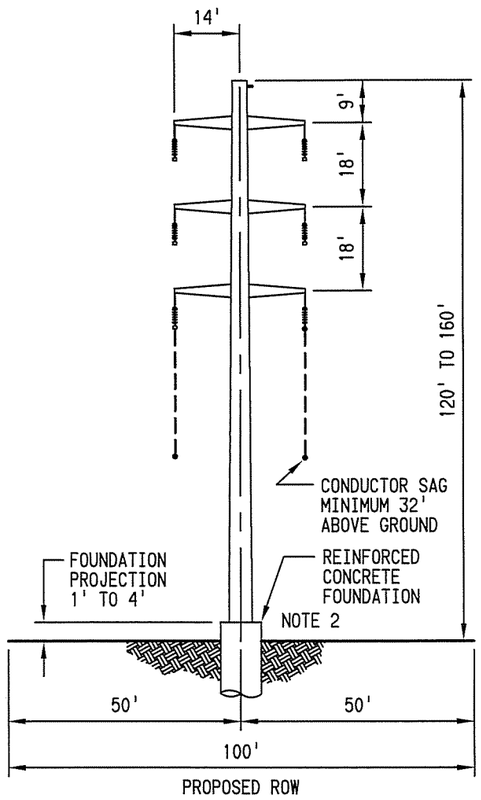
Table D.1 in Appendix D, Proposed Project Road Story and Structure Inventory, provides a preliminary list of the height and type of the double circuit structures, and the span lengths between each.

The poles and towers used for the new double circuit 220 kV transmission line would support 1033.5 kcmil non-specular ACSR conductors, polymer insulators, and one OPGW for shielding/telecommunications. The design of the Proposed Project would allow for future upgrade of the single 1033.5 kcmil ACSR conductor per phase with two 1033.5 kcmil ACSR conductors per phase or other conductors that would allow more capacity. This approach is consistent with prudent utility practice should additional electrical transfer capability be required in the future. Drawings of these features can be found on Figure 3.3, New Double Circuit 220 kV Transmission Line Structures.

3.2 Substation Modifications

The Proposed Project would require modifications at the existing Springville, Rector, Big Creek 3, and Vestal Substations. All substation work would occur on previously disturbed areas within the existing fenceline of the substations. Rector Substation is located in Tulare County, approximately one-quarter mile south and east of the City of Visalia. Springville Substation is located approximately 8.5 miles east of the community of Strathmore in Tulare County, Big Creek 3 is approximately 19 miles southwest of the town of Big Creek in Fresno County, and Vestal Substation is approximately 3.5 miles northeast of the community of Richgrove, in Tulare County.

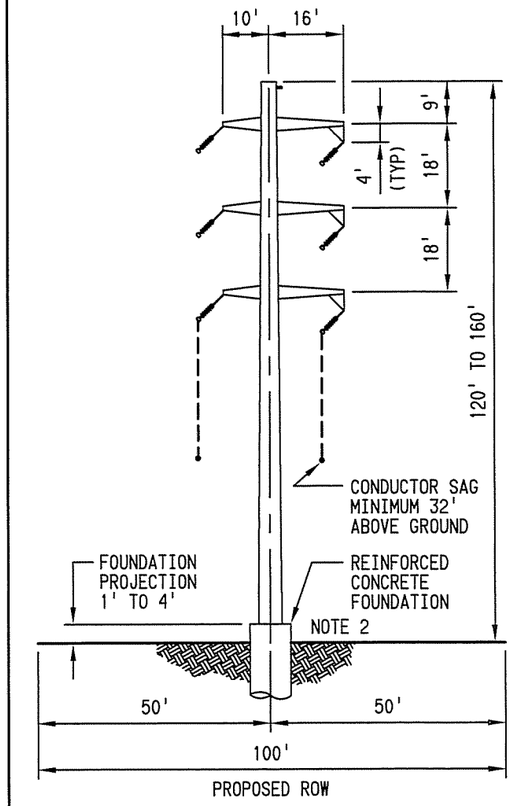
TYPICALLY USED FOR SMALL OR NO LINE ANGLES



NOTES:
1. STRUCTURE DIMENSIONS ARE APPROXIMATE
2. NO PROJECTION FOR COMPOSITE STRUCTURE

TYPICAL TUBULAR STEEL POLE
AND COMPOSITE POLE

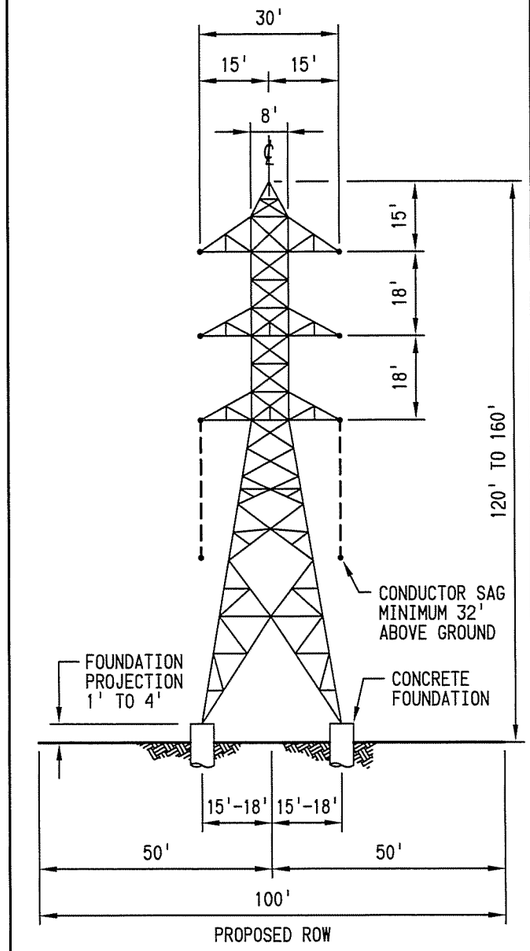
TYPICALLY USED FOR LARGE LINE ANGLES



NOTES:
1. STRUCTURE DIMENSIONS ARE APPROXIMATE
2. NO PROJECTION FOR COMPOSITE STRUCTURE

TYPICAL TUBULAR POLE

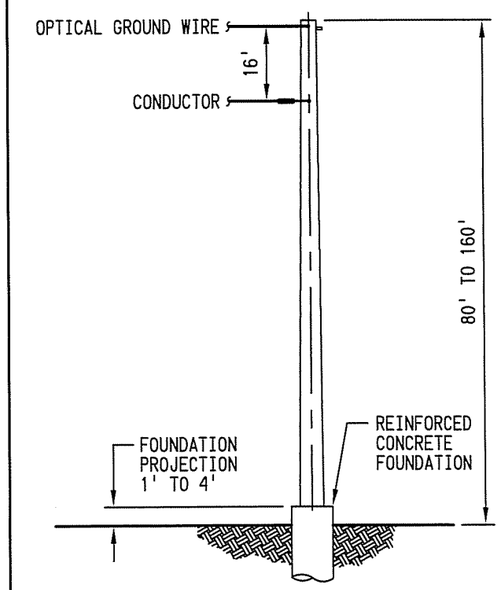
TYPICALLY USED FOR TURNING POINTS AND AREAS WHERE EXTRA STRENGTH IS NEEDED



NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

TYPICAL LATTICE TOWER

TYPICALLY USED AT CONNECTION POINTS



NOTE: STRUCTURE DIMENSIONS ARE APPROXIMATE

TYPICAL SINGLE PHASE POLE
ONE POLE USED PER PHASE

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CROSSVALLEYTLPROJFIG3.3.DWG

FIGURE 3.3

STRUCTURES FOR NEW DOUBLE CIRCUIT 220KV TRANSMISSION LINE SAN JOAQUIN CROSS VALLEY LOOP PROJECT

Work at Rector Substation would include relocating existing transmission lines to adjacent dead-end bays, equipping two 220 kV transmission line positions on the existing 220 kV switchrack with conductor spans, jumpers, connectors, and support structures to accommodate the connection of the new transmission lines. Two new circuit breakers would be required and two existing circuit breakers at Rector Substation would be replaced with new ones.

A new Mechanical and Electrical Equipment Room (MEER) would be installed at Rector Substation to house relay equipment. New underground conduit would be installed between the switchrack and the MEER, and the MEER and the main office building at Rector Substation. The MEER is a prefabricated steel shed, approximately 12 feet tall and 36 feet long by 20 feet wide. SCE typically purchases MEERs that are light tan with a dark brown trim. The MEER would have a light above the door that would be manually switched on and off, and would be shielded to reduce glare.

Work at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation would consist of the installation of new cable and conduit between the buses and the substation MEER, and new protective relays would be installed within each MEER. In addition, a wave trap and line tuner would be removed from each of the abovementioned substations.

3.3 Construction Plan

Construction activities would include the replacement of approximately 1.1 miles of two sets of existing single circuit 220 kV transmission line segments with a single double circuit transmission line segment, construction of a new double circuit 220 kV transmission line, the substation modifications, as well as construction support activities, such as establishing material staging yards, and the development of access roads and spur roads to reach each tower, tubular pole, and wire stringing site. The following sections provide more detailed information about the construction tasks that would be associated with the San Joaquin Cross Valley Loop Project.

Because construction of the Proposed Project would disturb a surface area greater than one acre, 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), detailing project information, monitoring and reporting procedures, and Best Management Practices, such as dewatering procedures, storm water runoff quality control measures, spill prevention and control, and concrete waste management. The SWPPP would be based on final engineering design and would include all project components.

During the access road construction, spur road construction, grading, and foundation work activities, blasting may be required in some locations where rock is present. Prior to blasting, a person licensed by the Federal Bureau of Alcohol, Tobacco, and Firearms would assess the area, make any required site measurements (e.g., distance to utilities or houses), and engineer the blast for a safe and effective explosion. Pre-blast notifications would be made to the local fire department, residents, utilities, and others potentially affected by blasting operations. Once the notifications are complete, the holes would be drilled and the explosive charges loaded into the holes. If the blast is near sensitive receptors (houses, power lines, roads), special protective measures (e.g., gravel or blast mats) would be installed to control flying rock from the blast site.

In addition, the area would be secured to avoid inadvertent entry by the public or other personnel. After the area is secured, the appropriate pre-blast warning signals would be given and the blast detonated. After detonation, a post-blast safety inspection would be conducted to ensure that the blast completely discharged and personnel may enter safely to excavate the blasted material.

Temporary road closures, traffic detours, and posted notices and signs would be used to restrict public access to construction areas.

Material Staging Yards. Construction of the Proposed Project would require temporary staging and storage areas to store materials and equipment during the construction process. Materials and equipment typically staged at these yards would include, but would not be limited to, tower steel bundles, tubular poles, palletized bolts, rebar, conductor, OPGW, insulators and hardware, heavy equipment, light trucks, construction trailers with electrical and communications connections, and portable sanitation facilities. Material that would be removed from the existing transmission lines such as conductor, steel, concrete, and other debris, would be temporarily stored in staging yards as the material awaits salvage, recycling, or disposal. Typically, crew vehicles would be parked at the Material Staging Yards.

To the extent feasible, SCE would utilize existing commercial facilities near the Proposed Project as material staging yards. All proposed material staging yards would be required to undergo an environmental review prior to any ground disturbing activity taking place. All materials associated with construction efforts would be delivered by truck to established material staging yards. Delivery activities requiring major street use would be scheduled to occur during off-peak traffic hours to the extent feasible.

It is anticipated that at least two material staging yards, up to 5 acres in size, would be required during construction. The yards would be surfaced with crushed rock if existing surfacing is not compatible with storage and equipment requirements, and would be fenced and screened from view from adjacent residences or businesses. 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.

Access Roads and Spur Roads. Existing public roads and private ranching roads would be utilized as access roads to the extent feasible. Access roads are through-roads that run between tower sites along a ROW and serve as the main transportation route along a transmission line ROW. Spur roads are roads that lead from line access roads and terminate at one or more transmission structure sites.

The Proposed Project requires access road/spur road construction on both the existing ROW and the ROW to be acquired. Where construction would take place on the existing ROW, it is assumed that most of the existing access roads as well as spur roads would be used, however modifications to the locations of access and spur roads would be required based on new structure locations. It is also assumed that rehabilitation work would be necessary in some locations for the existing roads to support construction activities.

All access road and spur road alignments would first be cleared and grubbed of vegetation. Roads would be 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. Each graded road would have a minimum drivable width of 16 feet and 2 feet of berm on each side, producing 20 foot wide access roads and spur roads.

There are no drainage structures or wet crossings expected to be installed in access roads for the Proposed Project; however, this would be verified in the field prior to construction. If required, SCE would install drainage structures which may include water bars, overside drains, culverts, and other engineered structures.

It is anticipated that most of the access roads and spur roads constructed for the Proposed Project would be left in place following construction, and maintained to facilitate future access for operations and maintenance purposes. Gates would be installed where required at fenced property lines to restrict general and recreational vehicular access to access roads.

Existing access roads and preliminary locations of new access roads and spur roads for the Proposed Project are shown in Appendix D, Proposed Project Road Story and Structure Inventory.

3.3.1 Existing 220 kV Transmission Line Replacement

Replacement of 1.1 miles of the existing single circuit 220 kV transmission line segments would require those transmission lines be taken out of service. The outages would vary, depending upon seasonal timing and transmission system load requirements.

During the outage, the Big Creek 3-Rector 220 kV transmission line would be de-energized, and its single circuit structures would be removed between Rector Substation and Mile 1.1. New double circuit structures would be installed to replace the removed single circuit structures. Thereafter, the Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission line circuits would be added to those new double circuit structures, idling a 1.1 mile portion of the former Big Creek 1-Rector 220 kV transmission line. The circuits would then be returned to service. The former, now idle, portion Big Creek 1-Rector 220 kV transmission line structures would then be removed, creating a vacant location that would later accommodate the new double circuit transmission line.

The telecommunications facilities that are part of the Big Creek 3-Rector 220 kV transmission line may need to be in service during the outage of the line for construction of the Proposed Project. If this is the case, the telecommunications line would be supported on wood poles that would be installed within existing SCE ROW for the 1.1 mile portion of the 220 kV transmission line replacement. After the Big Creek 3-Rector and Big Creek 1-Rector 220 kV transmission line double circuit structures are installed, this telecommunications cable would be transferred on to the new structures, and the wood poles would be removed and returned to the Material Staging Yard for reuse or disposal, as described below for the use of guard structures.

Details of the existing 220 kV transmission line replacement portion of the Proposed Project are presented below.

Removal of Existing Towers. Transmission line equipment to be removed includes 26 existing 220 kV lattice steel towers and associated hardware (i.e., insulators, vibration dampeners, suspension clamps, ground wire clamps, shackles, links, nuts, bolts, washers, cotter pins, insulator weights, and bond wires), as well as the transmission line primary conductors, ground wire and footings.

To remove the existing conductors, wire-stringing locations would be sited along the existing transmission line corridor to place pull and tensioning equipment (wire stringing locations are described in more detail below). After the wire pulling equipment is in place, the old conductor wire would be wound onto "breakaway" reels as it is removed. The removal of existing conductors would involve the use of guard structures to prevent the conductor from falling below a conventional stringing height. The use of guard structures is detailed in a separate section below. Preliminary locations for wire stringing and guard structures are shown in Appendix D, Proposed Project Road Story and Structure Inventory.

A 3/8-inch pulling cable would replace the old conductor as it is pulled out, thereby allowing complete control of the conductor during its removal. The 3/8-inch line would then be removed under controlled conditions to minimize ground disturbance, and all wire-pulling equipment would be removed. The conductor would be transported to a material staging yard where it would be prepared for recycling. Waste disposal and recycling activities that would be associated with removal of the single circuit transmission lines are discussed in Section 3.7, Waste Management.

For each tower to be removed, an approximately 75-foot by 150-foot area would be cleared of vegetation and graded if the ground is not level. The crane would be positioned approximately 60 feet from the tower location to dismantle the tower. After the tower is dismantled, the existing tower footing would be removed to a depth of at least 3 feet. Holes would be filled and compacted, and then the area would be smoothed to match surrounding grade.

3.3.2 New Double Circuit 220 kV Transmission Line Construction

Site Preparation. A construction setup area would be cleared at each structure site. These construction setup areas would be at least 100-foot by 100-foot in size, but may be up to 200-foot by 200-foot in size. SCE would make every reasonable effort to minimize the size of these construction setup areas. These construction setup areas would be cleared and grubbed of vegetation, and graded such that water would drain in the direction of the natural drainage. The grading would be done in a manner to ensure that no ponding would occur and no erosive water flow would cause damage to the new tower footings. The graded pad would be compacted and would be capable of supporting heavy vehicles. At some sites, soil may be imported as necessary to raise the elevation of the structure pads. Where site conditions do not provide a stable ground surface to safely work utilizing existing compacted soil, crushed rock surfacing may be added. Material removed during the grading process would be spread over existing access roads and work pads as appropriate, or disposed of off-site in accordance with all applicable laws.

In addition, there is a 2,800 square foot residence located within the ROW to be acquired. The property was in escrow in February 2008, and SCE met with the buyer and seller to discuss its future plans in the area. Prior to demolition, an asbestos inspection of the residence would occur

by a trained professional certified by CalOSHA, and the inspector would consult with the San Joaquin Valley Air Pollution Control District Asbestos Coordinator.

Foundations. The design for the foundations for each structure would vary, based the type of structure used at each specific location. There are two basic pole structure options: a concrete/steel hybrid (concrete base) option and a pole that would be bolted on to an cast in place reinforced concrete foundation. Depending upon soil conditions, grounding may be required at the base of some structures. The grounding mechanism would typically be comprised of a metallic wire buried beneath the surface 1 to 3 feet deep, and extend between the foundation and a point approximately 50 to 100 feet from the foundation.

The concrete/steel hybrid tubular poles would be direct buried. In order to install these poles, a hole 6 to 9 feet in diameter and 20 to 60 feet deep would be excavated for each pole (up to 145 cubic yards of soil). The excavated material would either be used by the property owner or disposed of off site. Final engineering design would determine appropriate backfill material to fill the annular space around the buried pole section. Typically, a granular backfill or slurry backfill material is used, and would be delivered to the site (up to 115 cubic yards of backfill).

The tubular steel poles and lattice towers would be installed with reinforced concrete foundations. The concrete foundation would be completed using standard "poured-in-place" augered excavation techniques. Foundations that extend into groundwater would require that a mud slurry 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 is typically collected in a pit adjacent to the foundation, and then pumped out of the pit to reused or discarded.

At the time of construction, foundation elevations would be established, rebar cages set, anchor bolts placed, and concrete placed. Survey positioning would be verified. Concrete samples would be drawn at time of pour and tested to ensure engineered strengths were achieved. This strength is verified by controlled testing of sampled concrete. Once this strength has been achieved, crews would be permitted to commence erection of steel. Depending on the footing type and depth, typically between 15 to 100 cubic yards of concrete would be delivered to each structure site to install footings.

For tubular steel poles, a boring up to approximately 20 to 60 feet deep and 6 to 10 feet in diameter would be made (up to 175 cubic yards of soil would be excavated), and a reinforcing steel cage with anchor bolts would be installed in the boring. The steel cages would be placed in the boring and concrete would be poured into each hole. Depending on site-specific geotechnical and hydrological conditions, the concrete foundation would be installed to extend aboveground a specific height. Most tubular steel pole foundations would typically extend aboveground approximately 1 to 4 feet.

Each lattice tower requires four foundations. An auger would be used to excavate holes that would typically be 3 to 6 feet in diameter and 15 to 30 feet deep (up to 130 cubic yards of soil would be excavated). Concrete reinforcing and stub angles would be set into the hole and concrete poured to set the foundation. Similar to the tubular steel pole footings, the site-specific geotechnical and hydrological conditions would determine how high aboveground the footings

would extend. Most lattice steel tower foundations would typically extend above ground approximately 1 to 4 feet.

Structure Assembly. Tubular poles would be delivered in two or more sections for each structure site via flatbed truck and assembled on-site using a crane. Each pole shaft section is joined to the section below via lap splice joints, which are pulled together with hydraulic jacking devices. After assembly, a minimum 80-ton crane would be used to lift and set the pole sections into place.

Towers would be assembled at laydown areas at each site, and then erected and bolted to the foundations. Tower assembly would begin with the hauling and stacking of bundles of steel at each tower location per engineering drawing requirements. This requires use of several tractors with 40-foot floats and an onsite loader. After steel is delivered and stacked, crews would proceed with assembly of leg extensions, body panels, boxed sections and the bridges. The steel work would be completed by a combined erection and torquing crew with a lattice boom crane. The construction crew may opt at this time to install insulators and wire rollers (travelers) that would later facilitate conductor installation.

Guard Structures. Guard structures may be installed at transportation, flood control, and utility crossings. Guard structures are temporary facilities that are installed to prevent the movement of a conductor should it momentarily drop below a conventional stringing height. Temporary netting could also be installed to protect some types of under-built infrastructure, such as freeways, railroads, and electrical distribution lines. Typical guard structures are 60 to 80 foot tall standard wood poles, and depending on the horizontal extent of all conductor being installed across the feature, 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 use of 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 protect public safety during conductor and shield wire 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.

Alternate (non-intrusive) methods for preventing conductor from falling beneath a specified height across a highway include:

- Detour all traffic off a highway at the crossing position;
- Implement a controlled continuous traffic break while stringing operations are performed; or
- Strategically place special line trucks with extension booms on the highway deck.

Based on a review of the number of road and utility crossings that would be needed along the currently proposed route, SCE has estimated that approximately 40 locations require the installation of guard structures to facilitate conductor installation. Please note that these estimates

are preliminary as the types of guard structures that would be required for crossings and the number of crossings necessary would be field verified upon completion of final design.

Conductor and Shield Wire Stringing. Conductor and shield wire stringing is an activity that includes the installation of primary conductor and shield wire (OPGW), vibration dampeners, weights, and suspension and dead-end hardware assemblies. These wire-stringing activities would be conducted in accordance with SCE specifications, which are similar to process methods detailed in IEEE Standard 524-1992, Guide to the Installation of Overhead Transmission Line Conductors. The wire pulling, tensioning, and splicing set-up locations require level areas to allow for maneuvering of the equipment. When possible, these locations would be located on existing level areas and existing roads to minimize the need for grading and cleanup. Circuit outages, pulling times, and safety protocols needed for wire stringing would be determined prior to work to ensure that safe and quick installation of wire is accomplished.

Conductor stringing operations begin with the installation of travelers, or rollers, on the bottom of each of the insulators using helicopters or aerial manlifts (bucket trucks). The rollers allow the conductor to be pulled through each structure until the entire line is ready to be pulled to the final tension position. Following installation of the rollers, a sock line (a small cable used to pull the conductor) would be pulled onto the rollers from structure to structure using helicopters or aerial manlifts traveling along the ROW. Once the sock line is in place, it would be attached to the conductor and used to pull, or string, the conductor into place on the rollers using conventional tractor-trailer pulling equipment at pull and tension sites along the line. The conductor would be pulled through each structure under a controlled tension to keep it elevated and away from obstacles, thereby preventing third-party damage to the line and protecting the public. Conductor and shield wire installation may include the use of guard structures, as described above.

The helicopter operation areas would be limited to helicopter staging areas such as Woodlake Airport or Rector Substation and possibly other positions near construction areas that have previously been used for helicopter activities and are considered safe locations for landing. Final siting of staging areas for the Proposed Project would be conducted with the input of the helicopter contractor, and affected private landowners and land management agencies. During helicopter operations, public access to defined areas would be restricted.

After the conductor is strung through the rollers located on each tower, the temporary pulling splices would then be removed and permanent splices would be installed. If the permanent splice could not be made at one of the pulling or tensioning sites being used, a temporary splicing location would be utilized (and may include construction of a temporary road, as described above).

Typically, wire pulls occur every 15,000 feet on flat terrain or less in rugged terrain. Wire splices typically occur every 7,500 feet on flat terrain or less in rugged terrain. For stringing equipment that cannot be positioned at either side of a dead-end transmission tower, field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension. The preliminary pulling, tensioning, and splicing locations are shown in Appendix D, Proposed Project Road Story and Structure Inventory.

After the conductor is pulled into place, the sags between the structures would be adjusted to a pre-calculated level. The conductor would be installed with a minimum ground clearance of 32 feet. The conductor would then be clipped into the end of each insulator, the rollers removed, and vibration dampers and other accessories installed.

For stringing operations, it would generally take approximately one-half day to pull three phases of conductor for approximately 9,000 feet of transmission line.

OPGW would be installed on the new double circuit transmission lines for communication and shielding. The OPGW would be installed in the same manner as the conductor. Travelers, or rollers, would be installed at the position of the ground wire, and a sock line would be installed through all of the rollers. The sock line would then be used to pull the OPGW into place, all the while controlling tension and speed to prevent interfering with any outside obstructions. Splicing the OPGW between reels would be necessary, and would occur approximately one per mile. Fiber optic splice enclosures would be installed aboveground on the transmission line structures. The OPGW would be routed down the structure to the splice box (approximately 3 foot by 3 foot by 1 foot metal enclosure) where the optical fibers would be spliced. Spare OPGW is typically coiled within the enclosure. Splicing of the fibers would occur on the ground adjacent to the structure, and the enclosure with the completed splices brought back up onto the structure for final installation.

Housekeeping and Site Cleanup. During construction, water trucks may be used to minimize the quantity of airborne dust created by construction activities. Any damage to existing roads as a result of construction would be repaired once construction is complete.

SCE would restore all areas that were temporarily disturbed by construction of the Proposed Project (including material staging yards, pull and tension sites, and splicing sites) to as close to preconstruction conditions as possible following the completion of construction. Restoration would include grading to original contours and reseeding where appropriate. 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.

3.3.3 Substation Modifications

Construction activities at Rector Substation would include both electrical work and civil work. Cranes and other truck-mounted equipment would be used to install the new electrical equipment, conductor spans, jumpers, connectors, and support structures. Foundations for the MEER and breakers would be excavated with a backhoe or auger in a process similar to that described above for overhead structure installation.

The installation of new cable and conduit and the removal of wave trap and line tuners at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation would require cranes and other truck-mounted equipment. The installation of relay protection would consist of a crew driving to the site via existing paved roads. All substation modifications would occur within the existing developed property of each substation.

3.4 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 for cases of emergency.

The 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.

3.5 Waste Management

Construction of the Proposed Project would result in the generation of various waste materials that can be recycled and salvaged. These items would be gathered by construction crews and separated into roll-off boxes. Salvageable items (i.e., conductor, steel, and hardware) would be transported to the material staging yards, sorted, and baled, and then sold through available markets. Items that may be recycled include the steel from towers (i.e., towers, nuts, bolts, and washers), the conductor wire and the hardware (i.e., shackles, clevises, yoke plates, links, or other connectors used to support conductor). The wood poles used for guard structures and possible telecommunications support would be returned to the Material Staging Yard, and depending on the condition of each pole, it would be reused, 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.

Construction of the Proposed Project would also generate waste materials that cannot be reused or recycled (i.e., wood, soil, vegetation, and sanitation waste); local waste management facilities would be used for the disposal of these types of construction waste. The disposal of any hazardous waste would be conducted at an appropriate facility.

3.6 Geotechnical Studies

Prior to construction, a series of geotechnical investigations would be initiated to compile information required to complete final engineering. The results of these studies would provide a description of the regional surface, subsurface, and geological conditions, and would be used to determine the final location and construction methods for pole and tower footings. Soil borings advanced for geotechnical purposes would typically occur every mile and at angle points.

Towers, poles, and access roads located near the connection point in the foothills of the Sierra Nevada (between Mile 18.3 and Mile 18.5 of the route) may be subject to site-specific erosion conditions, ranging in severity from surface soil scour to landslide. Geotechnical engineers would evaluate and analyze specific site and soil conditions to make recommendations for the final engineering design. This evaluation would include a determination of slope stability and soil drainage capability, and recommendations for soil stabilization measures, if applicable.

Although there is a very low potential for contaminated soil to be encountered in the areas used by the Proposed Project, the geotechnical investigation would also collect and analyze soil samples for common contaminants (including pesticides) prior to construction. If chemicals are detected in the soil samples at concentrations above action levels, SCE would decide whether to work with the property owner to remove the hazardous waste, or re-route the transmission line or access road to the extent necessary to avoid contaminated soil.

3.7 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 proposed transmission line ROW, 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 mitigation measures 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 biological resources in the vicinity of the Proposed Project are presented in more detail in Section 4.4, Biological Resources. Resources that would be of special concern include:

- Burrowing owl. The preconstruction surveys for burrowing owl should be conducted no more than 30 days prior to ground-disturbing activities. Potential burrows that are identified and determined to be unoccupied outside of the nesting season would be collapsed to avoid construction impacts to the species during nesting season. If burrowing owls are observed within the construction areas of the Proposed Project, California Department of Fish and Game Protocols would be implemented.

- San Joaquin kit fox. If the San Joaquin kit fox is discovered, US Fish and Wildlife would be consulted to obtain a take authorization/permit which may include some or all of the Construction and Operational Requirements of the Standardized Recommendations of Protection of San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 1999).

- Wetlands. If present, wetlands would be identified during the preconstruction surveys conducted for the Proposed Project. This information would be used to avoid impacts to State and federal jurisdictional wetlands. Where feasible, the Proposed Project design would be modified to avoid impacting streambeds and banks of streams. If these areas cannot be avoided, a Streambed Alteration Agreement would be secured from the California Department of Fish and Game, and Clean Water Act Section 404 and 401 permits from the US Army Corps of Engineers and Central Valley Regional Water Quality Control Board, respectively.

- Active nests. The nesting season is generally February 1 to August 31. Work near nests would be scheduled to take place outside the nesting season when feasible. If a nest must be moved during the nesting season, SCE would coordinate with the California

Department of Fish and Game and US Fish and Wildlife and obtain approval prior to moving the nest.

- Valley Oaks. During the preconstruction surveys, Valley oaks would be identified and avoided, to the extent feasible.

Cultural resources in the vicinity of the Proposed Project are presented in detail in Section 4.5, Cultural Resources. Many areas of the Proposed Project have been surveyed for cultural resources, but the presently unsurveyed portions of the Proposed Project would be archaeologically surveyed prior to construction. Resources of special concern include:

- 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 Buidling

Survey(HABS)/Historic American Engineering Record(HAER)/Historic American Landscape Survey(HALS) standards.

3.8 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 site-specific biological or cultural resource protective measures and project mitigation measures, 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 Control Measures for Construction Emissions of Dust
- 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

3.9 Land Acquisition

The Proposed Project would permanently require approximately 231 acres, which includes 20 acres of existing SCE ROW, and 211 acres of ROW to be acquired by SCE. Additionally, the Proposed Project would require approximately 2.1 acres for access roads outside of this ROW.

SCE generally purchases easements from property owners for transmission line ROWs and access road ROWs. SCE would pay fair market value for these easement rights, based upon a value determined by a certified appraiser. SCE has the right of eminent domain to acquire

necessary property rights for its transmission line and substation projects. SCE would exercise that right if unable to reach an agreement with a property owner to purchase the necessary property rights.

Temporary land use beyond the right-of-way during construction would include material staging areas (presently estimated at 10 acres), and construction areas and wire stringing locations (approximately 27.3 acres).

3.10 Land Disturbance

A summary of land that would be temporarily and permanently disturbed during construction of the Proposed Project is provided in Table 3.2, Land Disturbance Estimates. The total project ROW area is 231 acres, consisting of 211 acres of private land to be acquired and 20 acres of existing SCE ROW. An estimated 120 acres would be disturbed during construction. Of this, 78 acres would be temporarily disturbed and restored following construction, and 42 acres would be permanently disturbed.

Land temporarily disturbed during construction would be returned to as close to pre-construction conditions as possible following completion of construction activities. The temporary land area requirements expected for the Proposed Project include the temporary work areas around each structure site (66.3 acres), temporary work areas for installing conductor (30 acres), temporary guard structures at crossings (4.6 acres), and the use of temporary storage and staging yards (presently estimated at 10 acres).

Permanent land disturbance associated with the Proposed Project include the construction of new access and spur roads (9.7 acres), and the removal of orchard vegetation along the ROW (approximately 21 acres)[8] for electric system maintenance, safety and reliability purposes.

The work areas at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation are presently developed. There would be no additional ground disturbance associated with the substation work.

Access Roads and Spur Roads. The new double circuit transmission line would be located in an area primarily used for orchards, which has an existing network of access roads that can be used by construction and maintenance vehicles. The existing roads anticipated to be used to access the Proposed Project alignment include improved roads (asphalt or gravel) and unimproved roads (dirt). Preliminary locations of new and existing access roads are shown in Appendix D, Proposed Project Road Story and Structure Inventory. These new access and spur roads would be left in place once construction is complete to provide access for maintenance and repair purposes. Gates would be installed where required at fenced property lines to restrict general vehicular access to the SCE ROW. It is anticipated that 8 miles of access roads would be

[8]There are approximately 69 structure sites that are presently used for orchards.

necessary to approach the transmission structures for the Proposed Project, and existing roads would be used to the extent practicable.

Table 3.2 Land Disturbance Estimates

Proposed Project Feature	Quantity	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
New Structure Sites	120	66.3	34	32.3
Existing Tower Sites	26	4	4	0
Wire Stringing Sites (including guard structure sites)	72	30	30	0
Access Roads and Spur Roads	8 miles	9.7	0	9.7
Material Staging Yards	2	10	10	0
Total estimated[6]		**120**	**78**	**42**

Notes: The disturbed acreage calculations are estimates based upon SCE's preferred area of use and the width of the proposed right-of-way 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 prior to construction.

Structure Assembly and Maintenance. The total land area required for the Proposed Project for structure assembly work is 66.3 acres. This area is required during construction to provide a safe working space for equipment, vehicles, and materials. Installation of the poles would require a temporary work area of 200 feet by 100 feet (0.5 acre) and lattice structures would require a temporary work area of 200 feet by 200 feet (0.92 acre) around each structure site.

After construction is complete, most of the temporary work area around each structure would be restored. An area 50 feet from the face of each pole to the edge of the ROW and 100 feet from the face of each tower to the edge of the ROW would be kept permanently clear of all obstructions for inspection and maintenance purposes (totaling approximately 32.2 acres).

Conductor Stringing Site Locations. Approximately 32 conductor stringing sites would be required for the Proposed Project transmission line conductor installation, depending on final design and actual conductor reel lengths. These sites require reasonably level areas for maneuvering equipment.

The dimensions of the area needed for the stringing setups associated with conductor and OPGW installation are variable and depend upon terrain. The approximate size needed for tensioning equipment set-up sites is an area 200 feet by 500 feet (2.3 acres), the approximate size needed for pulling equipment set-up sites is an area 200 feet by 200 feet (0.92 acres), the approximate size needed for splicing equipment set-up sites is an area 150 feet by 100 feet (0.35 acres). Preliminary pull sites, tension sites, and splicing sites are identified in Appendix D, Proposed Project Road Story and Structure Inventory.

In general, the pull sites, tension sites, and splicing sites can be located within the proposed ROW. In some situations, specifically at large angles, the pull and tension sites may need to

extend beyond the ROW limits. Of the 30 acres expected for wire stringing sites, 20 acres would be outside of the Proposed Project ROW.

Guard Structures. Approximately 40 guard structure sites would be required for transmission line conductor installation, depending on safety requirements. Each guard structure site would be approximately 50 feet by 100 feet (0.11 acre) in size. The total land area temporarily disturbed by the use of guard structures would be approximately 4.6 acres.

3.11 Construction Equipment and Personnel

It is estimated that approximately 50 craft laborers per day would be required to construct the Proposed Project at its peak. It is expected that at least 30 to 40 of the craft personnel would be from the contractor's pool of experienced personnel, with the remaining construction personnel coming from local sources. The estimated number of personnel and equipment required for construction of the Proposed Project is summarized in Table 3.3, Construction Equipment Requirements, and Table 3.4, Estimated Construction Workforce Production.

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 construction crews are used they would be based at Santa Clarita and/or San Joaquin Valley facilities, and if SCE telecommunications crews are used, they would be based at Alhambra and/or Fullerton facilities.

Contractor construction personnel would be from within the San Joaquin Valley or adjacent areas and would be managed by SCE construction management personnel. Anticipated construction personnel is summarized in Table 3.4, Estimated Construction Workforce Production.

In general, construction efforts would occur in accordance with accepted construction industry standards. Construction activities generally would be scheduled during daylight hours (7:00 am to 5:00 pm), Monday through Friday. 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. If work would occur at night, artificial illumination of the work area 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.

Table 3.3 Construction Equipment Requirements

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Survey				**20**	
1/2 Ton Pick-up Truck, 4X4	200	Gas	2	20	8
Material Staging Yard					
1 Ton Crew Cab 4X4	300	Diesel	1	Duration of project	2
30 Ton Crane Truck	300	Diesel	1		2
10,000 lb Rough Terrain Fork Lift	200	Diesel	1		5
Truck, Semi, Tractor	350	Diesel	1		1
ROW Clearing				**14**	
1 Ton Crew Cab 4X4	300	Diesel	1	9	8
Road Grader	350	Diesel	1	9	6
Track Type Dozer	350	Diesel	1	9	6
Water Truck	350	Diesel	2	9	9
Lowboy Truck/Trailer	500	Diesel	1	9	4
Backhoe/Front Loader	350	Diesel	1	14	6
Small Loader	50	Diesel	1	4	8
10-cu. yd. Dump Truck	350	Diesel	2	4	8
Roads and Landing Work				**16**	
1 Ton Crew Cab 4X4	300	Diesel	2	16	2
Road Grader	350	Diesel	1	16	4
Track Type Dozer	350	Diesel	1	16	6
Drum Type Compactor	250	Diesel	1	16	4
Water Truck	350	Diesel	2	Duration	9
Lowboy Truck/Trailer	500	Diesel	1	8	2
Backhoe/Front Loader	350	Diesel	1	16	6

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Guard Structure Installation				**10**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	10	6
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	1	10	6
Compressor	120	Diesel	1	10	4
Auger Truck	500	Diesel	1	10	6
Extendable Flat Bed Pole Truck	350	Diesel	1	10	6
80ft. Hydraulic Man-lift	350	Diesel	1	10	4
30 Ton Crane Truck	500	Diesel	1	10	6
Remove Existing Conductor and OHGW				**9**	
1 Ton Crew Cab 4X4	300	Diesel	4	9	8
80ft. Hydraulic Man-lift	350	Diesel	3	9	8
Sleeving Truck	300	Diesel	1	9	4
30 Ton Crane Truck	300	Diesel	1	9	4
40' Flat Bed Trailer	N/A	N/A	3	8	2
Truck, Semi, Tractor	350	Diesel	1	8	1
Bull Wheel Puller	500	Diesel	1	6	4
Hydraulic Rewind Puller	300	Diesel	1	6	4
Remove Existing Towers				**16**	
1 Ton Crew Cab, 4X4	300	Diesel	3	16	5
80 Ton Rough Terrain Crane	350	Diesel	1	8	8
30 Ton Crane Truck	300	Diesel	2	16	6
Compressor Truck	300	Diesel	2	8	8
Flat Bed Truck & Trailer	350	Diesel	1	7	8
Rough Terrain Forklift	200	Diesel	1	7	4

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Remove Existing Foundations				**10**	
10-cu. yd. Dump Truck	350	Diesel	2	10	10
Backhoe/Front Loader	350	Diesel	1	10	8
Excavator	300	Diesel	2	10	8
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	1	10	10
Install Tower Foundations				**16**	
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	16	2
30 Ton Crane Truck	300	Diesel	1	16	5
Backhoe/Front Loader	200	Diesel	1	16	8
Auger Truck	500	Diesel	1	16	8
10 cubic yard Dump Truck	350	Diesel	2	16	8
4000 gallon Water Truck	350	Diesel	1	16	8
10 cu. yd. Concrete Mixer Truck	425	Diesel	3	16	3
Tower Steel Haul				**12**	
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	12	2
40' Flat Bed Truck & Trailer	350	Diesel	2	12	8
10,000 lb Rough Terrain Fork Lift	200	Diesel	1	12	6
Tower Steel Assembly				**36**	
30 Ton Crane Truck	300	Diesel	2	36	8
3/4 Ton Pick-up Truck, 4X4	300	Diesel	3	36	4
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	36	4
Compressor Trailer	350	Diesel	2	36	6

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Tower Erection				**12**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	12	5
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	12	5
Compressor Trailer	350	Diesel	1	12	6
180 Ton Rough Terrain Crane	500	Diesel	1	12	6
Install Tubular Pole Foundations				**54**	
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	3	54	2
30 Ton Crane Truck	300	Diesel	1	54	5
Backhoe/Front Loader	200	Diesel	1	54	8
Auger Truck	500	Diesel	1	54	8
10-cu. yd. Dump Truck	350	Diesel	2	54	8
4000 gallon Water Truck	350	Diesel	1	54	8
10 cu. yd. Concrete Mixer Truck	425	Diesel	3	54	3
Tubular Pole Haul				**27**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	27	5
40' Flat Bed Truck & Trailer	350	Diesel	2	27	8
180 Ton Rough Terrain Crane	500	Diesel	1	27	6
Tubular Pole Assembly				**54**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	54	5
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	54	5
Compressor Trailer	120	Diesel	1	54	5

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
180 Ton Rough Terrain Crane	500	Diesel	1	54	6
Tubular Pole Erection				**54**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	54	5
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	54	5
Compressor Trailer	120	Diesel	1	54	5
180 Ton Rough Terrain Crane	500	Diesel	1	54	6
Install Conductor and OPGW				**115**	
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	5	115	8
Wire Truck & Trailer	350	Diesel	6	115	2
Dump Truck (Trash)	350	Diesel	1	115	2
3/4 Ton Pick-up Truck, 4X4	300	Diesel	6	115	10
30 Ton Manitex	350	Diesel	4	115	6
22 Ton Manitex	350	Diesel	1	115	8
Splicing Rig	350	Diesel	2	115	2
Splicing Lab	300	Diesel	2	26	2
Pole Truck & Trailer	500	Diesel	1	36	6
20,000 lb. Rough Terrain Fork Lift	350	Diesel	1	115	2
580 Case Backhoe	120	Diesel	1	115	2
Spacing Cart	10	Diesel	3	29	8
Static Truck	350	Diesel	1	115	2
Static Tensioner	0	Diesel	1	115	2
3 Drum Straw line Puller	300	Diesel	2	115	4
60lk Puller	525	Diesel	1	115	3

Work Activity				Estimated Schedule (Days)	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Sag Cat w2 winch	350	Diesel	2	115	2
D8 Cat	300	Diesel	4	115	1
Hughes 500 E Helicopter		Jet A	1	26	6
Fuel, Helicopter Support Truck	300	Diesel	1	26	2
Low Boy Truck & Trailer	500	Diesel	1	115	2
Guard Structure Removal				**10**	
3/4 Ton Pick-up Truck, 4X4	300	Diesel	2	10	6
1 Ton Crew Cab Flat Bed, 4X4	300	Diesel	2	10	6
Compressor Trailer	120	Diesel	2	10	4
Extendable Flat Bed Pole Truck	350	Diesel	2	10	6
80ft. Hydraulic Man-lift	350	Diesel	1	10	4
30 Ton Crane Truck	500	Diesel	1	10	6
Rector Substation Modifications				**90**	
Crew Truck	300	Diesel	2	40	4
Dump Truck	350	Diesel	2	40	3
5 Ton Stake Bed Truck	235	Diesel	1	40	2
Trencher	85	Diesel	1	10	8
Drill Rig	500	Diesel	1	10	8
Tractor	350	Diesel	1	40	7
Forklift	200	Diesel	1	40	4
Mobile crane	300	Diesel	1	5	8
8 Ton Stake Truck	200	Diesel	1	90	4
Crew Cab Truck	300	Diesel	2	90	6
Carryall Vehicle	300	Gasoline	2	90	6

Work Activity				**Estimated Schedule (Days)**	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
50 ton Crane	350	Diesel	1	45	8
Lift gate Truck	300	Diesel	1	90	4
Pickup	200	Diesel	2	90	4
Forklift	200	Diesel	1	90	8
Manlift	350	Diesel	2	90	8
Support Truck	300	Diesel	2	90	4
Carry deck crane	300	Diesel	1	10	8
Support Truck	300	Diesel	1	15	8
Wire Truck	350	Diesel	2	60	8
Test Truck	300	Diesel	1	60	8
Big Creek 3 Substation Modifications				**5**	
8 Ton Stake Truck	200	Diesel	1	4	4
Crew Cab Truck	300	Diesel	2	4	6
50 ton Crane	350	Diesel	1	3	8
Lift gate Truck	300	Diesel	1	4	4
Pickup	200	Diesel	2	4	4
Forklift	200	Diesel	1	4	8
Manlift	350	Diesel	1	2	8
Support Truck	300	Diesel	2	4	4
Test Truck	300	Diesel	1	5	8
Wire Truck	350	Diesel	1	4	8
Springville Substation Modifications				**5**	
8 Ton Stake Truck	200	Diesel	1	3	4
Crew Cab Trucks	300	Diesel	2	3	6
50 ton Crane	350	Diesel	1	2	8
Lift gate Truck	300	Diesel	1	3	4

Work Activity				**Estimated Schedule (Days)**	
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity		Duration of Use (Hrs/Day)
Pickup	200	Diesel	2	3	4
Forklift	200	Diesel	1	3	8
Manlifts	350	Diesel	1	2	8
Support Truck	300	Diesel	2	3	4
Test Truck	300	Diesel	1	5	8
Wire Truck	350	Diesel	1	3	8
Vestal Substation Modifications				**5**	
8 Ton Stake Truck	200	Diesel	1	3	4
Crew Cab Trucks	300	Diesel	2	3	6
50 ton Crane	350	Diesel	1	2	8
Lift gate Truck	300	Diesel	1	3	4
Pickup	200	Diesel	2	3	4
Forklift	200	Diesel	1	3	8
Manlift	350	Diesel	1	2	8
Support Truck	300	Diesel	2	3	4
Test Truck	300	Diesel	1	5	8
Wire Truck	350	Diesel	1	3	8
Restoration				**20**	
1 Ton Crew Cab 4X4	300	Diesel	2	20	2
Road Grader	350	Diesel	1	20	6
Backhoe	350	Diesel	1	20	6
Front End Loader	350	Diesel	1	20	6
Track Type Dozer	350	Diesel	1	20	6
Drum Type Compactor	250	Diesel	1	20	6
Water Truck	350	Diesel	1	20	10
Lowboy Truck/Trailer	300	Diesel	1	20	3

Table 3.4 Estimated Construction Workforce Production

Construction Activity	Crew Size	Proposed Project Requirements	Production Rate
Survey	One 4-person crew	19.7 miles	1 Mile/Day
Material Staging Yards	One 4-person crew	--	--
Right-of-way Clearing	One 5-person crew	2.3 miles	0.25 Miles/Day
Roads and Landing Work	One 5-person crew	8.0 Miles	0.5 Miles/Day and 4 Structure Pads/Day
Guard Structure Installation	One 6-person crew	80 Structures	4 Structures/Day
Remove Existing Conductor and OHGW	One 14-person crew	2.2 Circuit Miles	0.25 Mile/Day
Remove Existing Towers	One 6-person crew	26 Towers	1.5 Towers/Day
Remove Existing Tower Foundations	Two 4-person crews	26 Towers	2.5 Tower Foundations (10 footings)/Day
Install Foundations for Towers	One 9-person crew	12 Towers	0.75 Towers/Day
Tower Steel Haul	One 4-person crew	12 Towers	1 Towers/Day
Tower Steel Assembly	Two 7-person crews	12 Towers	0.5 Towers/Day
Tower Erection	One 8-person crew	12 Towers	1 Towers/Day
Install Foundations for TPs	One 7-person crew	108 Tubular Poles	2 Tubular Poles/Day
TP Haul	One 4-person crew	108 Tubular Poles	4 Tubular Poles/Day
TP Assembly	One 8-person crew	108 Tubular Poles	2 Tubular Poles/Day
TP Erection	One 8-person	108 Tubular	2 Tubular Poles/Day

	crew	Poles	
Conductor and OPGW Installation	Four 8-person crews	39.4 Miles	0.35 Miles/Day
Guard Structure Removal	One 6-person crew	80 Structures	4 Structures/Day
Rector Substation	One 8-person crew	See Section 3.2	--
Big Creek 3 Substation	One 7-person crew	See Section 3.2	--
Springville Substation	One 7-person crew	See Section 3.2	--
Vestal Substation	One 7-person crew	See Section 3.2	--
Restoration	One 7-person crew	19.7 Miles	1 Mile/Day

3.12 Construction Schedule

SCE anticipates that construction of the transmission line would take between 9 and 12 months. Crews are typically expected to work five 10-hour days. Depending on local permit requirements, weekend, evening, and night work may also be required due to the scheduling of system outages and construction schedules. Construction would commence following CPUC approval, final engineering and procurement activities. Table 3.5, Proposed Project Construction Timetable, summarizes the length of time anticipated to construct each phase of the Proposed Project. The Proposed Project is currently scheduled to begin operation in October 2012.

Table 3.5 Proposed Project Construction Timetable

Proposed Project Component	Months
Material Staging Yard preparation	Less than 1
ROW clearing, access road and structure pad construction	3
Demolition of 1.1 miles of existing Big Creek 3-Rector 220 kV transmission facilities	1
Construction of 1.1 miles of new Big Creek 1-Rector and Big Creek 3-Rector 220 kV double circuit transmission line	2
Demolition of 1.1 miles of existing Big Creek 1-Rector 220kV transmission facilities	1
Construction of 18.5 miles of new 220 kV double circuit transmission line	10
Post construction clean-up and restoration	1

3.13 Project Operation

The personnel and equipment required for operation of the Proposed Project are summarized below.

220 kV Transmission Lines

The transmission facilities associated with the Proposed Project would be inspected, maintained, and repaired following completion of construction in a manner consistent with good maintenance and repair practices. This involves both routine preventive maintenance and emergency procedures to maintain service continuity. Aerial and ground inspections of project facilities would be performed. Components would be inspected annually, at a minimum, for corrosion, equipment misalignment, loose fittings, and other common mechanical problems.

The access and spur roads constructed as part of the Proposed Project would be inspected, maintained, and repaired following the completion of construction in a manner consistent with SCE's road maintenance and repair practices. This involves both routine preventive maintenance and emergency response procedures to maintain continuity of access to SCE's transmission

facilities. At a minimum, during the annual aerial and/or ground inspections of the transmission facilities, the roads would also be inspected for damage.

Substations

Rector Substation, Big Creek 3 Substation, Springville Substation, and Vestal Substation are existing substations, and Rector Substation is a staffed substation. No additional activities to accommodate the substations of Proposed Project beyond the on-going routine operations and maintenance activities would be required.

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 measures to minimize the environmental impacts (Applicant Proposed Measures (APMs).

4.1 Aesthetics

This section describes the potential aesthetic impacts of the Proposed Project. Proposed mitigation measures and alternatives are also discussed.

4.1.1 Environmental Setting

Visual or aesthetic resources are generally defined as both the natural and man-made features of the landscape that are visible and that contribute to the public's experience and appreciation of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which its presence will alter the perceived visual character and quality of the environment.

The Proposed Project would be located in western Tulare County between the City of Visalia and the western foothills of the Sierra Nevada Mountains. Most of western Tulare County is located on the relatively flat San Joaquin Valley floor at approximately 350 feet above sea level (BM, 2007). This area is part of an alluvial plain comprised of rivers flowing west from the foothills to the Sierra Nevada Mountains spreading out and draining in the fertile valley soils. Specifically, the Proposed Project and its alternative routes are located either wholly or partially within the Kaweah River delta. Early settlers originally referred to this area as the Four Creeks Country after four of the Kaweah's downstream creeks: St. John's River, Mill Creek, Packwood Creek, and Cameron Creek. The landscape, once vegetated with grasses, had a prairie-like appearance. Since the late 19th Century, however, western Tulare County has been intensively farmed and is now presently one of the most productive agricultural regions in the United States (City of Visalia, 1996). The original network of creeks and seasonal waterways is now controlled by the Terminus Dam on Kaweah Lake to the east. Many of the original creeks flow in channels and are used to irrigate crops.

In clear-weather conditions, the foothills to the Sierra Nevada Mountains are visible from much of the area with nearby peaks rising over 2,500 feet (DMC, 2005). The foothills in this area of Tulare County extend up to 5 miles outward from the granitic intrusive material that forms the Sierra Nevada Mountains. The foothills are characterized by steep slopes, rangelands, and scattered oak woodlands. In the lower elevation areas of the foothills that are close to the valley floor, orchards and vineyards become more common.

Man-made features that exist within the natural landscape in the rural portions of western Tulare County include transmission lines, cell phone towers, agricultural buildings, such as barns and sheds, granite and aggregate mining operations, and industrial-type infrastructure associated with agricultural operations present in the area, such as farm implementation yards and propane suppliers.

The context of the regional landscape for the Proposed Project and its alternatives is shown on Figure 4.1-1, Regional Landscape Context. This map is based in part on existing topographical data in northwestern Tulare County. Highway 99 is the major north-south corridor for the region, running along the eastern portion of the San Joaquin Valley. Highway 198 runs east-west across the valley leading east to Sequoia and Kings Canyon national parks located approximately 40 miles and 70 miles east of the City of Visalia, respectively.

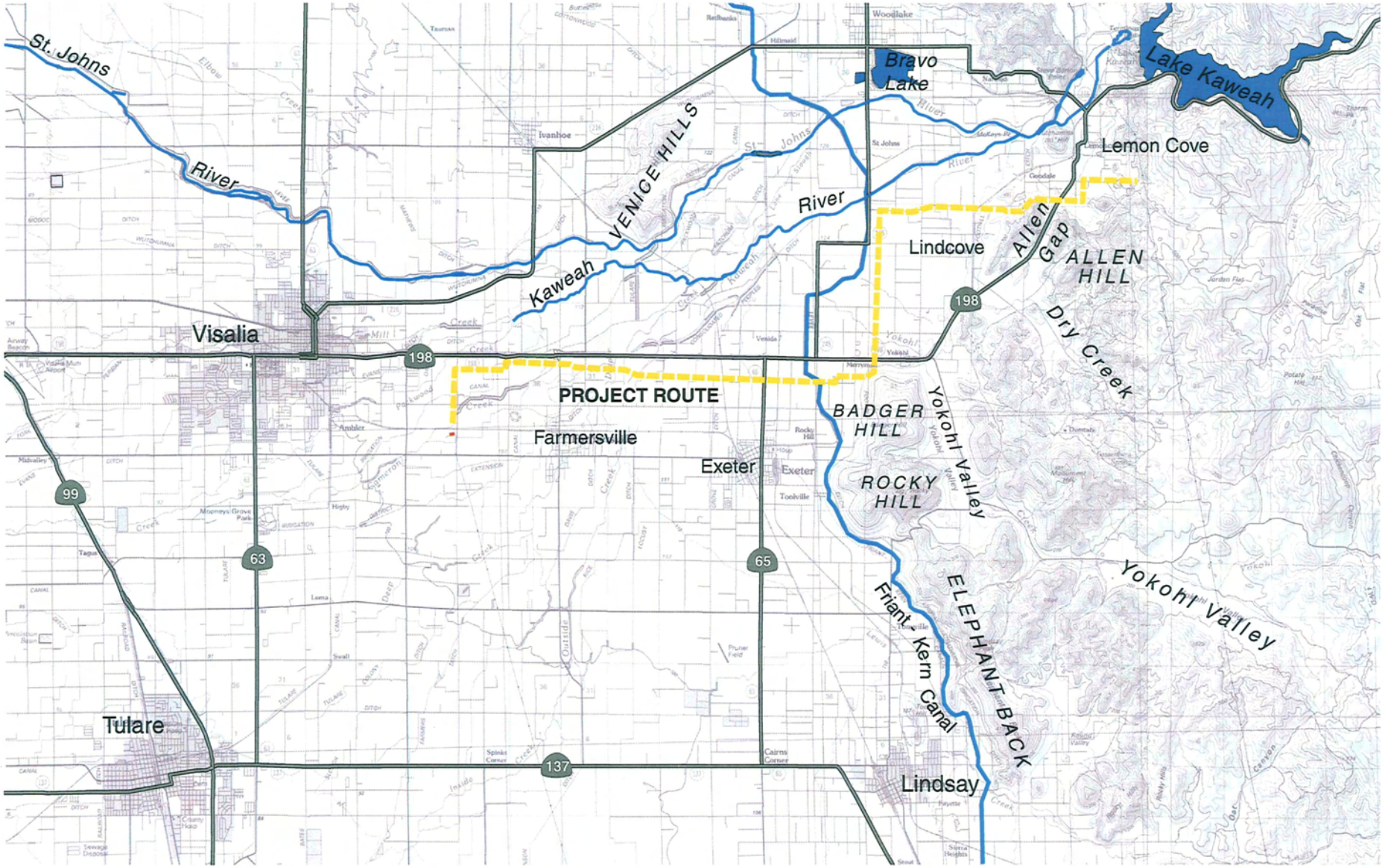

Figure 4.1-1
Regional Landscape Context
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
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Highway 198 traverses in an east-west direction through Tulare County. Within the City of Visalia and for approximately 4 miles east of the city, Highway 198 is a 4-lane divided limited access highway, and has two service roads running parallel to the main roadway that provide access to a variety of commercial businesses, such as auto repair shops and storage yards. Approximately 4 miles east of SCE's existing Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW, the limited-access design of Highway 198 makes a transition to a two-lane highway that allows for cross-traffic.

There are no identified scenic vistas or scenic state highways in the area of the Proposed Project. However, Highway 198 is presently eligible for a State Scenic Highway designation for the stretch of roadway between Highway 99 to Sequoia National Park.

4.1.2 Regulatory Setting

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

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; or
- 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 analysis of potential visual effects associated with the Proposed Project is based on both site reconnaissance and review of technical data including maps and drawings, aerial and ground-level photographs of the vicinity of the Proposed Project, and local planning documents and computer-modeling of existing conditions and of elements of the Proposed Project. Field observations were conducted in June and October 2006 and April 2008 to document existing visual conditions in the vicinity of the Proposed Project and to identify potentially affected sensitive viewing locations.

The aesthetics analysis includes the systematic documentation of the visual setting and an evaluation of visual changes associated with the Proposed Project. An inventory of existing

visual conditions was prepared to characterize the affected environment in terms of its visual character, quality, and location of potentially sensitive viewpoints.

To document the visual change that would occur, visual simulations show representative views of the Proposed Project from a subset of the visual character photographs, representing key viewpoints. The visual simulations are presented as "before" and "after" images from each of these key viewpoints. The visual impact assessment was 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 "after" views provided by the computer-generated visual simulations and comparing them to the existing visual environment.

The viewshed of the Proposed Project is generally defined as the area from which the Proposed Project would be visible. As seen from many places along the transmission line route, intervening vegetation and buildings would screen views of the Proposed Project. Within the area several existing overhead transmission lines, including a portion of the route of the Proposed Project, are established landscape features.

In general, visual details become apparent to the viewer when they are seen in the foreground, at distances of 0.25 to 0.5 mile or less (Smardon et al., 1986). Beyond 1 mile, the prominence of elements, such as transmission poles and conductors, is lessened due to a combination of light scattering in the atmosphere, which decreases the contrast of an object against its background, and the fact that as one moves further away from an object, its visibility decreases in relationship to the entire visual field. For purposes of the visual analysis in this PEA, the primary focus is considered this foreground viewshed area where visual details are apparent and areas up to approximately 1 mile from the Proposed Project transmission line route where change could be noticeable.

Existing Conditions

Most of the transmission line route of the Proposed Project is dominated by intensive agricultural uses, primarily citrus and olive orchards, and occasional field crops. The route also passes near and crosses county roads and irrigation channels. Other structures typical of the landscape are scattered rural residences, transmission lines, cell phone towers, and agricultural buildings, such as barns and sheds. The Proposed Project also passes near several newer residential developments. The eastern terminus of the Proposed Project is at the toe of the Sierra Nevada foothills in a landscape of rolling, grass-covered rangelands with groupings of oaks. This landscape is characterized by strong seasonal changes in color, with the grass hillsides turning from bright green in the wetter winter and spring months to golden brown in summer and fall.

In order better discuss the effects of the Proposed Project to the aesthetics of the area, the transmission line route of the Proposed Project has been divided into a set of five distinct sub-areas or landscape units that have been identified for purposes of documenting and describing the foreground viewshed with respect to the Proposed Project. Each of the five identified landscape units can be considered as distinct "outdoor rooms" with distinguishing topographic, vegetation, and/or development patterns. Figure 4.1-2, Photo Viewpoint Locations, delineates the Proposed Project and the five landscape units, and Table 4.1-1, Landscape Unit Designations for the

Proposed Project, summarizes the portion of the route and the landscape units found within the Proposed Project viewshed. Each landscape unit is described in more detail below.

Table 4.1-1 Landscape Unit Designations for the Proposed Project

Landscape Unit	Approximate Length (miles)	Structure Numbers	Photo Numbers[1]
Landscape Unit 1 Existing SCE ROW from Rector Substation to the turning point	1.1	1 to 7	1 to 8
Landscape Unit 2 Paralleling Highway 198 to Farmersville	3.3	8 to 26	9 to 16
Landscape Unit 3 Paralleling Highway 198, Farmersville to Badger Hill	5.9	27 to 57	17 to 28
Landscape Unit 4 North from Badger Hill to Moffet Drive	5.1	58 to 86	29 to 32
Landscape Unit 5 Moffet Drive to foothills	3.1	87 to 109	33 to 40

[1]Each Landscape Unit is characterized by photographs presented in Figures 4.1-3 through 4.1-12

Rector Substation: Rector Substation is located on Road 148 north of Avenue 280, and occupies about 13.5-acres within a flat, open agricultural landscape. The facility includes a three-story control building, approximately 100 feet by 60 feet; other lower buildings, and a paved parking area are within the fenced area of the substation (Figure 4.1-3, Landscape Unit 1 Characterization Photos, Photos 1 and 2). The substation is visible from places within the surrounding area. Photo 1 shows a near view of the site from Road 148 just to the south of the facility. Photo 2 is a view of the substation including the landscaped entry gate taken from Road 148 along the east edge of the property.

Landscape Unit 1: Existing Transmission Line from Rector Substation (Structures 1-7, Photos 1 through 8, Figures 4.1-3 and 4.1-4)

Landscape Unit 1 encompasses the first 1.1 miles of the Proposed Project north of Rector Substation. In this unit, the Proposed Project lies within an existing SCE 150-foot transmission ROW and would replace the existing transmission lines. At mile 1.1, the route turns east and parallels Highway 198, approximately 0.45 miles to the south of the highway.

The transmission line replacement planned for the Proposed Project begins at the existing Rector Substation. Photo 3 is a view of Rector Substation from approximately 0.25 mile away along the existing transmission line ROW. For much of this portion of the route, the Proposed Project would utilize double circuit tubular poles to replace the existing single circuit lattice towers, and

the new transmission line would parallel the existing circuits on adjacent structures within the same ROW. This portion of the Proposed Project crosses Cameron Creek between Structures 3 and 4. At this location, the creek is contained in a concrete channel and appears similar to an irrigation canal (Photos 3 and 4). A bicycle trail is planned for this area, roughly following the creek and possibly using part of the existing transmission line ROW (City of Visalia, 2004).

Much of the landscape in this section of the transmission line route for the Proposed Project is characterized by field crops, newly planted orchards, and scattered residences and farm buildings (see Photos 3 and 4). In the northern portion of this landscape unit, the Proposed Project passes within a few hundred feet of residential development including portions of the Eagle Glen, Los Rios, Casablanca, Riverwood, and East Oaks Estates subdivisions. As shown in Photos 6 and 7, the existing lattice towers are currently visible from this area. The existing transmission lines on single circuit lattice towers continue north from Landscape Unit 1 and cross Highway 198 (Photo 8).

Landscape Unit 2: Paralleling Highway 198 to Farmersville (Structures 8 through 26, Photos 9 through 16, Figures 4.1-5 and 4.1-6, Landscape Unit 2 Characterization Photos)

Landscape Unit 2 includes portions of Highway 198 that are under the sphere of influence of the City of Visalia, suburbanized outskirts, and the City of Farmersville. At Mile 1.1 of the Proposed Project transmission line route, the route turns east, and would be located within a new 100-foot ROW to be acquired by SCE. From Mile 1.1 to Mile 9.6, the Proposed Project route parallels Highway 198, approximately 0.45 miles south of the highway. In this area, Highway 198 is an eligible State Scenic Highway; however, there is no specific schedule for when designation would occur. As summarized in Appendix I, Aesthetics Background Information, various local plans suggest guidelines for maintaining the scenic quality of the highway in this area including use of agricultural buffers along the corridor to preserve the rural character of the route. The landscape character along this segment of Highway 198 reflects the recent land developments within the City of Visalia and area abutting the city. Representative views include suburban residential, commercial, and industrial developments, as well as agricultural landscapes. Highway 198 in this area is a divided freeway with two travel lanes in each direction (see Photo 14). The traffic speed limit is 65 miles per hour. At the easternmost portion of this landscape unit, the route passes through the City of Farmersville, a community of approximately 9,000 residents. In this area, the Proposed Project is within 0.3 mile of residential development situated at the edge of Farmersville. The Farmersville General Plan indicates that further commercial and industrial development is anticipated in northern Farmersville near the Proposed Project route (Farmersville, 2003). Common vertical elements found in this landscape setting include electrical distribution lines (see Photos 9, 12, 13, 14, and 15) and cell towers (see Photos 10 and 16).

Many views of the Proposed Project from Highway 198 in this area would be partially or fully screened by large trees and adjacent mature orchards (see Photos 14 and 15). However, as shown in Photo 13, some open views to the south are available.

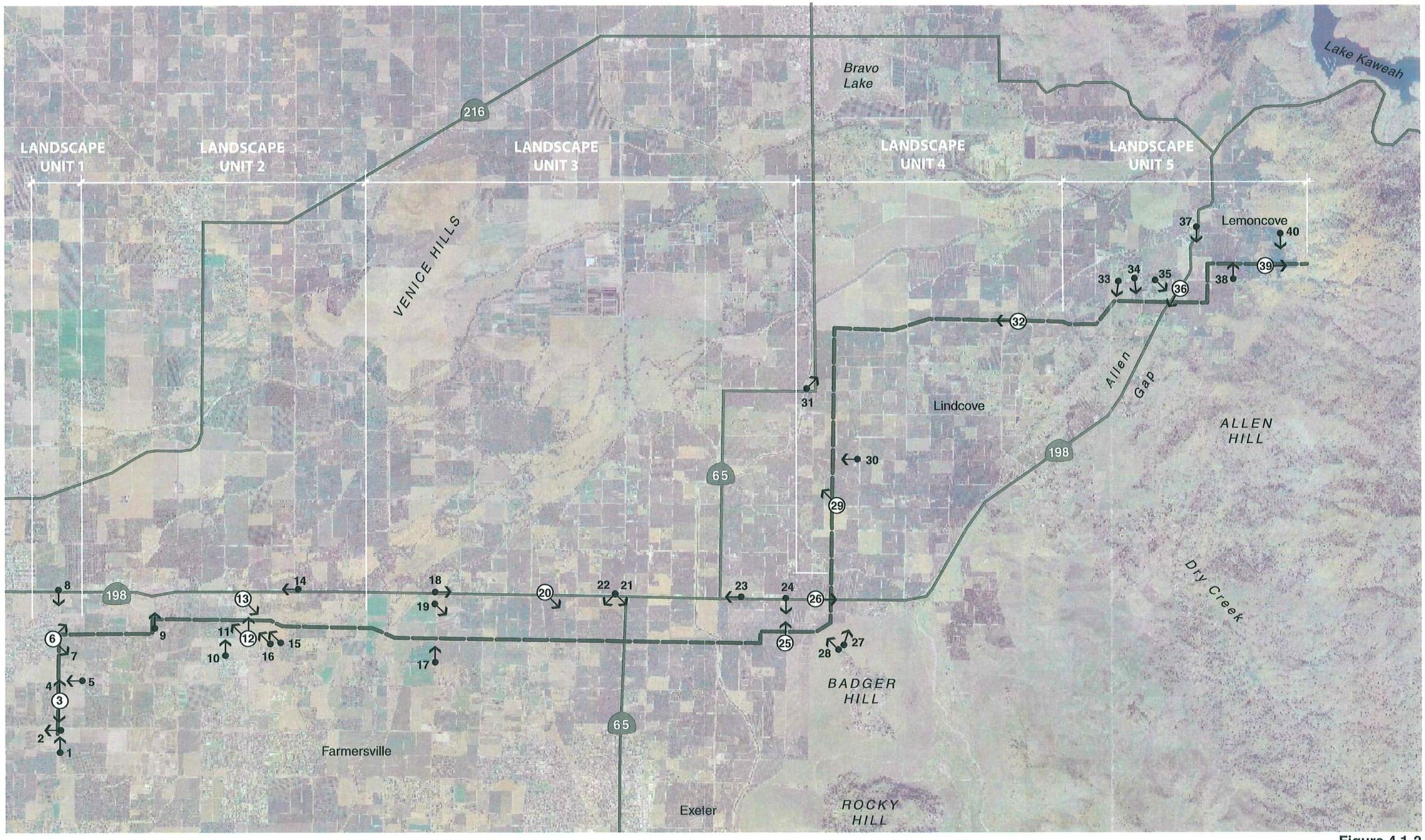

Figure 4.1-2
Photo Viewpoint Locations
San Joaquin Cross Valley Project

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1. View from Road 148 looking north toward Rector Substation

2. View from Road 148 looking west toward Rector Substation

3. View from Road 148 at Cameron Creek looking south*

4. View from Road 148 at Cameron Creek looking north

*Simulation Viewpoint

ENVIRONMENTAL VISION
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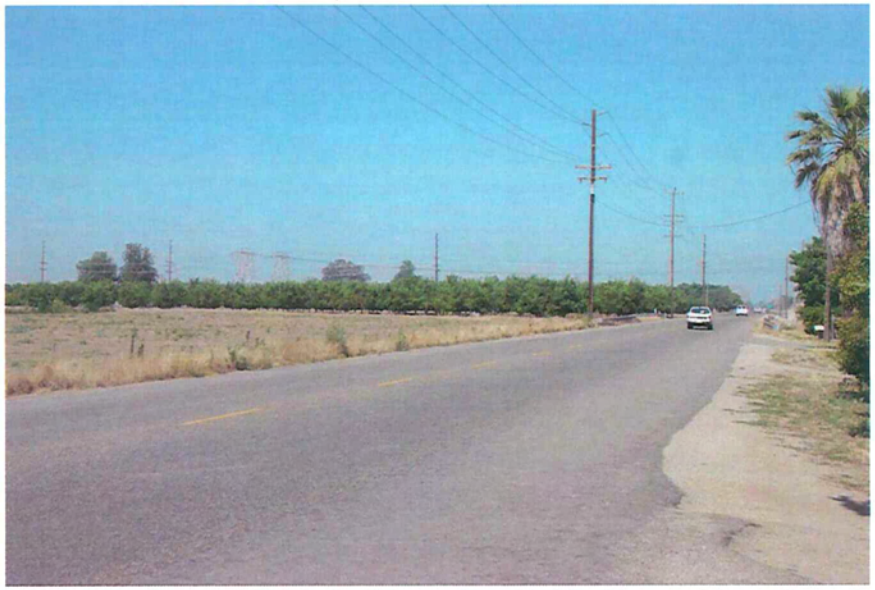
Figure 4.1-3
Visual Character Photos - Landscape Unit 1
San Joaquin Cross Valley Project



5. View from Avenue 288 (Marinette) near Road 148 looking west toward canal

6. View from Rio Linda looking northeast*

7. View from Rio Linda looking southeast

8. View from Highway 198 at overcrossing looking south

*Simulation Viewpoint

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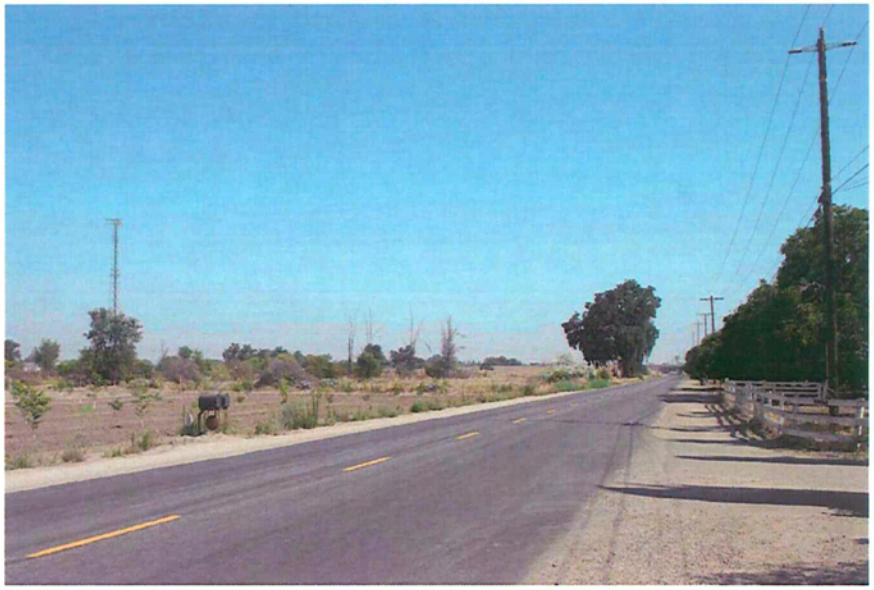
Figure 4.1-4
Visual Character Photos - Landscape Unit 1
San Joaquin Cross Valley Project



9. View from Road 156 north of Avenue 292 looking north

10. View from North Ventura Avenue at West Teddy Street looking north

11. View from Farmersville Boulevard north of Terry Avenue looking northwest

*Simulation Viewpoint

12. View from Farmersville Boulevard north of Terry Avenue looking north*

Figure 4.1-5
Visual Character Photos - Landscape Unit 2
San Joaquin Cross Valley Project

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13. View from Farmersville Blvd. at Noble (near Hwy. 198) looking southeast*

14. View from Highway 198 looking west toward Farmersville

15. View from Teresa Street near Road 168 looking northwest

16. View from Road 166 at Teresa Street looking northwest

*Simulation Viewpoint

Figure 4.1-6
Visual Character Photos - Landscape Unit 2
San Joaquin Cross Valley Project

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Near the City of Farmersville, there would be intermittent views of the Proposed Project (see Photos 10, 11, 12, 15, and 16). However, at many locations, particularly at older residences, mature trees and large shrubs would partially or fully obscure views of the Proposed Project (see Photos 11 and 15). From other places, especially adjacent to open fields and roadways, clear views of the Proposed Project would be available (see Photo 12).

Landscape Unit 3: Parallel to Highway 198, City of Farmersville to Badger Hill (Structures 27 through 56; Photos 17 through 28, Figures 4.1-7 through 4.1-9, Landscape Unit 3 Characterization Photos)

Landscape Unit 3 reflects the typical agricultural character of the region as visible from Highway 198. Toward the eastern portion of this unit, the transmission line route of the Proposed Project would cross Highway 198. Landscape Unit 3 is identified by the visual corridor within approximately 0.45 mile of eligible State Scenic Highway 198 as it travels along the valley floor. This unit follows the Proposed Project as it parallels Highway 198 from the far edge of the suburban development around the City of Farmersville until it passes out of the visual range of Highway 198 north of Badger Hill. This landscape is dominated by agricultural uses, including orchards, fields, county roads, scattered rural residences, and farm buildings. Between transmission Structures 47 and 48, the Proposed Project crosses the Friant-Kern Canal. Similar to Landscape Unit 2, electrical distribution lines are prominent vertical features in the Landscape 3 visual setting.

Until it reaches the foothills, this portion of Highway 198 is dominated by agricultural landscape features. Photographs in this section emphasize views of the Proposed Project from the highway. Many of the views from Highway 198 are across younger orchards or field crops and provide open views toward the Proposed Project (see Photos 21 and 22). Photo 20 depicts a view from the Southern Pacific Railroad crossing where a rise in the highway allows for open views toward the Proposed Project. However, at other locations along Highway 198 views of the Proposed Project would be partially or fully screened by mature orchards and trees associated with residences (see Photos 19, 23, and 24). Views from county roads and rural residences to the south of the Proposed Project include orchards and tall trees (See Photos 17 and 25). The City of Exeter, with an approximate population of 9,800, lies approximately 1 mile to the south of the Proposed Project.

At the easternmost end of this landscape unit at Mile 9.6, the transmission line route of the Proposed Project turns north at the toe of Badger Hill, a topographic feature that ranges in elevation between 800 and 1,152 feet. At the top of this grassy hillside lies the Badger Hill Estates residential development. Open views toward the Proposed Project are available from points along High Sierra Drive where it descends the north side of Badger Hill (see Photo 27). From this private roadway, sweeping views of an intensively developed agricultural landscape are available against the backdrop of the foothills and the Sierra Nevada Mountains. A variety of vertical elements including existing electrical distribution poles and wind machines scattered at intervals through orchards are visible from this location. The closest residence on High Sierra Drive, a private road, is approximately 0.25 miles from the Proposed Project. However, as shown in Photo 28, views of the transmission line route for the Proposed Project are generally screened by landscaping and houses from this hillside residential area.

As the transmission line route for the Proposed Project turns north, it crosses Highway 198 (see Photo 26). In views from this portion of Highway 198, electrical distribution lines run parallel to the roadway on both the north and south sides. Mature citrus orchards line the road. To the east, distant views are possible of the foothills to the Sierra Nevada Mountains.

Landscape Unit 4: North from Badger Hill to Moffet Drive (Structures 58 through 86, Photos 29 through 32, Figure 4.1-10, Landscape Unit 4 Characterization Photos)

In Landscape Unit 4, the Proposed Project would be more than 0.5 mile from Highway 198. Similar to Landscape Unit 3, the visual character in this area is dominated by relatively flat topography and agricultural land uses. At Mile 12.9, at Avenue 320/7th Avenue (Cottage PO Drive), the Proposed Project turns east. The route then parallels the north side of Avenue 320.

From many places, views in this area include mature orchards and trees in the foreground and middle ground. This intervening vegetation may help in partially screening views toward the Proposed Project. However, open views toward the route are available from places along county roads (see Photo 30), and at points where the route parallels Avenue 320 (see Photo 32). In some cases, the Proposed Project would be near rural residences (see Photos 29 and 32).

Photo 31 depicts a view of the Proposed Project from Highway 65 at the Friant-Kern Canal, a component of the Central Valley Project, which transports water over 150 miles south from Millerton Lake to the Kern River where it supplements irrigation water in Kern, Tulare, and Fresno counties.

Landscape Unit 5: Moffet Drive to Foothills (Structures 87 through 109, Photos 33 through 40, Figures 4.1-11 and 4.1-12)

Landscape Unit 5 is characterized by more dramatic topography including close-range views of the foothills to the Sierra Nevada Mountains. The development pattern in this landscape unit includes farms that are smaller in scale than those found in other portions of the route. Large-lot rural residences located in the communities of Lemon Cove and Goodale are also present in Landscape Unit 5. At Mile 15.4, the Proposed Project turns northeast and passes between grass covered hillsides. Photo 33 depicts vineyards at the base of low-lying hills (Figure 4.1-11). At Mile 16.0, the Proposed Project heads east passing through the outskirts of Lemon Cove and crossing Highway 198 approximately 0.3 miles south of Avenue 324 and 0.75 miles from the center of Lemon Cove (Photo 36). The Proposed Project passes near some residences in Lemon Cove, a small foothill community (Photo 35). Photo 34 depicts a view from the Sequoia Union Elementary School looking south toward the Proposed Project (approximately 1,200 feet away). With a present population of approximately 300 people, Lemon Cove's economy focuses on tourism for the national parks and Lake Kaweah. The community was developed in the late 19th Century as one of the first foothill resort towns in the foothills to the Sierra

17. View from 2227 North Anderson Road (Road 180) looking north

18. View from North Anderson Rd. (Road 180) at Ave. 295 looking southeast

19. View from Highway 198 at North Anderson Road (Road 180) looking east

*Simulation Viewpoint

20. View from Highway 198 at SP railroad crossing looking southeast*

Figure 4.1-7
Visual Character Photos - Landscape Unit 3
San Joaquin Cross Valley Project

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21. View from Highway 198 at Road 65 looking southeast

22. View from Highway 198 at Road 65 looking southwest

23. View from Highway 198 east of Highway 65 (N. Spruce Rd.) looking east

24. View from Highway 198 at Road 210 looking south

Figure 4.1-8
Visual Character Photos - Landscape Unit 3
San Joaquin Cross Valley Project

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25. View from Road 210 near Avenue 292 looking north*

26. View from Highway 198 near Road 212 looking east*

27. View from High Sierra Drive looking north

28. View from High Sierra Drive looking northwest

*Simulation Viewpoint

Figure 4.1-9
Visual Character Photos - Landscape Unit 3
San Joaquin Cross Valley Project

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29. View from Avenue 304 looking northwest*

30. View from Avenue 308 looking west

31. View from Highway 65 (Avenue 314) at Friant-Kern Canal looking northeast

32. View from Avenue 320 (Cottage P.O.) looking west*

*Simulation Viewpoint

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Figure 4.1-10
Visual Character Photos - Landscape Unit 4
San Joaquin Cross Valley Project

33. View from Road 324 near Goodale Lane looking south

34. View from Sequoia Union Elementary School looking south

35. View from Road 324 looking southeast

*Simulation Viewpoint

36. View from Highway 198 near Avenue 324 looking south*

Figure 4.1-11
Visual Character Photos - Landscape Unit 5
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
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37. View from Highway 198 near Douglas in Lemon Cove looking south

38. View from Avenue 324 at Road 248 looking north

39. View from Avenue 324 looking east toward proposed connection point*

40. View from Avenue 328 looking south toward Lemon Cove Granite Quarry

*Simulation Viewpoint

Figure 4.1-12
Visual Character Photos - Landscape Unit 5
San Joaquin Cross Valley Project

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Nevada Mountains, and it contains a number of notable historic buildings from its early beginnings. Photo 37 is a view toward the Proposed Project from the historic Pogue Home built in 1879. The Proposed Project is approximately 0.5 mile away at this point and may be partially visible between mature trees and orchards. At Mile 17.5, the route heads north for 0.4 miles and then east toward the foothills.

The Proposed Project transmission line route terminates at Mile 18.5 where it reaches the Big Creek 3-Springville 220 kV transmission line. For approximately the last 0.2 miles of the transmission line route for the Proposed Project, the landscape is characterized by the grassy hills and scattered trees of the foothills. The terminus (Photo 39) is at an elevation of approximately 600 feet, just south of the Lemon Cove Granite Quarry (Photo 40).

Impact Analysis

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 scenic state highways in the area of the Proposed Project. As a result, there would be no impact to scenic resources within a state scenic highway from construction and operation of the Proposed Project.

Construction Impacts

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

The City of Visalia and western Tulare County have recently experienced period of rapid residential and commercial development. Construction of the Proposed Project is unlikely to differ from the activities of these developments, except the Proposed Project would be built more quickly and in a less intensive manner than a residential or commercial development. Construction-related visual impacts could result from the presence of equipment, materials, and work crews at Rector Substation and along the transmission line route for the Proposed Project. Although these effects are relatively short-term and are considered to be a less than significant impact due to their temporary nature, they would be seen by the public from some locations and would be most noticeable to local residents. SCE would make every effort to keep construction activities as clean and inconspicuous as practical by storing building materials and equipment away from public view and keeping most of the activity within the ROW. To the extent feasible, SCE would store materials and stage equipment at existing commercial facilities near the transmission line route. However, if the distance between existing facilities and the construction area is too great, temporary staging areas would be required closer to the work area. SCE would

make attempts to utilize previously disturbed areas along the route to temporarily store materials and equipment. Land temporarily disturbed during construction would be returned to preconstruction conditions following completion of construction activities.

Construction of the Proposed Project is unlikely to be substantially different from the existing conditions in the City of Visalia, City of Farmersville, or western Tulare County, or degrade the existing visual character of the area. Impacts to the visual character of the area from construction of the Proposed Project 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 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.

Operation Impacts

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

Existing views and computer-generated visual simulations that portray the location, scale, and appearance of the proposed transmission structures are presented as Figures 4.1-13 through 4.1-23, Visual Simulations. The visual impact evaluation, including references to the Proposed Project visual simulations, is presented according to landscape units. The locations of simulation viewpoints and landscape units are shown on Figure 4.1-2, Photo Viewpoint Locations.

The set of visual simulations portray representative public views of the Proposed Project as seen from a range of distances and varied viewing conditions. The visual impacts associated with these changes are described and evaluated according to landscape unit.

Rector Substation. Modifications to Rector Substation include relocation of the terminations of existing transmission lines, installation of two new circuit breakers, replacement of two existing circuit breakers, and installation of a new MEER. All of these modifications would occur within the existing fenceline and within the footprint of the existing substation. The modifications would not affect existing landscaping at the substation. These changes could be visible from a limited portion of Road 148. Because the new structures would be similar in scale and aesthetic appearance to the existing substation facilities, the change would be a minor incremental visual effect and would not be particularly noticeable to the public.

Landscape Unit 1: Existing Transmission Line ROW North of Rector Substation. The primary affected viewers in this landscape unit are nearby residents and local roadway motorists. In this area, the existing transmission ROW lies within 250 feet from the approximately 24 residential properties abutting the existing SCE ROW. Local roadway motorists' views currently encompass existing transmission structures including wood poles and lattice towers. With respect

to these existing viewing conditions, the new structures would generally represent a minor incremental change.

Figure 4.1-13 (VP 3) portrays a "before" and an "after" view of the Proposed Project from Road 148 at Cameron Creek looking south through a recently planted orchard toward the Rector Substation. A wood pole distribution line runs along the east (left) side of the road in this view and the existing lattice towers run along the west. The Proposed Project involves replacing the existing lattice towers with 120-foot-tall tubular poles on the west side of the ROW. These structures would then be paralleled by the new double circuit transmission structures on the east side of the ROW that would continue east to the connection point in the foothills to the Sierra Nevada Mountains. Although the new tubular poles are taller than the original lattice towers which are approximately 63 feet tall, the new replacement tubular poles would be fewer in number, and have a simpler, more streamlined profile. As a result of this more streamlined appearance, the overall effect of the Proposed Project would be to reduce visual clutter. In addition, over time as the orchard trees mature, they would partially screen views of the Proposed Project from the roadway. The existing SCE ROW along this section of the Proposed Project is also being considered for a bicycle trail route that approximately follows Cameron Creek (City of Visalia, 2004).

Figure 4.1-14 (VP 6) shows a "before" and an "after" view of the Proposed Project from South Rio Linda Street in the Los Rios residential subdivision at the eastern edge of Visalia. Presently, a pair of existing lattice towers, about 63 feet tall, appears above the side yard wall of the single family residence seen in the foreground. The presence of residential landscaping also appears in the existing view, including recently planted trees, seen in front of the block wall. The Figure 4.1-14 visual simulation portrays the new 122-foot-tall lattice tower and lattice tower replacement (Structure #7 and Replacement Structure #7, respectively). These structures would be located in a slightly different place than the existing towers. In this case, the new structures are about 50 feet farther from the viewpoint than the existing lattice towers. The new towers could appear somewhat taller and more prominent than the existing towers. As the existing residential landscaping in the area matures, it is expected that the new structures would be less visible. Overall, because most of the new structures would be tubular poles, the new structures would appear less visually complex and more streamlined than the existing lattice towers, views from this neighborhood would appear less visually cluttered than the existing condition. Mature existing trees throughout the neighborhood would partially or completely screen public views of the Proposed Project from many locations within this residential area.

Landscape Unit 2: Paralleling Highway 198 to Farmersville. Highway 198 motorists are a primary affected viewer group in this landscape unit. In addition there are a limited number of residential viewers including at scattered rural residences and homes situated at the edge of the City of Visalia. For the most part, the new tubular poles would be partially screened by existing orchard trees and mature residential landscaping. Along portions of Highway 198, motorists' views presently encompass existing utility structures (subtransmission, distribution, and communications) that include wood poles and lattice towers. With respect to these existing viewing conditions, the new tubular poles would generally represent a minor incremental change. In the limited area where three new tubular poles would be situated in an open field, SCE would incorporate measures in order to reduce the visibility of the Proposed Project from Farmersville Boulevard.

Figure 4.1-15 is a "before" and an "after" view of the Proposed Project from Farmersville Boulevard north of Terry Avenue. This view is typical of some of the more open landscape conditions seen by the public near the Proposed Project. The Proposed Project is approximately 0.25 mile away from the viewpoint. The simulation indicates that Structure 20, a 130-foot tubular pole, would be visible on the right side of the view. Although the view is relatively open and the landscape level, scattered mature trees seen along roadsides and near residences partially screen views of the Proposed Project. As shown in the Figure 4.1-15, Visual Simulation Landscape Unit 2, because of its lighter color and greater setback from the roadway, the new structure appears less prominent than the existing wood poles. Existing vertical elements seen in this view include utility poles in the background. As demonstrated by this visual simulation, the Proposed Project would not alter the intrinsic character of the existing roadway view in terms of its composition and the general scale of landscape elements.

Figure 4.1-16 (VP 13) portrays a "before" and an "after" view of the Proposed Project from Farmersville Boulevard at Noble Avenue just south of Highway 198. The Proposed Project is approximately 0.25 mile away. Similar to the previous simulation at Terry Avenue, open landscape conditions allow unobstructed views of the Proposed Project. Trees partially screen the Proposed Project on the left of the view. From this vantage point, Structures 20 and 21, which are 130-foot-tall tubular poles, would appear most visible. The simulation indicates that given the presence of existing utility poles and overhead conductors in the foreground, the Proposed Project would not substantially alter the character of views presently experienced from this portion of Highway 198.

Landscape Unit 3: Paralleling Highway 198, Farmersville to Badger Hill. Similar to Landscape Unit 2, the primary affected viewers in this landscape unit are Highway 198 and local roadway motorists, and a limited number of residential viewers. In this area, the Proposed Project crosses existing orchards. Roadway motorists' views presently encompass a variety of existing utility structures including wood poles and lattice towers. The new tubular poles would generally represent a minor incremental change to existing visual conditions.

Figure 4.1-17 (VP 20) portrays a "before" and an "after" view of the Proposed Project from Highway 198 at the Southern Pacific Railroad crossing. The existing 66 kV subtransmission line runs parallel to the south side of the highway appears prominently in the foreground. At this location, a rise in the grade of Highway 198 as it crosses the railroad allows views over the mature citrus orchards in the foreground. The Proposed Project is approximately one-third of a mile away, and although visible in this view, is not particularly prominent. Structure 41, a 130-foot-tall structure, is the closest structure visible in this view. As seen from the viewpoint, the Proposed Project does not obstruct views of distant landscape features. In other locations along the highway where the roadbed is lower, the Proposed Project would be even less visible, and in many cases would be partially or fully screened from traffic by mature orchards. These visual effects would not substantially alter the existing landscape character of motorists' views.

Existing view from Road 148 at Cameron Creek looking south (VP 3)

Visual simulation of proposed project

Figure 4.1-13
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
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Existing view from South Rio Linda Street looking northeast (VP 6)

Visual simulation of proposed project

Figure 4.1-14
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
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Existing view from Farmersville Boulevard north of Terry looking north (VP 12)

Visual simulation of proposed project

Figure 4.1-15
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042308

Existing view from Farmersville Boulevard at Noble (near Highway 198) looking southeast (VP 13)

Visual simulation of proposed project

Figure 4.1-16
Visual Simulation
San Joaquin Cross Valley Project

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Existing view from Highway 198 at SP railroad crossing looking southeast (VP 20)

Visual simulation of proposed project

Figure 4.1-17
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042308

Figure 4.1-18 (VP 25) portrays a "before" and an "after" view of the Proposed Project from Road 210 near Avenue 292. The view is adjacent to an existing residence and an existing utility line runs parallel to the road. Citrus orchards would partially screen views of the Proposed Project. Structure 52, a 120-foot-tall structure, is visible at the right side of the image. The simulation demonstrates that, as seen from this location, the Proposed Project represents an incremental visual change to a landscape setting in which existing utility poles prominently appear.

Figure 4.1-19 (VP 26) portrays a "before" and an "after" view of the Proposed Project from Highway 198 near Road 212. The Proposed Project crosses Highway 198 approximately 850 feet from this viewpoint. The simulation indicates that the new overhead conductor would be visible and Structure 56, a 120-foot-high tubular pole, would also appear near the left edge of the view. Existing utility lines run parallel to the roadway in this area. The new tubular pole would be setback from the roadway such that it would not appear central in motorists' cone of vision. Consequently, the new tubular pole would not be particularly noticeable within the context of the overall roadway view. This location is one of two places where the Proposed Project transmission line route crosses Highway 198, an eligible State Scenic Highway. However, because the new tubular poles would be setback from the roadway and because the affected view is brief in duration, the Proposed Project would not substantially alter the existing character of motorists' views.

At the easternmost end of this landscape unit at Mile 9.6 the Proposed Project turns to the north at the toe of Badger Hill, which includes the hillside Badger Hill Estates residential development, located to the southeast. Several replacement structures in the existing SCE ROW north of Rector Substation may also be visible from a limited portion of Badger Hill. Open views toward the Proposed Project are available from points along High Sierra Drive where it descends the north side of Badger Hill (refer to Photo 27). From this private roadway location, the Proposed Project would appear against an agricultural landscape backdrop that includes various vertical elements such as utility poles and wind machines scattered at intervals through orchards. The Proposed Project would not affect views of the foothills to the Sierra Nevada Mountains seen in the backdrop. With respect to views from the existing homes, as shown in Photo 28, views of the Proposed Project would be generally screened by landscaping and houses from this hillside residential area.

Landscape Unit 4: North from Badger Hill to Moffet Drive. Local roadway motorists and a limited number of residents would be the primary affected viewers in this landscape unit. As described below, existing views from many locations presently encompass various utility elements including wood poles and overhead conductors. With respect to these existing viewing conditions, the new structures would generally represent a minor incremental change that would not substantially alter the existing character of the landscape setting.

Figure 4.1-20 (VP 29) portrays a "before" and an "after" view from Avenue 304 looking northwest toward the Proposed Project. The new tubular poles are planned to be more than 400 feet away from the residence, and would not be visible from this vantage point. Existing mature vegetation provides limited screening of the Proposed Project in this area. In general, the new structures would be setback from existing residential properties. As illustrated in the visual

simulation, although conductors would be visible from the residence, because of the distance to the new structures, the visual effect on residential views would not be substantial.

Figure 4.1-21 (VP 32) portrays a "before" and an "after" view of the Proposed Project from Avenue 320 (Cottage PO Drive). The Proposed Project parallels Avenue 320 on the right (north) at this location. Structure 82, a 120-foot-tall structure, would be visible in the foreground. Existing utility lines are also visible along both sides of the road. As shown in the Figure 4.1-21 simulation, the orchard trees would provide only a minor amount of screening. The new structures would appear noticeably taller and more prominent than the existing wood poles that parallel both sides of the road. Structure 82 would be situated in relatively close proximity to the residence seen at the left of this photo.

Landscape Unit 5: Moffet Drive to Foothills. The primary affected viewers in Landscape Unit 5 are motorists on Highway 198 and other local roadways, as well as a limited number of residential viewers the Lemon Cove/Goodale area. Roadway motorists' views currently encompass a variety of existing utility structures including wood poles and overhead lines. The new structures would generally represent a minor incremental change to existing visual conditions presently seen within this landscape unit.

Figure 4.1-22 (VP 36) portrays a "before" and an "after" view from Highway 198 near Avenue 324 looking south toward the Proposed Project. Background elements include the hills on either side of the Allen Gap. The Proposed Project would cross Highway 198 approximately 500 feet from this viewing location. As shown in the simulation image, Structure 94, a 120-foot tall tubular pole, would appear prominently at the left side of the view. It could also appear prominent from a nearby residence. From this area of southbound Highway 198, existing vegetation and structures would not substantially screen views of the Proposed Project. However, in views from the south, topography would partially block views from Highway 198 toward the Proposed Project. Because this stretch of Highway 198 begins to enter the foothills to the Sierra Nevada Mountains, it could be considered visually more sensitive than the area where the Proposed Project first crosses the highway.

Figure 4.1-23 (VP 39) portrays a "before" and an "after" view of the location where the Proposed Project route connects to the Big Creek-Springville 220 kV transmission line. This part of the Proposed Project would be visible from a limited portion of Avenue 324 in an undeveloped area near an existing gravel quarry. The existing view from this location encompasses existing electrical distribution poles in the foreground with several lattice transmission towers seen against the grass covered hillside in the middleground. An existing gravel road can be seen running partway up the hillside. Structure 102, a 130-foot tall tubular pole would be located 475 feet from the viewpoint. This structure would be situated less than 200 feet from the roadway and appears somewhat prominent. Structure 102A, a 130-foot tall tubular pole would be a quarter of a mile away, and Structure 103, a 120-foot tubular pole would be one-half mile away, centered between six single-phase poles ranging between 120 and 145 feet in height at the connection point. The simulation also indicates that a new access road would be visible on the hillside near the cluster single phase poles at the connection point. When construction of the Proposed Project is complete, all disturbed terrain would be restored

Existing view from Road 210 near Avenue 292 looking north (VP 25)

Visual simulation of proposed project

Figure 4.1-18
Visual Simulation
San Joaquin Cross Valley Project

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Existing view from Highway 198 near Road 212 looking east (VP 26)

Visual simulation of proposed project

Figure 4.1-19
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042308

Existing view from Avenue 304 looking northwest (VP 29)

Visual simulation of proposed project

Figure 4.1-20
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042208

Existing view from Avenue 320 (Cottage P.O.) looking west (VP 32)

Visual simulation of proposed project

Figure 4.1-21
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042208

Existing view from Highway 198 near Avenue 324 looking south (VP 36)

Visual simulation of proposed project

Figure 4.1-22
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042308

Existing view from Avenue 324 looking east toward proposed connection point (VP 39)

Visual simulation of proposed project

Figure 4.1-23
Visual Simulation
San Joaquin Cross Valley Project

ENVIRONMENTAL VISION
042308

through re-contouring and revegetation in order to reduce the visual effect associated with ground disturbance and to re-create a natural appearing hillside landscape.

Overall, the Proposed Project would introduce approximately 108 new tubular poles and 14 new lattice towers. As discussed above and illustrated in the visual simulations, the Proposed Project would represent an incremental visual change to existing visual conditions. In a limited number of instances, where close-range views would be seen in the foreground from sensitive residential or roadway locations, the Proposed Project could appear prominent in relationship to the surrounding landscape setting. However, the changes associated with the Proposed Project would not substantially affect existing visual resources including the character of existing landscape views presently seen by the public in the vicinity of the Proposed Project. 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?

The MEER at Rector Substation would be equipped with a light that would be manually switched on and off, and shielded to reduce glare. The new transmission line structures would be treated in a non-reflective finish. As a result, the Proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Effects of light and glare from operation of the Proposed Project would be less than significant.

4.1.5 Mitigation

Because the Proposed Project would result in less than significant impacts to aesthetics, no mitigation measures are required.

4.1.6 Alternative 2

The conditions associated with Alternative 2 are similar to those for the Proposed Project. There are no State Scenic Highways in the vicinity of Alternative 2, nor are there State scenic vistas in the area. The visual character and visual quality of the area surrounding Alternative 2 is also very similar to that surrounding the Proposed Project. However, during construction of Alternative 2, there is a much greater possibility that nighttime work would occur during the outage conditions to replace the existing Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines. As a result, impacts to aesthetics would be slightly greater than those for the Proposed Project. However, impacts to aesthetics would remain less than significant.

4.1.7 Alternative 3

The conditions associated with Alternative 3 are similar to those for the Proposed Project. There are no State Scenic Highways in the vicinity of Alternative 3, nor are there State scenic vistas in the area. The visual character and visual quality of the area surrounding Alternative 3 is very similar to that of the Proposed Project as it nears the foothills to the Sierra Nevada Mountains. However, during construction of Alternative 3, there is a much greater possibility that nighttime work would occur during the outage conditions to replace the existing Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines. As a result, impacts to aesthetics would be

greater than those for the Proposed Project. However, impacts to aesthetics would remain less than significant.

4.1.8 References

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4.2 Agricultural Resources

This section describes the potential agricultural resource impacts of the Proposed Project. Proposed mitigation measures and alternatives are also discussed.

4.2.1 Environmental Setting

In 2003, agriculture production accounted for $3.29 billion of value in Tulare County, and the County was ranked number one in agricultural production in the United States in 2001. Between 1999 and 2003, Tulare County experienced a $218 million increase in gross production value of its agricultural and livestock products (Tulare County, 2007). The primary agricultural products produced in Tulare County include milk, oranges, grapes, stone fruits, and alfalfa. In addition to cultivated areas, approximately 27 percent of the land in Tulare County is used as rangeland (CDC, 2006).

Section 21060.1 of the California Environmental Quality Act (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). The location of classified agricultural land is shown on Figure 4.2-1, Classified Farmland. Approximately 46 percent of land in Tulare County is classified as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (CDC, 2006), and is summarized in Table 4.2-1, Summary of Important Farmland in Tulare County.

Table 4.2-1 Summary of Important Farmland in Tulare County

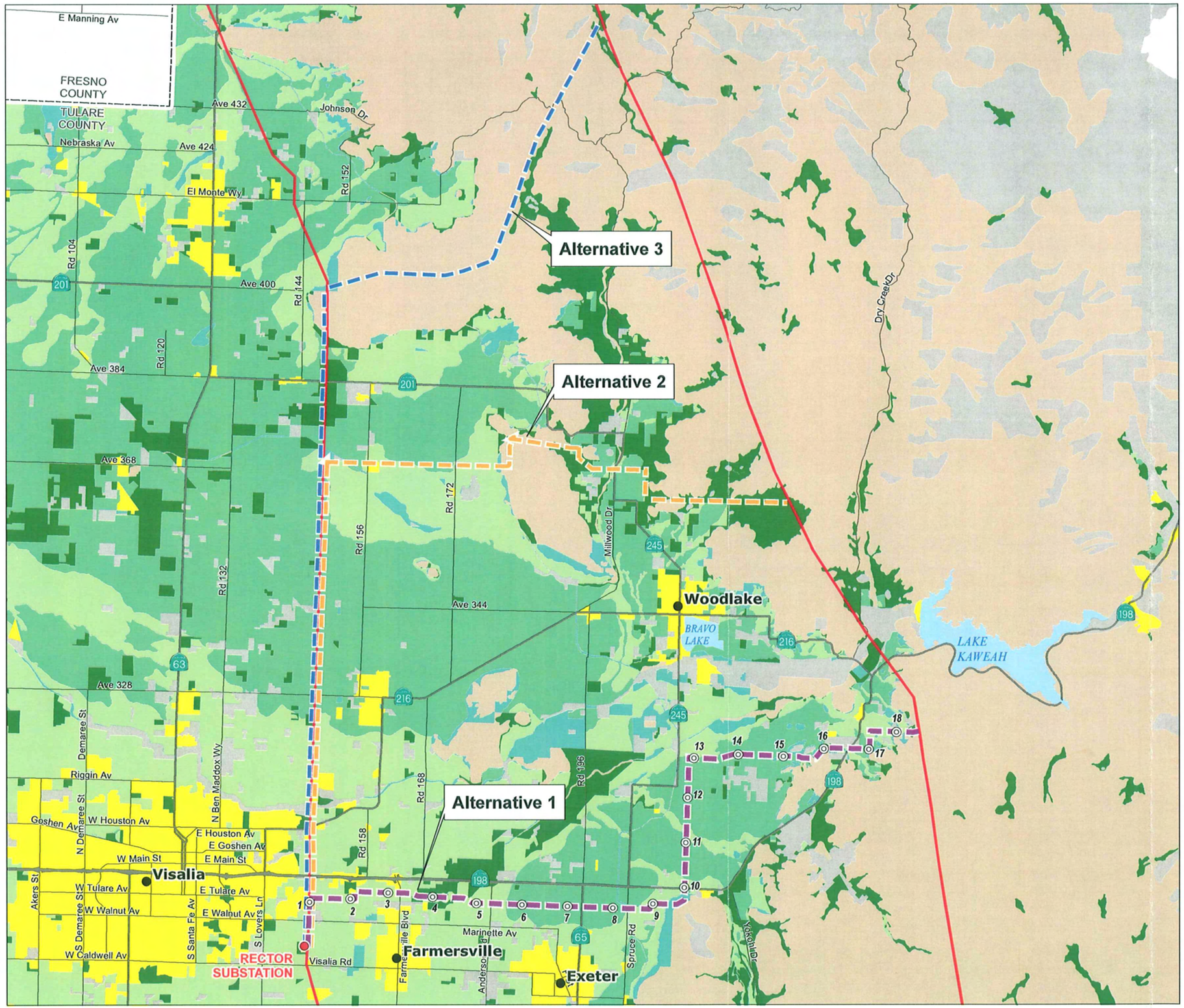
	Inventoried acreage in Tulare County	**Percent of total acreage in Tulare County**
Prime Farmland	379,862	24 percent
Farmland of Statewide Importance	332,159	21 percent
Unique Farmland	12,218	Less than one percent

Source: CDC, 2006

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive reduced property tax assessments that reflect the land worth based on farming and open space uses as opposed to full market value. In addition, local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. Land that is subject to a Williamson Act Contract is shown on Figure 4.2-2, Land Under Williamson Act Contract in the Vicinity of the Proposed Project.

Tulare County has seven zoning designations related to agriculture. Four of the five Exclusive Agriculture (AE) Zones have an acreage requirement (10, 20, 40, and 80); there is an Agricultural Zone (A-1), and Foothill Agricultural Zone (AF).

Figure 4.2-1
Classified Farmland



FMMP (California Department of Conservation, Division of Land Resource Protection, 2006)

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Grazing Land
- Urban and Built-Up Land
- Other Land
- Water
- Not Inventoried

Routes

- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation
- Milepost

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

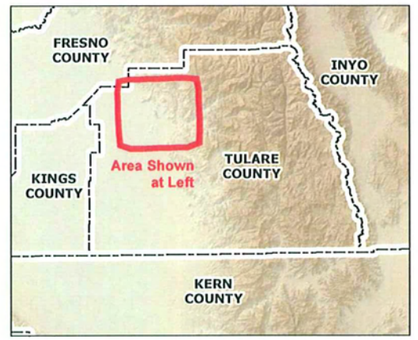


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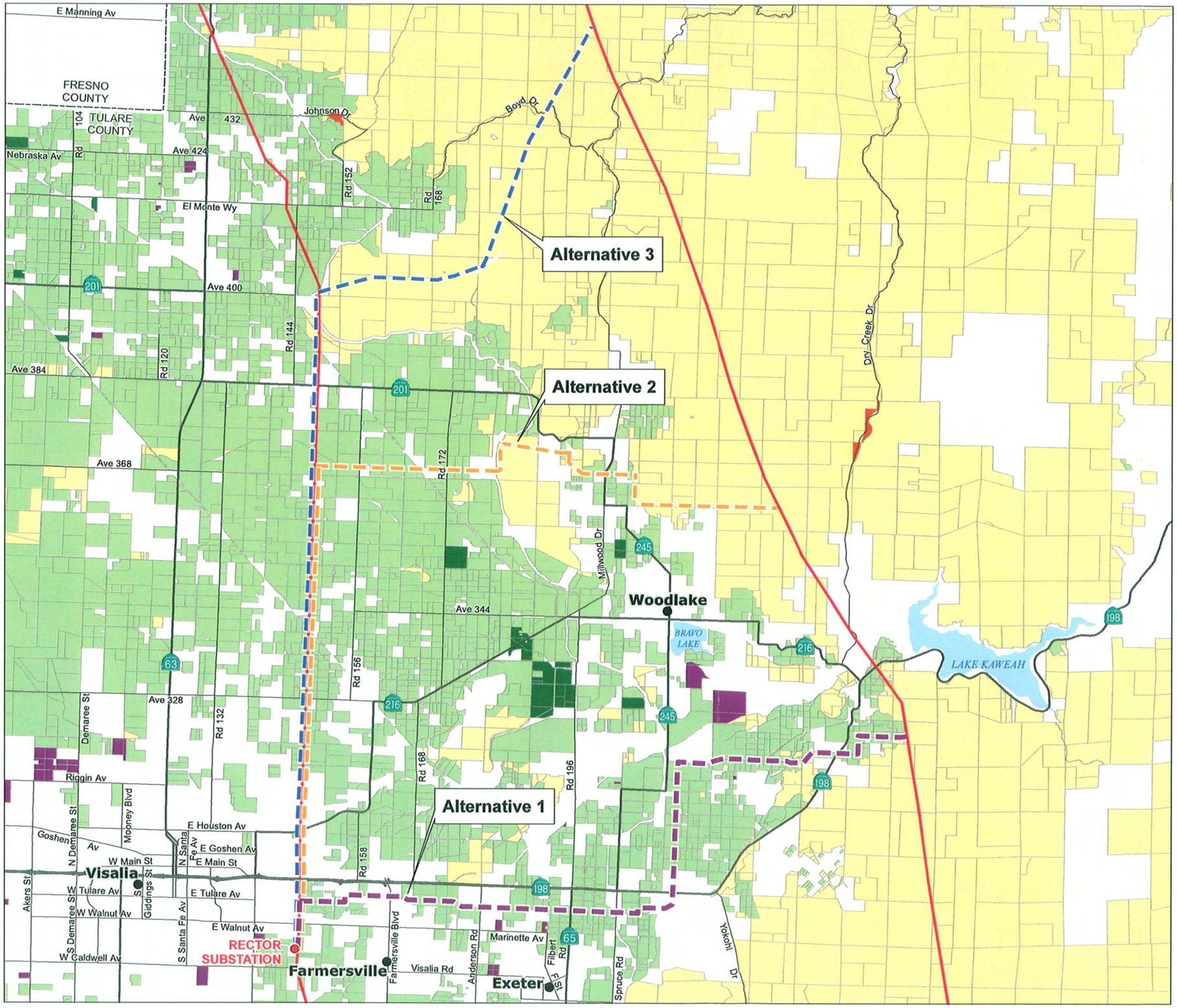
Figure 4.2-2
Land Under Williamson Act Contract



California Williamson Act
(California Department of Conservation, 2004)

- Farmland Security Zone
- Prime
- Prime Nonrenewal
- Non-Prime
- Non-Prime Nonrenewal

Routes

- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2007)
- County Boundaries (TBM, 2007)
- Water (TBM, 2007)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

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The City of Visalia has one agricultural zoning designation (A), and the City of Farmersville has no agricultural zoning designations; however, the City of Farmersville intends to keep its urban boundaries that are shared with Tulare County designated for agricultural land use (City of Farmersville, 2002).

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.

The Williamson Act, as administered by Tulare County, provides that the erection, construction, alteration, or maintenance of electric utility facilities are deemed compatible uses on Williamson Act lands, provided that the facilities acquire a Special Use Permit under the provisions of Ordinance 352 (Zoning Ordinance). However, CPUC G.O. 131-D Section IX.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."

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; or

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

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

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

The land crossed by the Proposed Project that has an agricultural zoning designation is in Tulare County, and the agricultural zoning designations for Tulare County allow for the location and operation of public utility structures with a Special Use Permit. However, SCE would not be required to obtain a Special Use Permit to build electrical infrastructure per CPUC G.O. 131-D Section IX.B.

As described above in Section 4.2.2, Agricultural Resources Regulatory Setting, the Williamson Act as administered by Tulare County allows for the erection, construction, alteration, or maintenance of electric utility facilities on parcels entered into a Williamson Act contract with a Special Use Permit. However, SCE would not be required to obtain a Special Use Permit to build electrical infrastructure per CPUC G.O. 131-D Section IX.B. As a result, the construction and operation of the Proposed Project would not conflict with a Williamson Act contract, and any effects would be less than significant.

Because the substation portions of the Proposed Project would occur within the fencelines of existing substations, the construction and operation of the substation components would not impact agricultural resources.

Construction Impacts

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use?

Based on 2006 Tulare County data, approximately 94 percent of the route is located on Important Farmland (CDC, 2006). Table 4.2-3, Classified Farmland Disturbed During Construction of the Proposed Project, provides a summary of the farmland classification of the land expected to be disturbed during construction of the Proposed Project.

Construction of the Proposed Project would result in temporarily converting approximately less than 0.1 percent of Important Farmland in Tulare County to non-agricultural use. The substation work for the Proposed Project would occur within existing fencelines, and would not require the use of agricultural land. Therefore, there would be a less than significant impact to farmland conversion in Tulare County resulting from construction of the Proposed Project.

Table 4.2-3 Classified Farmland Disturbed During Construction of the Proposed Project

Classification	Percent of Proposed Project	Approximate Acreage of Classified Farmland Disturbed During Construction[1]	Percent of Classified Farmland in Tulare County Converted to Non-Agricultural Use During Construction[2]
Prime Farmland	44.92	47	0.01 percent
Farmland of Statewide Importance	45.58	48	0.01 percent
Unique Farmland	3.54	4	0.03 percent
Farmland of Local Importance	0.75	1	Less than 0.01 percent
Grazing Land	3.83	4	Less than 0.01 percent

[1]These acreages reflect SCE's preliminary estimates of land disturbance during construction of the Proposed Project. During both construction and operation of the Proposed Project, agricultural use of the existing and new ROW outside of these preliminary disturbance areas is acceptable if vegetation is kept trimmed to less than 15 feet in height.
[2]Not all land classified as farmland is presently used for agriculture.

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, construction activities (i.e., use of off-road equipment, transporting material) are very similar to agricultural activities. Construction of the Proposed Project would not cause other changes in the environment that would result in the conversion of farmland to nonagricultural use. There would be no impact to farmland conversion as a result of other changes in the environment caused by construction of the Proposed Project.

Operation Impacts

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use?

During operation of the Proposed Project, approximately 39 acres of Important Farmland would be permanently converted to non-agricultural use for transmission line structures and access roads. These areas include 50-foot clearances around tubular poles, 100-foot clearances around towers, and a 20-foot width of disturbance for access roads and spur roads. As shown in Table 4.2-4, Classified Farmland Converted to Non-agricultural Use During Operation of the Proposed Project, these 39 acres of permanent disturbance represent less than 0.1 percent of the Important Farmland in Tulare County.

Table 4.2-4 Classified Farmland Converted to Non-agricultural Use During Operation of the Proposed Project

Classification	Percent of Proposed Project	Approximate Acreage of Classified Farmland Converted to Non-agricultural Use During Operation[1]	Percent of Classified Farmland in Tulare County Converted to Non-Agricultural Use During Operation[2]
Prime Farmland	44.92	19	Less than 0.01 percent
Farmland of Statewide Importance	45.58	19	0.01 percent
Unique Farmland	3.54	1	0.01 percent
Farmland of Local Importance	0.75	Less than 1 acre	Less than 0.01 percent
Grazing Land	3.83	2	Less than 0.01 percent

[1]These acreages reflect SCE's preliminary estimates of land disturbance during operation of the Proposed Project. During both construction and operation of the Proposed Project, agricultural use of the existing and new ROW outside of these preliminary disturbance areas is acceptable if vegetation is kept trimmed to less than 15 feet in height.
[2]Not all land classified as farmland is presently used for agriculture.

In addition, any vegetation occurring within the ROW of the Proposed Project would require trimming for safety and reliability purposes. For operation of the Proposed Project, it is estimated that approximately 165 acres of vegetation would be kept trimmed to not exceed 15 feet in height[1].

Although some agricultural lands during operation of the Proposed Project could not be used for agriculture, the modifications made to accommodate a transmission line (i.e., installation of access roads) are conducive to agricultural operations, and are not substantially different from the ranching roads, pumping stations, and wind machines that are present throughout agricultural areas. After construction of the Proposed Project, there is not expected to be any additional disturbance of land during operation of the Proposed Project. Therefore, impacts to the conversion of farmland to non-agricultural use 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?

Operation of the Proposed Project would consist of annual inspection and routine maintenance of the transmission line and access roads.

In general, the Proposed Project would not cause changes in the environment substantially different from the modifications that have been made in the area to accommodate agriculture. As

[1]Not all of these 165 acres of land are presently used for agriculture.

a result, any impacts to agriculture due to the changes in the environment caused by the Proposed Project would be less than significant.

4.2.5 Mitigation

Because the Proposed Project would result in less than significant impacts to agricultural resources, no mitigation measures are required.

4.2.6 Alternative 2

The Alternative 2 route crosses approximately 22 miles of agricultural areas, and 1 mile in grazing land. The effects to agricultural resources would be similar as those for the Proposed Project. Impacts would be less than significant.

4.2.7 Alternative 3

The Alternative 3 route crosses approximately 14 miles of agricultural areas, and 11 miles in grazing land. The effects to agricultural resources would be similar as those for the Proposed Project. Impacts would be less than significant.

4.2.8 References

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4.3 Air Quality

This section describes the potential air quality impacts of the Proposed Project. Proposed mitigation measures 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, 2002b).

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})[1], 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, 2008). 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.

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[1]The USEPA determined in October 2006 that the SJVAB attained the federal PM_{10} standards. However, the determination does not constitute a redesignation to attainment per section 107(d)(3) of the Federal Clean Air Act. The SJVAB will continue to be designated nonattainment until all of the Section 107(d)(3) requirements are met (SJVAPCD, 2008).

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

Air Pollutant	Federal Primary Standard Averaging Time and Concentration	SJVAB Attainment Status Federal	State Standard Averaging Time and Concentration	SJVAB Attainment Status State
Ozone (O_3)	8-hr avg. 0.08 ppm (157 $\mu g/m^3$)	Serious Nonattainment[1,2]	8-hr avg. 0.070 ppm (137 $\mu g/m^3$)	Nonattainment
	None	--	1-hr. avg. 0.09 ppm (180 $\mu g/m^3$)	Severe Nonattainment
Carbon Monoxide (CO)	8-hr avg. 9 ppm (10 mg/m^3)	Attainment/ Unclassified	8-hr avg. 9.0 ppm (10 mg/m^3)	Attainment/ Unclassified
	1-hr avg. 35 ppm (40 mg/m^3)	Attainment/ Unclassified	1-hr avg. 20 ppm (23 mg/m^3)	Attainment/ Unclassified
Nitrogen Dioxide (NO_2)	Annual arithmetic mean 0.053 ppm (100 $\mu g/m^3$)	Attainment/ Unclassified	Annual arithmetic mean 0.030 ppm (56 $\mu g/m^3$)	Attainment
	None	--	1-hr avg. 0.18 ppm (338 $\mu g/m^3$)	Attainment
Sulfur Dioxide (SO_2)	Annual arithmetic mean 0.030 ppm (80 $\mu g/m^3$)	Attainment/ Unclassified	24-hr avg. 0.04 ppm (105 $\mu g/m^3$)	Attainment
	24-hr avg. 0.14 ppm (365 $\mu g/m^3$)	Attainment/ Unclassified	1-hr. avg. 0.25 ppm (655 $\mu g/m^3$)	Attainment
Suspended Particulate Matter (PM_{10})	None	--	Annual arithmetic mean 20 $\mu g/m^3$	Nonattainment
	24-hr avg. 150 $\mu g/m^3$	Serious Nonattainment[3]	24-hr avg. 50 $\mu g/m^3$	Nonattainment

Air Pollutant	Federal Primary Standard Averaging Time and Concentration	SJVAB Attainment Status Federal	State Standard Averaging Time and Concentration	SJVAB Attainment Status State
Particulate Matter ($PM_{2.5}$)	Annual arithmetic mean 15 $\mu g/m^3$	Nonattainment[4]	Annual arithmetic mean 12 $\mu g/m^3$	Nonattainment
	24-hr avg. 35 $\mu g/m^3$	Nonattainment[4]		
Sulfates	None	--	24-hr avg. 25 $\mu g/m^3$	Attainment
Lead	Calendar quarter 1.5 $\mu g/m^3$	No designation/ classification	30-day avg. 1.5 $\mu g/m^3$	Attainment
Hydrogen Sulfide (H_2S)	None	--	1-hr. avg. 0.03 ppm (42 $\mu g/m^3$)	Unclassified
Visibility-Reducing Particles	None	--	See (5) below	Unclassified
Vinyl Chloride	None	--	24-hr avg. 0.01 ppm (26 $\mu g/m^3$)	Attainment

Source: SJVAPCD, 2008; CARB, 2008
$\mu g/m^3$ = microgram per cubic meter
mg/m^3 = milligram per cubic meter
ppm = parts per million

[1]Nonattainment designations can be subdivided into five categories (marginal, moderate, serious, severe, and extreme) to reflect the extent of the pollution and the expected time period required to achieve attainment.
[2]The SJVAPCD and CARB have requested the USEPA to reclassify the SJVAB as extreme nonattainment for the federal 8-hour ozone standards. It will become effective upon USEPA final rulemaking after a notice and comment process; it is not yet in effect.
[3]The USEPA determined in October 2006 that the SJVAB attained the federal PM_{10} standards. However, the determination does not constitute a redesignation to attainment per section 107(d)(3) of the Federal Clean Air Act. The SJVAB will continue to be designated nonattainment until all of the Section 107(d)(3) requirements are met.
[4]The SJVAB has been designated nonattainment for the 1997 $PM_{2.5}$ federal standards. USEPA designations for the 2006 PM 2.5 standards will be finalized in December 2009. However, the SJVAPCD has determined, as of the 2004-06 $PM_{2.5}$ data, that the SJVAB has attained the 1997 24-Hour $PM_{2.5}$ standard.
[5]State criterion for nonattainment of visibility-reducing particles is the amount of particles present to produce an extinction coefficient of 0.23 per kilometer when relative humidity is less than 70 percent.

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.

California Greenhouse Gas Reduction Initiatives. Greenhouse gas (GHG) emissions are not yet required to be evaluated under current CEQA regulations, so no threshold criteria exist. However, a discussion of GHG emissions is presented here for informational purposes only, in anticipation of future requirements.

Minimal short-term emissions would occur during the Proposed Project's construction activities, and minimal long-term emissions would occur as a result of operation and maintenance of the Proposed Project. GHG emissions from construction activities would be expected from fuel combustion in the construction equipment and on-road vehicles. The most common combustion-related GHG pollutants are CO_2, nitrous oxide (N_2O), and methane. Less than 2,200 tons of CO_2 are expected to be emitted from the Proposed Project's construction activities, approximately 44 tons $CO_2(eq)$[1] of N_2O, and approximately 3 tons $CO_2(eq)$ of methane.

Sulfur hexafluoride is an insulating gas within the equipment that can leak out as a result of design, operation, maintenance, or equipment failure. Circuit breakers are the only new equipment identified in the Proposed Project that may contain sulfur hexafluoride. At this time, SCE anticipates installing 4 new circuit breakers and salvaging 2 existing circuit breakers for the Proposed Project. The new circuit breakers are estimated to each contain approximately 242 pounds of sulfur hexafluoride, totaling approximately 968 pounds. The circuit breakers to be salvaged are each estimated to contain approximately 270 pounds of sulfur hexafluoride.

Historically, sulfur hexafluoride emission rates from breakers may have exceeded 6 percent per year but they have been reduced significantly, due to new field maintenance policies and new equipment designs. In contrast, the leakage rate for the new circuit breakers installed as part of

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[1] $CO_2(eq)$ are carbon dioxide equivalents, a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential, when measured over a specified timescale (generally, 100 years) (IPCC, 2007).

the Proposed Project would be estimated to be less than 1 percent per year of the total sulfur hexafluoride contained in the equipment. Presently the leakage from the two circuit breakers that would be salvaged as part of the Proposed Project is estimated to be 32.4 pounds of sulfur hexafluoride per year. After the Proposed Project is built, the leakage rate from the Proposed Project components (four new circuit breakers) is estimated to be 9.7 pounds of sulfur hexafluoride per year. Therefore, the Proposed Project would result in a net decrease of 22.7 pounds of sulfur hexafluoride per year being emitted.

No CEQA guidelines presently exist regarding GHG emissions. However, because the combustion emissions and sulfur hexafluoride emissions would be minimal for the Proposed Project, the GHG emissions from the Proposed Project would not likely contribute significantly to the overall regional or global emissions.

San Joaquin Air Pollution Control District. In addition to supporting CARB and USEPA air quality programs, the SJAPCD also develops plans and implements control measures of regulated pollutants in the San Joaquin Air Basin, primarily affecting stationary sources such as factories and plants. In addition, the SJAPCD 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; or
- 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, 2002a), and the Guide for Assessing and Mitigating Air Quality Impacts Technical Document Information for Preparing Air Quality Sections in EIRs (SJVAPCD, 2002b).

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.

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} 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.

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.

Using the emission factors published in URBEMIS2007 air quality modeling software, the PM_{10} emissions from construction areas are not expected to exceed 1 pound per day with no mitigation measures in place, and particulate emissions from construction activities would be less with the implementation of the required SJVAPCD control measures. Impacts would be less than significant.

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 (SJAPCD, 2002a). 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 limited duration and the use of construction equipment over a widely-distributed area, construction of the Proposed Project would realistically be considered less impactful 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, 2002a). The construction of the Proposed Project would result in impacts to air quality below those normally considered to be significant. In addition, the limited duration of construction for the Proposed Project would be substantially less than that expected from a project requiring a quantitative analysis of emissions. 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 location 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. Schools, hospitals, and residential areas are all examples of sensitive receptors. The URBEMIS2007 model estimated PM_{10} emissions from construction areas not to exceed 1 pound per day. With the implementation of the required SJVAPCD Regulation VIII Control Measures, the PM_{10} emitted from construction activities would likely be less than that estimation.

The removal of the residence along the ROW to be acquired would require an inspection for asbestos-containing material prior to its demolition. The inspector would be certified by CalOSHA and would consult with the SJVAPCD Asbestos Coordinator prior to removal of the residence. 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.

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, 2002a). 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, 2002a).

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 annual inspections and routine maintenance of the transmission lines 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, 2002a). The low 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 normally 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 annual inspection and routine maintenance of the transmission lines 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 Mitigation

Because the Proposed Project would result in less than significant impacts to air quality, no mitigation measures are required.

4.3.6 Alternative 2

The longer length of Alternative 2 route would require more pole footings and tower footings to be installed, and would require more access roads and spur roads to be graded. These activities would result in the use of heavy equipment for a longer period of time during construction, and a slight increase in impacts to air quality when compared to the Proposed Project. However, impacts to air quality for Alternative 2 are expected to be less than significant.

4.3.7 Alternative 3

Alternative 3 would require a more extensive geotechnical investigation to include the evaluation of the landslide hazard on Stokes Mountain, which would include at least ten extra borings up to 100 feet deep. In addition, the longer length of the route would require installation of a greater number of pole footings and tower footings, and would require more access roads and spur roads to be graded. These activities would result in the use of heavy equipment for a longer period of time during construction, and an increase in impacts to air quality. Due to the severe hydrologic and erosion conditions for Alternative 3, operation of the project would require careful and more intensive maintenance of access roads and spur roads, resulting in greater operational impacts to air quality than those for the Proposed Project. However, impacts to air quality for Alternative 3 are expected to be less than significant.

4.3.8 References

California Air Resources Board (CARB). 2008. [online] Ambient Air Quality Standards. Online: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. [cited January 2008].

Intergovernmental Panel on Climate Change (IPCC). 2007: Summary for Policymakers. In: Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Jones & Stokes Associates. 2007. Software User's Guide: URBEMIS2007 for Windows with Enhanced Construction Module. Version 9.2 Emissions Estimation for Land Use Development Projects. Prepared by Jones & Stokes Associates.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2000. Environmental Review Guidelines-Procedures for Implementing the California Environmental Quality Act. Prepared by the Mobile Source/CEQA Section of the Planning Division.

SJVAPCD. 2002a. Guide for Assessing and Mitigating Air Quality Impacts. Prepared by the Mobile Source/CEQA Section of the Planning Division.

SJVAPCD. 2002b. Guide for Assessing and Mitigating Air Quality Impacts Technical Document-Information for Preparing Air Quality Sections in EIRs. Prepared by the Mobile Source/CEQA Section of the Planning Division.

SJVAPCD. 2008. [online] Ambient Air Quality Standards and Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm. [cited January 2008].

4.4 Biological Resources

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

4.4.1 Environmental Setting

The physiography of the northwestern Tulare County region from west to east is the flat Central Valley gradually rising in elevation and giving way to the rocky foothills of the Sierra Nevada Mountains. Drainages originating from the Sierra Nevada Mountains have carried rock detritus and plentiful amounts of water to the valley floor, which have produced rich soils and vast riparian areas, both of which support a rich, varied, and unique ecology.

There are two major drainages and several small drainages that originate from the Sierra Nevada Mountains and spread over the northwestern Tulare County region. The Kaweah River, a major drainage in the area, has several small distributaries, including the St Johns River, Mill Creek, Packwood Creek, Cameron Creek, and Deep Creek. A second, but minor drainage originating from the Sierra Nevada Mountains, is Yokohl Creek. Many reaches of these natural and modified stream channels have the ability to support adjacent wetlands and riparian areas, and function as wildlife corridors (Tulare County, 2007b; City of Visalia, 1996; City of Farmersville, 2002).

The natural vegetation of the northwestern Tulare County includes purple needlegrass grassland, valley oak woodland, Fremont cottonwood riparian woodland, vernal pools, wetland communities, blue oak woodland, chamise scrub, mixed chaparral, and foothill pine woodland (USFS, 1997, Holland, 1986). Wildlife associated with the area include mule deer, black-tailed deer, coyotes, jackrabbits, cottontails, ground squirrels, kangaroo rats, kit fox, and muskrats. Birds include waterfowl, hawks, golden eagles, falcons, ravens, owls, turkey vultures, white-tailed kites, herons, northern mockingbird, western scrub jay, western meadowlark, quail, and mourning dove (Tulare County, 2007a).

The US Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) have identified several special status species that have been documented in the California Natural Diversity Database (CNDDB) (for details about listed and sensitive species in the area, please see Section 4.4.4, Biological Resources Impact Analysis). In addition, the CNDDB has several documented occurrences of sensitive natural communities in northwestern Tulare County, including great valley oak riparian forest, northern hardpan vernal pool, and sycamore alluvial woodland (Tulare County, 2007a). The Sequoia Riverlands Trust, a non-profit organization committed to land stewardship, conservation, and education, manages more than 4,500 acres of nature reserves in Tulare County (SRT, 2008).

The federal Endangered Species Act requires that areas be designated as critical habitat when listing new endangered or threatened species. State agencies that propose, fund, or issue a permit for a project that may affect a federally listed species or critical habitat must prepare a Habitat Conservation Plan as part of an application for a permit from the USFWS. The critical habitat in northwestern Tulare County is shown on Figure 4.4-1, Designated Critical Habitat in the Vicinity of the Proposed Project, and illustrates areas that have greater potential of supporting federally listed species in the region.

There are several areas in northwestern Tulare County that are classified as wetlands. Wetland areas are delineated based on having three parameters present: wetland hydrology, hydric soils, and hydrophytic vegetation. Northwestern Tulare County also has a unique and threatened wetland type known as vernal pools. Vernal pools are slow-draining depressions in the landscape that are seasonally flooded and support a large number of threatened and endangered species (Tulare County 2007a).

The Farmersville-based Kaweah Delta Water Conservation District (KDWCD) is developing a Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) in Tulare County. This plan would cover several species and establish avoidance and mitigation measures for ongoing and future projects implemented by the KDWCD, and are not set up for third party participation (KDWCD, 2008). Tulare County presently participates in the Kern Water Bank HCP with neighboring Kings and Kern Counties. Tulare County also recently studied the feasibility of developing a Mitigation and Conservation Bank (Tulare County, 2007b).

4.4.2 Regulatory Setting

Federal Endangered Species Act. The Endangered Species Act (ESA) (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 ESA forbids federal agencies from authorizing, funding, or carrying out actions that may jeopardize endangered species. The ESA forbids any government agency, corporation, or citizen from taking (i.e. harming, harassing, or killing) endangered animals without a permit. The administering agency for terrestrial and avian species, as well as for non-anadromous freshwater fish, is the USFWS. Section 10 of the ESA 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.

Clean Water Act. The Clean Water Act regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The US Army Corps of Engineers (Corps) and the United States Environmental Protection Agency (USEPA) regulate the discharge of dredged or fill material into Waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA). Projects that would result in the placement of dredged or fill material into Waters of the US require a Section 404 permit from the Corps. Some fill activities may be authorized under general permits if specific conditions are met. Permits issued by the Corps would require the Central Valley Regional Water Quality Control Board (CVRWQCB) to issue a water quality certification pursuant to Clean Water Act Section 401 (Section 401), so the Proposed Project complies with state water quality standards.

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.

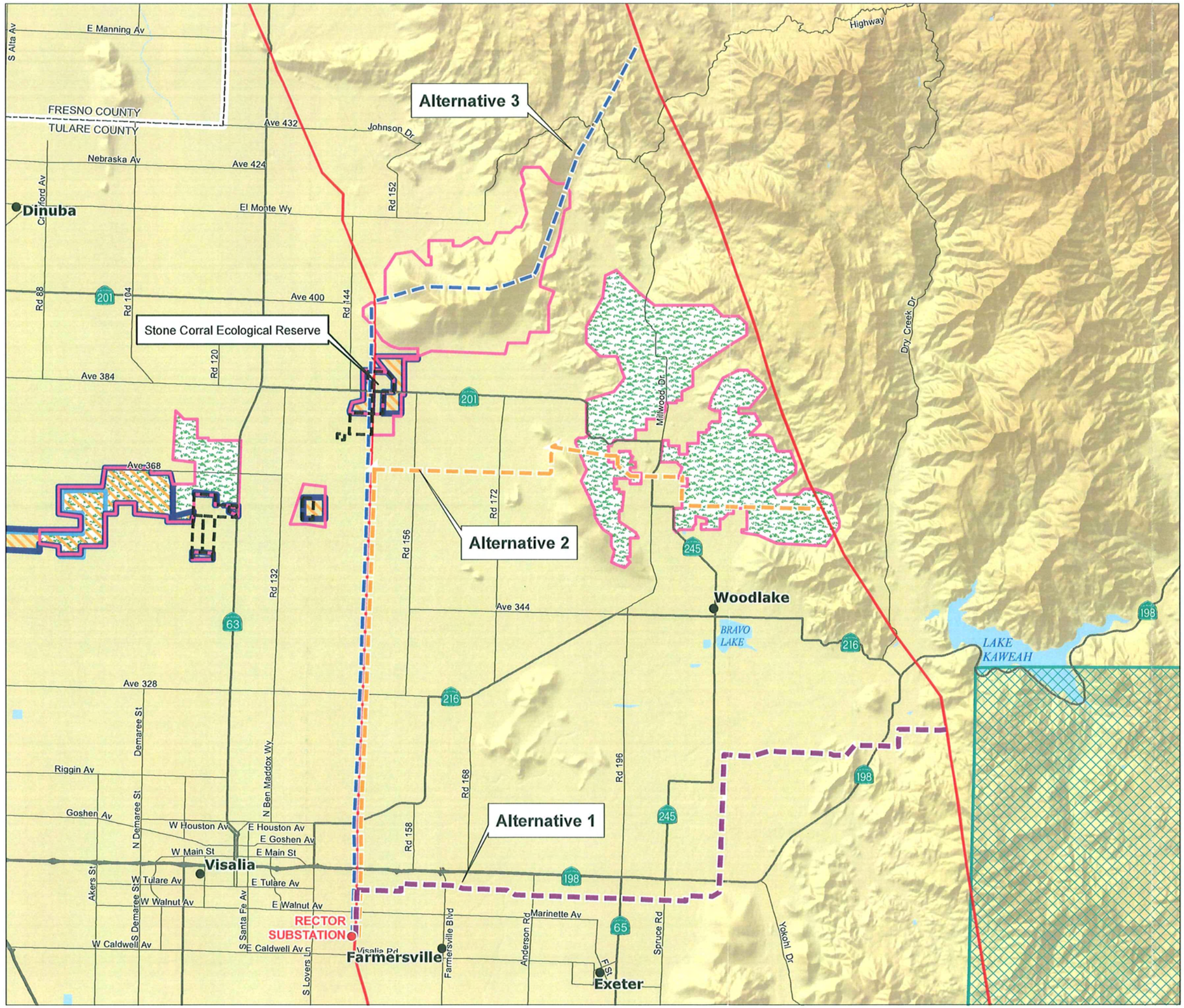
California Fish and Game Code Section 3503.5. Birds of prey are protected in California under the Fish and Game Code, Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or 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.

California Fish and Game Code Sections 3511 and 5050. California Fish and Game Code sections 3511 and 5050 prohibit the taking and possession of birds and reptiles listed as "fully protected." The administering agency is the CDFG.

CEQA Guidelines Section 15380. CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria.

City of Visalia Municipal Code. Chapter 12.24 of the City of Visalia Municipal Code provides for the preservation and protection of native Valley oak trees and landmark trees. Any person desiring to remove an oak tree or to prune an oak tree limb with a diameter of two inches or greater, must first obtain a permit from the City. In addition, when proposed developments encroach into the canopy area of any oak tree, special construction to allow the roots to breathe and obtain water, as determined by the Public Works Director, shall be required with respect to any application for building or development permit.

Figure 4.4-1
Designated Critical Habitat in the Vicinity of Proposed Project



Vernal Pool Fairy Shrimp (U.S. FWS, 2006)
Vernal Pool Tadpole Shrimp (U.S. FWS, 2006)
San Joaquin Valley Orcutt Grass (U.S. FWS, 2006)
Tiger Salamander (U.S. FWS, 2005)
Hoover's Spurge (U.S. FWS, 2006)
California Condor (U.S. FWS, 1993)

Stone Corral Ecological Reserve (CDFG, 2008)

Routes

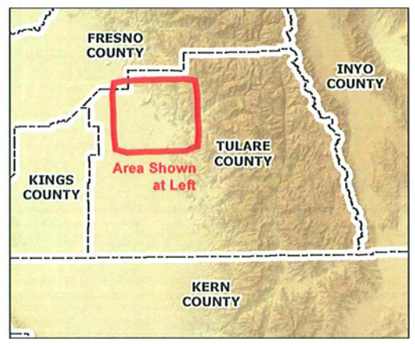
Alternative 1 (Proposed Project)
Alternative 2
Alternative 3

Existing Electrical (SCE, 2007)

220 kV Transmission Line
Substation

Transportation Lines (TBM, 2008)
County Boundaries (TBM, 2008)
Water (TBM, 2008)
Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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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 California Department of Fish and Game or US Fish and Wildlife Service;

- 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 California Department of Fish and Game or US Fish and Wildlife Service;

- 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, coastal, etc.) 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 corridors, 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; or

- 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

The evaluation of impacts to biological resources included a review of applicable documents and the identification of resources during several aerial and reconnaissance-level surveys conducted by qualified biologists. The details and results of this evaluation are presented below.

Literature Search

To identify the existing and potential biological resources present in the vicinity of the Proposed Project, a focused literature search was performed using the CNDDB, occurrence records for sensitive species and habitats for the Woodlake, Ivanhoe, Exeter, Rocky Hill, Visalia, Monson, Stokes Mountain, Tucker Mountain, Kaweah, and Chicken Coop Canyon 7.5-minute US Geological Survey quadrangles were reviewed. Other references used include the California State University, Fresno herbarium and zoology collections, the California State University, Bakersfield herbarium and zoology collections, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California, The Jepson Manual, the Recovery Plan for Upland Species of the San Joaquin Valley, and several other published and technical references for the region.

Aerial and Reconnaissance-level Surveys

During the development of the Proposed Project and its alternatives, a total of 11 surveys were conducted in May 2005, June 2005, April 2006, May 2006, June 2006, February 2007, March 2007, November 2007, February 2008, and March 2008. The surveys consisted of reconnaissance level surveys conducted aerially from a helicopter or from the ground within a 100-foot buffer of the proposed transmission line centerline where access was available.

Most of the Proposed Project was accessible during the field surveys. Portions of Alternatives 2 and 3 were not accessible due to the lack of landowner permission. In cases where access was not possible, existing data from the previously described sources as well as data gathered during aerial reconnaissance surveys were utilized to analyze habitat conditions and the potential occurrence of the targeted biological resources.

The field surveys included wildlife and botanical observations and general field investigations (where accessible from public facilities) within a 100-foot buffer of the centerline of the Proposed Project. The surveys included field observations of birds, mammals, and other wildlife. During the field surveys, lists of vascular plant species and wildlife observed were compiled, and habitat types were identified with special emphasis placed on identifying the indicator species of sensitive or unique habitats in the area.

Any sensitive species potentially occurring in the region were generally in an identifiable condition at the time of the surveys as determined by checking locations with similar habitat where the species is known to occur. The presence or absence of suitable habitats capable of supporting sensitive species was emphasized during these surveys.

Although several biological surveys occurred during the planning of the Proposed Project and its alternatives, additional surveys for sensitive plant and wildlife species would occur during the preconstruction Environmental Surveys for the Proposed Project to determine if these species are present. If present, SCE would either modify the project design to avoid the resource, or to implement Applicant Proposed Measures to minimize the impact to these species from project-related activities.

Results of Literature Search and Aerial and Reconnaissance-level Surveys

The information gathered by the literature search and the reconnaissance-level surveys is presented below. This section describes the vegetation communities encountered by the Proposed Project and provides lists of potentially occurring special status species and their likelihood for occurrence. The results are summarized below.

Common Vegetation Communities

Eight types of vegetation communities were identified in the vicinity of the Proposed Project. Four of the eight communities observed are common along the Proposed Project and its alternatives, and include Disturbed/Developed, Agricultural, Non-native Annual Grassland, and Blue Oak Woodland.

Disturbed and Developed. Some of the described agricultural areas intergrade with heavily disturbed or ruderal areas, such as roadsides, ditch banks, vacant lots, urban or agricultural buildings, and other similar disturbed or highly modified areas. These areas are dominated by weedy species, such as prickly lettuce (*Lactuca serriola*), milk thistle (*Silybum marianum*), horseweed (*Conyza canadensis*), telegraph weed (*Heterotheca grandiflora*) and Bermuda grass (*Cynodon dactylon*). Many urban wildlife species are present in these areas, including American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), and northern mockingbird (*Mimus polyglottos*).

Agricultural. Major portions of the Proposed Project are located in agricultural areas that are intensively cultivated. The agricultural areas of the Proposed Project are the dominant habitat type east of the City of Visalia and west of Yokohl Creek. Irrigated pastures for livestock are also present in these areas. Agricultural areas primarily support Introduced Mediterranean grasses dominated by dallis grass (*Paspalum dilatatum*), perennial ryegrass (Lolium perrene), and herbaceous species, such as clover (*Trifolium sp.*). The most common wildlife include American crow, European starling (*Sturnus vulgaris*), house sparrow, and mourning dove. In general, agricultural lands do not support native vegetation or sensitive species. However, in the area of the Proposed Project, agricultural areas have the potential to support a few sensitive species such as the San Joaquin kit fox (*Vulpes macrotis mutica*) and burrowing owl (*Athene cunicularia*).

Non-native Annual Grassland. The annual grassland vegetation community in the vicinity of the Proposed Project is mostly found near the connection point at Mile 18.5. The grasslands throughout the region have been moderately impacted by long-term livestock grazing practices. The annual grassland is dominated by nonnative annual grasses and forbs, intermixed with a variety of native forbs and grasses. The dominant grasses present include soft chess, ripgut brome (*B. diandrus*), red brome (*B. madritensis rubens*), slender wild oat (*Avena barbata*), foxtail barley (*Hordeum jubatum*), rattail fescue (*Vulpia megalura*), and annual rye (*Lolium multiflorum*). The dominant forbs are filaree (*Erodium cicutarium*), fiddleneck (*Amsinckia intermedia*), purple brodiaea (*Dichelostemma pulchella*), pepperweed (*Lepidium nitidum*), blow-wives (*Achyrachaena mollis*), bicolor lupine (*Lupinus bicolor*), popcorn flower (*Plagiobothrys nothofulvus*), lotus (*Lotus micranthus*), and gilia (*Gilia tricolor*). Vernal pools and swales (described in the section below) are also scattered throughout the annual grasslands in the region but are mostly found in low elevation areas where the heavier clay soils were deposited. Common wildlife species found in the nonnative annual grasslands in the region include gopher snake (*Pituophis melanoleucus*), western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), red-tailed hawk (*Buteo jamaicensis*), western scrub jay, California ground squirrel (*Spermopiluus beecheyi)*, and pocket gopher (*Thomomys sp.*).

Blue Oak Woodland. The limited amount of blue oak woodland habitat observed near the Proposed Project is located in small, scattered stands interspersed with nonnative grasslands near the connection point with the Big Creek 3-Springville and Big Creek 4-Springville 220 kV transmission lines. The dominant plant species present in this community include blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizenii*), buckeye (*Aesculus californica*), coffee berry (*Rhamnus californica*), poison oak (*Taxicodendron diversilobum*), Bentham's lupine (*Lupinus benthamii*), tarweed (*Holocarpha heermanii*), caterpillar phacelia (*Phacelia*

cicutaria), fiddleneck, and soft chess (*Bromus hordeaceus*). Wildlife species commonly associated with blue oak woodland habitat include alligator lizard (*Gerrhonotus sp.*), common king snake (*Lampropeltis getulus*), acorn woodpecker (*Melanerpes formicivorus*), American kestrel (*Falco sparverius*), barn swallow (*Hirundo rustica*), kingbird (*Tyrranus sp.*), mourning dove, tree swallow (*Tachycineta bicolor*), western bluebird (*Sialia mexicana*), California ground squirrel, northern raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*).

Sensitive Vegetation Communities

Several of the vegetation communities occurring in the vicinity of the Proposed Project are considered sensitive or have special status due to their natural rarity and their decline as a result of development, and/or due to the number of sensitive plant or wildlife species dependent upon them. Sensitive habitats also include those regulated by the federal government under the Clean Water Act (CWA) (i.e., jurisdictional wetlands and Waters of the United States), or the Endangered Species Act (i.e., site-specific designated critical habitat areas for federally listed wildlife species). Vegetation communities considered to have greater sensitivity include Valley Oak Woodland, Emergent Marsh/Fresh Water Seep, Valley Mixed Riparian Woodland, and Vernal Pools and Swales. Details of these vegetation communities are provided below.

Valley Oak Woodland. The valley oak woodlands near the Proposed Project are essentially a small, remnant community of the once much larger valley oak plant communities that historically were found in the eastern San Joaquin Valley areas of Tulare County. The remnant stands of valley oak (*Quercus lobata*) present along the Proposed Project, east of Road 168 and south of Highway 198, represent an example of this habitat type. These valley oak stands are the southern remnants of the once extensive valley oak forests that are now concentrated in the current Kaweah Oaks Preserve to the north of the Proposed Project. The Proposed Project would pass through small degraded stands of this community south of Highway 198 near Deep Creek and Johnson Slough east of the City of Farmersville. Coast live oak (*Quercus agrifolia*) is found along the coastal rivers of central and southern California, while valley oak dominates this zone in the central San Joaquin Valley. Common wildlife species associated with this remnant oak woodland include gopher snake, western fence lizard, American crow, American kestrel, American robin, house finch (*Carpodacus mexicanus*), mourning dove, western scrub jay, and red-tailed hawk.

Emergent Marsh/Freshwater Seep. Emergent marsh/freshwater seep habitats are found on the banks of Yokohl Creek north of Highway 198 and some of the other irrigation canals and similar water-transport facilities crossed by the Proposed Project, such as Deep Creek and Johnson Slough east of Farmersville. These habitats are dominated by buttercup (*Ranunculus californicus*), cattail (*Typha latifolia*), Mediterranean barley (*Hordeum marinum gussoneanum*), rabbitfoot grass (*Polypogon monspeliensis*), sour dock (*Rumex crispus*), himalaya blackberry (*Rubus discolor*), and spikerush (*Eleocharis acicularis*). The most common wildlife species associated with this wetland habitat include garter snake (*Thamnophis sp.*), great blue heron (*Ardea herodias*), northern harrier (*Circus cyaneus*), red-winged blackbird (*Agelaius phoeniceus*), snowy egret (*Egretta thula*), and northern raccoon. The emergent marsh/freshwater seep habitats are considered to be sensitive, because they have the potential to qualify as wetlands and their importance as plant and wildlife habitat.

Valley Mixed Riparian Woodland. Valley mixed riparian woodland occurs along streams and impoundments in the San Joaquin Valley with permanent or intermittent surface water. The Kaweah River, St Johns River, Mill Creek, Deep Creek, Yokohl Creek, Rattlesnake Creek, Cottonwood Creek, and canals in the vicinity of the Proposed Project support this habitat. The valley mixed riparian woodland at some of these sites has been degraded by long-term cattle grazing, trash dumping, and bank clearing (including herbicide use), which have significantly reduced the vigor and reproductive output of the dominant plant species. In central California, only 3 to 5 percent of the pre-settlement riparian forest remains, the rest having been converted primarily to farming or urban uses (Tibor, 2001). This habitat type occupies a narrow range of sites within the vicinity of the Proposed Project. Valley mixed riparian woodland is present in a scattered zone along the main fork of the St Johns River in the central portion of the Proposed Project, in a fairly continuous zone along the banks of the Kaweah River in the vicinity of the City of Visalia and community of Lemon Cove, and along some of the irrigation canals crossed by the Proposed Project. Valley mixed riparian woodland has an overstory dominated by various tree species, such as arroyo willow (*Salix lasiolepis*), California sycamore (*Plantanus racemosa*), Gooding's willow (*S. goodingii*), button-willow (*Cephalanthus occidentalis*) and Oregon ash (*Fraxinus latifolia*). Understory species include rush (*Juncus balticus*), seep monkeyflower (*Mimulus guttatus*), spikerush, himalaya blackberry, elderberry (*Sambucus mexicanus*) and stinging nettle (*Urtica dioica holosericea*). Wildlife occurring in this habitat include great blue heron, red-winged blackbird, tri-colored blackbird (*Agelaius tricolor*), belted kingfisher (*Ceryle alcyone*) Bullock's oriole (*Icterus bullockii*), northern harrier, great egret (*Ardea alba*), red-tailed hawk, western scrub jay, violet-green swallow (*Tachycineta bicolor*), and many other resident and migratory species. The Valley Mixed Riparian Woodland also provides important wildlife corridors and connectivity to other habitat types. Valley mixed riparian woodland qualifies as a sensitive natural community because of its current scarcity relative to past extent and its importance to dependent plant and wildlife species. Much of this habitat type likely qualifies as a jurisdictional wetland, further supporting the designation as a sensitive natural community. The major rivers and creeks that are present in the vicinity of the Proposed Project also qualify as "Waters of the United States" by Corps criteria.

Vernal Pools and Swales. Vernal pools are hardpan-floored depressions that fill with rainfall and surface runoff, forming seasonal ponds. Water accumulates in vernal pools because the low depressions in the nearly level topography are underlain by an impervious layer that prevents infiltration of water into the soil profile. Vernal "swales" are narrow, characteristically linear, seasonal wetland communities found in low-lying drainage ways within hilly or mountainous terrain where surface water collects and flows down slope. The vernal pools in the vicinity of the Proposed Project support spiny-sepaled button celery (*Eryngium spinosepalumi*), which is a CNPS-listed sensitive plant species, loosestrife (*Lythrum hyssopifolia*), goldfields (*Lasthenia fremontii*), woolly heads (*Psilocarphus tenellus*), Hoover's spurge (*Chamaesyce hooveri*), which is a listed federally threatened species, popcorn flower, seep grass (*Crypsis schoenoides*), foxtail (*Alopecurus howellii*), spikerush, quillwort (*Isoetes sp.*) and many other native annuals. Although vernal pools are an ephemeral aquatic habitat, many invertebrates and amphibians have adapted to this unique resource. When standing water is available, the California tiger salamander (*Ambystoma tigrinum californiense*), western spadefoot toad (*Scaphiopus hammondii*), and Pacific tree frog (*Hyla regilla*) may use the pools for egg-laying and for the development of young. Aquatic invertebrates, such as clam shrimp, fairy shrimp (*Branchinecta lynchi*), which is a federally listed threatened species, tadpole shrimp, cladocerans, and

copepods, may also inhabit vernal pools. In winter and spring, water birds, such as the mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), killdeer (*Charadrius vociferous*), great blue heron, and great egret (*Ardea alba*), may use vernal pools for resting and foraging grounds. Western kingbird (*Tyrannus verticalis*), black phoebe (*Sayornis nigricans*), and Say's phoebe (*Sayornis saya*) feed on flying insects congregating above vernal pools. Vernal pools are considered "sensitive natural communities" because of their current local and regional scarcity relative to their past extent; their importance to many plant species that occur only in vernal pools, and their value to migratory water birds and other wildlife. Many of the remaining vernal pool sites in the Central Valley are threatened by habitat conversion to agricultural and urban uses. The CNDDB designates vernal pools as a community of highest inventory priority because of their values and ongoing threats to their existence (Holland, 1986).

Vernal pools in the vicinity of the Proposed Project may qualify as "jurisdictional wetlands" according to Corps criteria. Most of the swales also likely qualify as jurisdictional wetlands by Corps criteria. Existing records and available information indicate that it is unlikely that any vernal pools occur along the Proposed Project; however some of the grasslands in the eastern portion of the ROW have not been completely investigated yet. Wetland habitats are under Corps jurisdiction pursuant to Section 404 of the CWA of 1972, as amended in 1977 and 1984. Wetlands under the jurisdiction of the Corps must meet specific vegetation, hydrologic, and soil criteria. Wetlands serve many functions, including flood and sediment control, habitat for rare and common species, corridors for wildlife movement, and control of water quality and erosion[1].

Riparian habitats are considered to be sensitive communities because they support a diverse association of resident and nesting wildlife and native plant species. These riparian habitats are found along the natural watercourses along the Proposed Project ROW and may qualify as wetlands if vegetation, hydrologic and soils criteria are present.

In addition to the habitat types that have a high potential for special status species occurrence, there are other natural features in the vicinity of the Proposed Project that are conducive to the protection of biological resources. For example, there are several bodies of water in the vicinity of the existing ROW, including the Kaweah River, St Johns River, Rattlesnake Creek, Cottonwood Creek, Yokohl Creek, and several other drainages that attract migratory bird species as part of the Pacific Flyway. These waterbodies and drainages provide rest and forage areas for numerous birds during the migratory seasons. In addition, terrestrial wildlife species tend to travel along natural drainages that provide protective cover from predators and a source of forage. There are several natural and man-made drainage features within the vicinity of the Proposed Project that may facilitate wildlife movement through the overall region. Also, the Kaweah Oaks Preserve and other open space areas in the eastern portion of the ROW attract wildlife species and promote wildlife movement.

Special Status Plants with Potential to Occur

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[1]There have been several recent challenges to the authority of the U.S. Army Corps of Engineers (Corps) to regulate "isolated wetlands," including the 2001 U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, and in 2006 in *Carabell v. United States Army Corps of Engineers* and *Rapanos v. United States*. The Corps is currently evaluating wetland regulatory jurisdiction on a case-by-case basis.

Special-status plant species include those species listed by the USFWS or CDFG as rare, endangered, threatened, proposed, or candidate species, and those listed by federal land management agencies as sensitive or rare. Sensitive plant species include those occurring on the CNPS Inventory of Rare and Endangered Vascular Plants of California (Tibor, 2001).

The presence of species and habitat ratings are based on the previously described field surveys. Special-status plant species known to occur or with the potential to occur in the vicinity of the Proposed Project are listed below in Table 4.4-1, Special-Status and Covered Plant Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives. Figure 4.4-2, Special Status Species with Occurrences in the Vicinity of the Proposed Project, illustrates special status plant and wildlife species that have been known to occur in the vicinity of Proposed Project and its alternatives. A detailed discussion of the plant species can be found in Biological Resources Study Report, San Joaquin Cross Valley Loop Transmission Line Project.

Special Status Animals with Potential to Occur

A majority of the vegetation communities in the vicinity of the Proposed Project provide habitat for one or more of the sensitive or covered wildlife species known to occur or with the potential to occur. Based on literature searches and reconnaissance and habitat surveys, 17 wildlife species considered sensitive by the USFWS or CDFG, or that are on other watch lists, are known to occur or have the potential to occur in the vicinity of the Proposed Project. These species, their status, documented occurrence, and the potential for their presence are summarized in Table 4.4-2, Special-Status Wildlife Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives.

Four of these species are listed as endangered and three are listed as threatened by the USFWS. The CDFG has listed three of these species as endangered and two as threatened, and it lists ten species of special concern. One species, the golden eagle (*Aquila chrysaetos*), has the status of fully protected under the CDFG Code, Title 14 and protection under the federal Bald and Golden Eagle Protection Acts.

In order to summarize the potential occurrence of special status species along the Proposed Project and its alternatives, information used in Figure 4.4-1, Designated Critical Habitat in the Vicinity of the Proposed Project, and Figure 4.4-2, Special Status Species with Occurrences in the Vicinity of the Proposed Project, were combined to show areas having a higher potential for special status species. Figure 4.4-3, Areas of Special Status Species Occurrence, illustrates the relative potential for encountering special status species along the Proposed Project and its alternatives (CNDDB, 2008; USFWS 1993, 2005, 2006).

Table 4.4-1 Special-Status and Covered Plant Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives

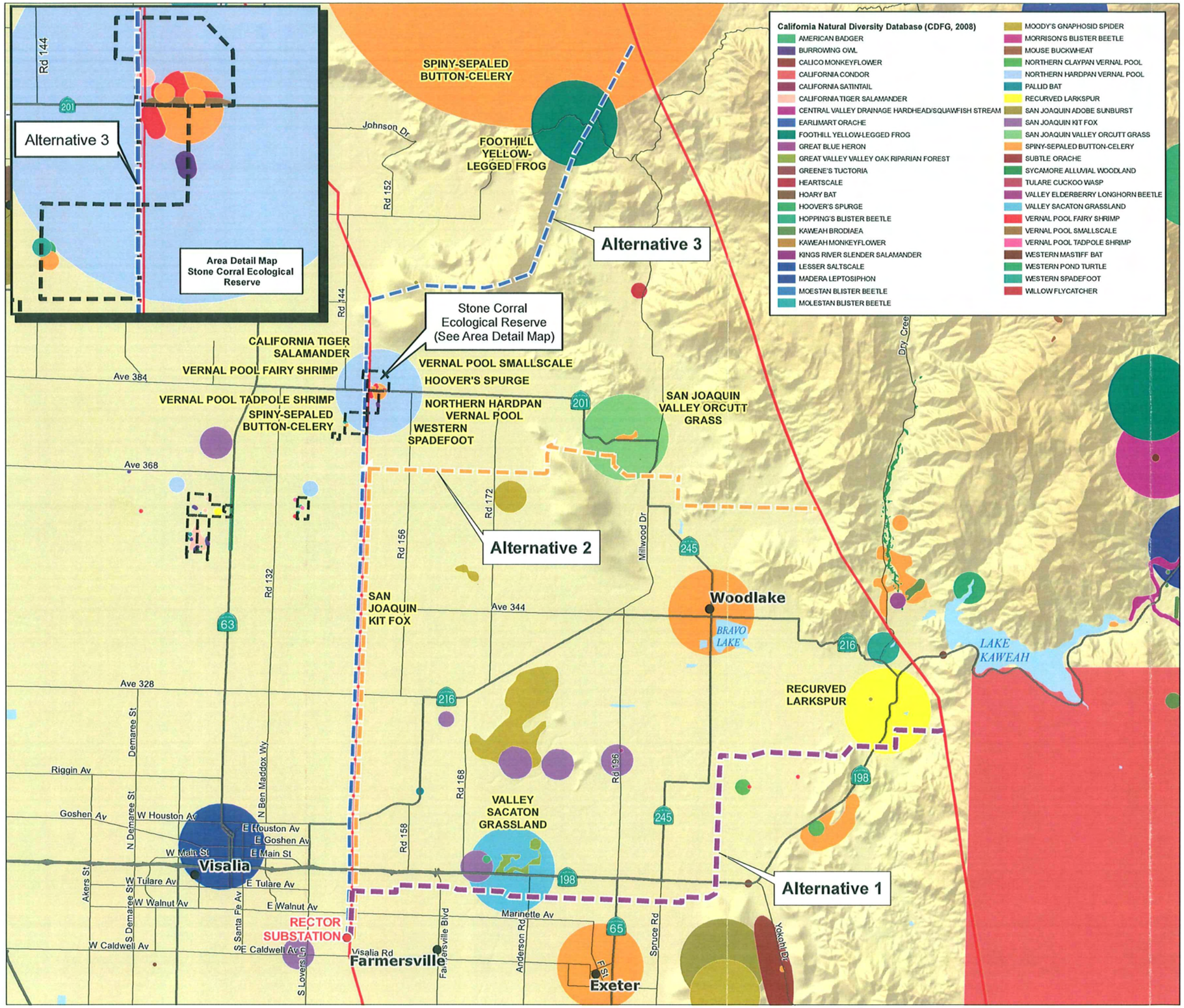
Common Name/ Scientific Name	List Status and Code	Flowering/ Phenology	Habitat Type	Potential for Occurrence		
				Proposed	Alt 2	Alt 3
Calico monkey flower (*Mimulus pictus*)	1B.2	March to May	Cismontane woodlands, broad-leafed upland forest. Associated with granitic soils and fire disturbed areas.	Low	Low	Low
Greene's tuctoria (*Tuctoria greenei*)	FE SR 1B.1	May to July (September)	Large, high-quality vernal pools. Has not been seen in County for 50 years.	Very low	Low	Moderate
Hoover's spurge (*Chamaesyce hooveri*)	FT 1B.2	July to August	Vernal pools.	Very low	Moderate	**High**[1]
Kaweah brodiaea (*Brodiaea insignis*)	SE 1B.2	April to June	Cismontane blue oak woodland, valley and foothill grasslands associated with clay/gravel substrate. Known to occur near Kaweah Reservoir.	Moderate	Moderate	Moderate

Common Name/ Scientific Name	List Status and Code	Flowering/ Phenology	Habitat Type	Potential for Occurrence		
				Proposed	Alt 2	Alt 3
Keck's checker mallow (*Sidalcea keckii*)	FE 1B.1	April to May	Cismontane woodland, valley and foothill grasslands associated with serpentine clay.	Low	Low	Moderate
Recurved larkspur (*Delphinium recurvatum*)	1B.2	March to June	Chenopod scrub, valley and foothill grasslands, often with alkaline soils.	Low	Low	Moderate
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FE SE 1B.1	March to April	Valley and lower foothill grasslands containing heavy "adobe clay soils."	Moderate	Moderate	Moderate
San Joaquin orcutt grass (*Orcuttia inaequalis*)	FT SE 1B.1	April to September	Vernal pools.	Very low	Moderate	**High**[1]
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	1B.2	April to May	Vernal pools and swales, valley and foothill grasslands.	Low	**High**[2]	**High**[2]
Springville clarkia (*Clarkia springvillensis*)	FT SE 1B.2	May to July	Valley and foothill grasslands. Also associated with chaparral that is subject to moderate disturbance (post-fire).	Low	Low	Moderate

Common Name/ Scientific Name	List Status and Code	Flowering/ Phenology	Habitat Type	Potential for Occurrence		
				Proposed	Alt 2	Alt 3
Striped adobe lily (*Fritillaria striata*)	ST 1B.1	February to April	Valley and foothill grasslands, clay soils. No records exist in northern Tulare County.	Low	Low	Low
Subtle oracle (*Atriplex subtilis*)	1B.1	June to August (as late as October)	Alkaline grasslands and playas. Habitat present at Stone Corral Ecological Reserve but no records exist.	Low	Low	Low to Moderate

Source: CNDDB 2008, Stebbins 2008.
[1]Known to occur, CNDDB 2008
[2]Known to occur, Stebbins, 2008
Abbreviations and Definitions:
US Fish and Wildlife Service
FE: Federally listed, endangered: Species in danger of extinction throughout a significant portion of its range
FT: Federally listed, threatened: Species likely to become endangered within the foreseeable future
State of California
SE: State listed, endangered
ST: State listed, threatened
SR: State listed, rare
California Native Plant Society
1B.1: Plants rare and endangered in California and elsewhere. Seriously threatened in California
1B.2: Plants rare and endangered in California and elsewhere. Fairly threatened in California

Figure 4.4-2
Special Status Species with Occurrences in the Vicinity of Proposed Project



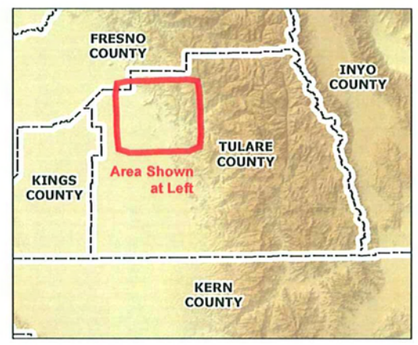
Stone Corral Ecological Reserve (CDFG, 2008)

Routes
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)
- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

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Table 4.4-2 Special-Status Wildlife Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives

Common Name/ Scientific Name	Listing Status	Habitat Type	Potential for Occurrence		
			Proposed	Alt 2	Alt 3
INVERTEBRATES					
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Specifically found in the Central Valley of California in association with blue elderberry (*Sambucus mexicana*) shrubs.	**High**	**High**	**High**
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains in sand stone depression, grassed-swale, earth sump or basalt-flow vernal pool habitats.	Low	Low to Moderate	**High**[1]
AMPHIBIANS					
California tiger salamander (*Ambystoma californiense*)	FT CSC	Inhabits underground refuges, often associated with ground squirrel burrows, vernal pools or other seasonal water sources needed for breeding.	Low	Low to Moderate	**High**[1]
Foothill yellow-legged frog (*Rana boylii*)	CSC	Partially shaded, shallow streams with a rocky substrate in a variety of habitats.	Low	Low	Low
Western spadefoot toad (*Scaphiopus hammondii*)	CSC	Occurs in grassland habitats or also in valley-foothill hardwood woodlands with vernal pools necessary for breeding.	Low	Low to Moderate	Moderate to High
REPTILES					

Common Name/ Scientific Name	Listing Status	Habitat Type	Potential for Occurrence		
			Proposed	Alt 2	Alt 3
Blunt-nosed leopard lizard (*Gambelia silus*)	FE SE	Associated with sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Utilizes mammal burrows, shrubs or structures such as fence posts for cover as they do not excavate burrows.	Low	Low	Low to Moderate
Northwestern pond turtle (*Clemmys marmorata marmorata*)	CSC	Aquatic habitats including ponds, marshes, rivers, streams & irrigation ditches with aquatic vegetation. Requires basking sites and suitable nesting sites, such as sandy banks or grassy open fields, and upland habitat for egg-laying.	Moderate	Moderate	Moderate
BIRDS					
Black swift (*Cypseloides niger*)	CSC	Inhabits the central and southern Sierra Nevada Mountains, found in small colonies on cliffs behind or adjacent to waterfalls in deep canyons.	Moderate	Moderate	Moderate
Burrowing owl (*Athene cunicularia*)	CSC	Inhabits open, dry grasslands, deserts and scrublands with low-growing vegetation depending on mammal burrows for nesting habitat.	Moderate	Moderate	Moderate
California condor (*Gymnogyps californianus*)	FE SE	Nests in deep canyons with rock wall ledges. Requires vast expanses of open savannah, grasslands, and foothill chaparral habitat in mountain ranges of moderate altitude.	Low	Low	Low

Common Name/ Scientific Name	Listing Status	Habitat Type	Potential for Occurrence		
			Proposed	Alt 2	Alt 3
Golden eagle (*Aquila chrysaetos*)	CSC SFP	Inhabits rolling foothills, mountain areas, sage-juniper flats and desert. Nests in canyons with cliff walls or in large trees in open areas.	**High**	**High**	**High**
Mountain plover (*Charadrius montanus*)	CSC	Short grasslands, freshly plowed or newly sprouting fields, bare ground with flat topography.	Moderate	Moderate	Moderate
Swainson's hawk (*Buteo swainsoni*)	ST	Inhabits grasslands containing scattered trees, juniper sage flats, riparian areas, savannahs and agricultural or ranch areas with adjacent fields supporting rodent populations.	Moderate	Moderate	Moderate
Tri-colored blackbird (*Agelaius tricolor*)	CSC	A highly colonial species requiring open water, protected nesting substrate, and foraging area for insects within a few miles of the colony.	Moderate	Moderate	Moderate
MAMMALS					
American badger (*Taxidea taxus*)	CSC	Inhabits drier open stages of shrub, forest, and herbaceous habitats with loose soils and open uncultivated ground with a sufficient burrowing rodent population.	Very low	Low	Moderate

Common Name/ Scientific Name	Listing Status	Habitat Type	Potential for Occurrence		
			Proposed	Alt 2	Alt 3
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE ST	Inhabits annual grasslands or grassy open habitat stages with scattered shrubby vegetation with loose-textured sandy soils for burrows, and sustainable prey base.	Low to Moderate	Low to Moderate	Low to Moderate
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE SE	Inhabits saltbush scrub and sink scrub communities in the Tulare Lake Basin of the Southern San Joaquin Valley. Burrows in soft friable soil creating elevated soil mounds at the base of shrubs.	Low	Low	Low

Source: CNDDB 2008, Stebbins 2008
[1]Known to occur, CNDDB 2008
Abbreviations and definitions:
US Fish and Wildlife Service
FE: Federally listed, endangered
FT: Federally listed, threatened
California Department of Fish and Game
SE: State listed, endangered
ST: State listed, threatened
CSC: California species of special concern
SFP: State listed, fully protected

Construction Impacts

Does 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 California Department of Fish and Game or US Fish and Wildlife Service?

Plants

Direct effects to sensitive plant species could occur as a result of activities during transmission line construction through removal of the species or destruction of habitat. Activities which could destroy or adversely impact plant species include the use of heavy machinery, tree and scrub removal, movement of equipment and materials, vehicle parking, and heavy foot traffic. Indirect impacts could occur as a result of non-native weeds or invasive plant establishment in areas disturbed by construction of the Proposed Project.

As shown in the Table 4.4-1, Special-Status and Covered Plant Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives, two listed plant species, the Kaweah brodiaea and San Joaquin adobe sunburst, have a moderate potential to occur in the non-native annual grassland communities at the eastern end of the Proposed Project. Focused botanical surveys during their flowering period have not been completed due to inaccessibility to property where potentially suitable habitat may be present. Surveys for these plant species would occur during the preconstruction Environmental Surveys for the Proposed Project to determine if these species are present. If present, SCE would either modify the project design to avoid the resource, or to implement Applicant Proposed Measures to minimize the impact to these species from project-related activities. Potential impacts to special-status plant species are expected to be less than significant.

Wildlife

As shown in Table 4.4-2, Special-Status Wildlife Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives, several sensitive wildlife species are known to occur or have the potential to occur in the vicinity of the Proposed Project. Wildlife species having a moderate to high potential of occurring along the Proposed Project include the valley elderberry longhorn beetle, northwestern pond turtle (*Clemmys marmorata marmorata*), black swift (*Cypseloides niger*), burrowing owl, golden eagle, mountain plover (*Charadrius montanus*), Swainson's hawk (*Buteo swainsoni*), tri-colored blackbird, and San Joaquin kit fox.

Figure 4.4-3
Relative Potential for Special Status Species Occurrence along each Alternative

Potential and High Potential Species Occurrence (CNDDB 2008, U.S. FWS 1993/2005/2006, Stebbins 2008)

- Low
- Moderate
- High
- Stone Corral Ecological Reserve (CDFG, 2008)

Routes

- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation
- Milepost
- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

N

Alternative 3

Alternative 2

Alternative 1

Stone Corral Ecological Reserve

RECTOR SUBSTATION

Woodlake

Visalia

Farmersville

Exeter

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The valley elderberry longhorn beetle and northwestern pond turtle are species associated with the valley riparian woodlands and drainages along the ROW of the Proposed Project, such as along the Kaweah River. Some of the large elderberry plants surveyed near the Kaweah River were found to contain exit holes typically created by the valley elderberry longhorn beetle (Stebbins, 2008). Impact to elderberry stems, having a diameter greater than one inch, could be considered a significant impact to valley elderberry longhorn beetle. However, impacts to elderberry plants as a result of the Proposed Project are likely to be avoided by implementing **APM-BIO-01**. With the implementation of APM-BIO-01, potential impacts to the valley elderberry longhorn beetle would be less than significant.

> **APM-BIO-01.** Elderberry Avoidance. The elderberry avoidance guidelines of the USFWS (1999) would be followed. At a minimum, all ground-disturbing activities should be avoided within 15 feet of any mature elderberries with basal stem diameters of 1 inch or greater. If elderberry plants with stems having a diameter of 1 inch or greater cannot be avoided, the USFWS would be consulted to develop mitigation measures appropriate to the type of impact.

The black swift, burrowing owl, golden eagle, mountain plover, Swainson's hawk, tri-colored blackbird, and San Joaquin kit fox are species with greater range and have the potential to occur in the various habitats in the vicinity of the Proposed Project. These species are less likely to occur in the developed and disturbed and agricultural areas found along the majority of the Proposed Project, and more likely to occur at the extreme eastern end of the Proposed Project where non-native annual grasslands and adjacent undeveloped habitats in the foothills exist. Focused surveys for these species would occur during the preconstruction Environmental Surveys conducted for the Proposed Project. If these species are discovered, the CDFG or USFWS would be consulted for authorization or permits, as appropriate. Potential impacts to special-status wildlife species are expected to be less than significant.

Construction noise may cause potential short-term indirect impacts to wildlife, particularly nesting bird species, if present. Increased ambient noise levels during temporary short-term construction activities may mask the breeding songs used by sensitive riparian and upland birds. Indirect noise impacts to these species could potentially be considered significant if construction-related noise levels cause abandonment of nests. Potential impacts to raptor species may be considered significant due to their protection under the Migratory Bird Treaty Act and by the California Department if Fish and Game. Raptor nests are known to be present on the existing lines or in trees or structures adjacent to the Proposed Project. SCE would comply with the Migratory Bird Treaty Act and the relevant Sections of the California Fish and Game Code. Nests 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, work 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.

Habitat

There are no designated critical habitat areas present in the vicinity of the Proposed Project. Although existing records and available information indicate that it is unlikely that any vernal

pools occur along the Proposed Project, some of the grasslands in the eastern portion of the Proposed Project have not been completely investigated because of their inaccessibility on private property. These areas would be surveyed during the preconstruction Environmental Surveys, and if vernal pools are present, a wetland delineation and species-specific surveys for vernal pool plant and wildlife species would be conducted to confirm the presence of the vernal pool or associated sensitive plant and wildlife species. If the vernal pools are present, and cannot be avoided, the applicable permits from the CDFG, USFWS, Corps, and the CRWQCB would be obtained as required. Potential impacts to special-status species habitats are expected to be less than significant.

The Proposed Project construction at the substation would occur within previously disturbed areas within the existing fenceline of the substation. Sensitive plant or wildlife species were not found within the substations. There would be no impact to sensitive plant or wildlife from construction at the substations.

Does 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 California Department of Fish and Game or US Fish and Wildlife Service?

Sensitive natural communities in the vicinity of the Proposed Project are sporadic and fragmented. The area is mostly agricultural, and the limited locations where sensitive natural communities occur would be identified during the preconstruction Environmental Surveys, and allow them to be avoided during construction. Riparian habitats would be identified and spanned. The Proposed Project is not expected to result in substantial adverse effects to riparian habitats or sensitive natural communities. Impacts would be less than significant.

Does 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, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The Proposed Project is not expected to result in substantial adverse effects to federally protected wetlands. Surveys for wetlands would occur during the preconstruction Environmental Surveys for the Proposed Project to determine if they are present. If present, they would likely be able to be avoided or spanned by modifying the project design. If wetlands could not be avoided, SCE would obtain the relevant permits for the Proposed Project. Potential impacts to wetlands are expected to be less than significant.

Does 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 corridors, or impede the use of native wildlife nursery sites?

Wildlife movement through the region is facilitated by the presence of natural drainages and large bodies of water, and also by the presence of existing utility rights-of-way. The majority of the new portions of the Proposed Project would be in agricultural areas or developed areas, and would not further restrict wildlife movement. There would be no impact to migratory wildlife corridors.

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

Most of the remaining valley oaks in the vicinity of the Proposed Project are older, diseased, stressed trees that have been negatively impacted by human activities and land uses, including pasture grazing, agriculture, groundwater depletion, and nearby development-related pressures. Any valley oaks in the vicinity of the Proposed Project would be identified during the preconstruction Environmental Surveys to determine if they are present. If present, SCE would either modify the project design to avoid the resource, or to implement Applicant Proposed Measures to minimize the impact to the valley oaks from project-related activities. The Proposed Project would not conflict with local tree preservation policies. Impacts would be less than significant.

Does 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 adopted HCPs/NCCPs in the vicinity of the Proposed Project. There would be no impacts to an adopted HCP/NCCP resulting from construction of the Proposed Project.

Operation Impacts

Does 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 California Department of Fish and Game or US Fish and Wildlife Service?

Potential impacts to sensitive plant species as a result of operation of the Proposed Project is expected to be less than significant. Routine operation and maintenance activities, such as road maintenance, tree trimming, and structure repairs, could potentially impact sensitive plant species if they are present in the work area. However, potential impacts from these activities would be avoided or minimized through the development of an operation and maintenance plan and thorough review of these activities by SCE's Environment, Health and Safety division prior to implementation.

The new portions of the Proposed Project would be constructed with energized components (conductors) and grounding structures in excess of 8 feet apart, effectively preventing most local or migratory bird species from extending their maximum wingspan to simultaneously contact a positive conductor and a ground wire to complete the electrical circuit. Replacement of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines would require the construction of new tubular poles that would be built with sufficient spans and similar safeguards to prevent injuries or fatalities. Therefore, there is very low risk of electrocution from the structure replacement for these existing transmission lines.

The electrocution of non-avian species is rare. When it occurs, it is generally caused by climbing animals that come into contact with energized components at substations rather than on transmission lines. Typical non-avian electrocution impacts could occur to non-sensitive wildlife

species such as squirrels, raccoons, and domestic cats. Infrequent electrocution of non-sensitive wildlife species is not considered a significant impact.

Does 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 California Department of Fish and Game or US Fish and Wildlife Service?

Operation of the Proposed Project is not expected to result in substantial adverse effects to riparian habitats or sensitive natural communities because riparian habitats would be spanned and sensitive natural communities would be avoided along the Proposed Project.

Does 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, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Operation of the Proposed Project is not expected to result in substantial adverse effects to federally protected wetlands because federally protected wetlands would have been avoided during construction of the Proposed Project.

Does 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 corridors, or impede the use of native wildlife nursery sites?

The Proposed Project would not interfere with riparian corridors and the movement of migratory fish or wildlife species. Operation of the Proposed Project has the potential to enhance wildlife corridors. The linear nature of a transmission line right of way (ROW) may promote wildlife movement. Animals tend to travel along natural paths and away from developed or disturbed areas. In many areas where the transmission ROW is adjacent to development, the transmission ROW itself connects urban clearings and other open space, allowing wildlife to travel unhindered through otherwise developed areas.

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

Operation of the Proposed Project is not expected to conflict with local policies protecting biological resources. There would be no impact to local policies during operation of the Proposed Project.

Does 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 adopted HCPs/NCCPs in the vicinity of the Proposed Project. The Kaweah Delta Water Conservation District is in the planning stages for proposing several HCP/NCCP areas in northwestern Tulare County, of which two parcels would be crossed by the Proposed Project. If the plans are adopted, SCE would review the compliance measures of the HCP/NCCP. If SCE is unable to comply with the measures of the HCP/NCCP, alternative mitigation measures would be proposed in consultation with the Kaweah Delta Water Conservation District, CDFG and

USFWS. There would be less than significant impacts to any adopted HCPs/NCCPs during operation of the Proposed Project.

Applicant Proposed Measures

APM-BIO-01. Elderberry Avoidance. The elderberry avoidance guidelines of the USFWS (1999) would be followed. At a minimum, all ground-disturbing activities should be avoided within 15 feet of any mature elderberries with basal stem diameters of 1 inch or greater. If elderberry plants with stems having a diameter of 1 inch or greater cannot be avoided, the USFWS would be consulted to develop mitigation measures appropriate to the type of impact.

4.4.5 Mitigation

Because the Proposed Project would result in less than significant impacts to biological resources, no mitigation measures are required.

4.4.6 Alternative 2

The Alternative 2 route is approximately 23 miles long. It would utilize approximately 11 miles of existing SCE ROW and require the acquisition of approximately 12 miles of new ROW to be acquired.

Alternative 2 has a greater likelihood of impacting sensitive biological resources than the Proposed Project. Existing data conclusively documents the presence of additional listed and sensitive plant and wildlife species and critical habitats in or near Alternative 2. Further field studies would likely augment the existing information for Alternative 2 due to the presence of suitable habitats capable of supporting these species. It is likely that additional regulatory and permitting requirements would have to be explored and implemented on Alternative 2 due to the presence of wetlands and jurisdictional drainages (Waters of the US) that could not be completely avoided. These resources would require consultations and regulatory permitting actions by the Corps, CDFG and CRWQCB. The documented presence of state and federal listed threatened and endangered species in these described habitats would also require similar actions by the CDFG and USFWS.

Alternative 2 has greater potential than Alternative 1 of encountering special status plant and animal species (refer to Tables 4.4-1, Special-Status and Covered Plant Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives, and 4.4-2, Special-Status Wildlife Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives). Alternative 2 also crosses through federally designated critical habitat for two sensitive plant species: San Joaquin orcutt grass and Hoover's spurge. Alternative 1 does not cross any designated critical habitat areas.

Vernal pool habitats in the Spring Gap and Colvin Mountain areas of the Alternative 2 route could potentially support listed species of vernal pool shrimp, California tiger salamander, Hoover's spurge and San Joaquin orcutt grass. Due to historic records and/or potential habitat for these species being present in these areas, Alternative 2 would require species-specific protocol surveys for the listed wildlife species that may require more than one year's worth of data. In addition, focused surveys would be required for the listed plants species associated with vernal

pool habitats. If found, consultation with the CDFG and USFWS would be necessary to determine if any additional mitigation measures are required as a result of foreseen impacts. Although uncertain at this time, impacts to vernal pool habitats or jurisdictional drainages resulting from the construction of Alternative 2 would likely require a CDFG 1602 Streambed Alteration Agreement, CRWQCB CWA Section 401 Certification and a Corps CWA Section 404 Permit.

Construction and operation of Alternative 2 would result in more and greater impacts to biological species. Impacts would likely be significant.

4.4.7 Alternative 3

Alternative 3 is approximately 24 miles long, and would utilize approximately 15 miles of existing SCE ROW and require the acquisition of new ROW for approximately 10 miles. Based on the preliminary habitat assessment surveys conducted to date, Alternative 3 is anticipated to have the greatest potential for significant impacts to biological resources of the three alternatives.

Alternative 3 would require approximately 10 miles of new right of way and access roads through the foothills to the Sierra Nevada Mountains. The sloping topography and less-developed condition of the land along Alternative 3 increases the potential to impact sensitive plant communities, wildlife, and riparian areas.

Alternative 3 has significantly greater potential than Alternative 1, and greater potential than Alternative 2, of encountering each of special status plant species (refer to Table 4.4-1, Special-Status and Covered Plant Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives) and greater potential than Alternative 1 of encountering each of special status wildlife species in the vicinity of the Proposed Project (refer to Table 4.4-2, Special-Status Wildlife Species Occurring and Potentially Occurring in the Vicinity of the Proposed Project and its Alternatives). Alternative 3 also crosses through the Stone Corral Ecological Reserve, a CDFG Habitat Preserve that is managed for the preservation of several sensitive, threatened, and endangered plant and wildlife species associated with vernal pool habitats. Federally designated critical habitat has been established at this reserve for vernal pool species in the area. Federally designated critical habitat for the San Joaquin orcutt grass has also been established in a portion of Alternative 3.

Existing data conclusively documents the presence of additional listed and sensitive plant and wildlife species and critical habitats in or near Alternative 3. Further field studies would likely augment the existing information along Alternative 3 due to the presence of suitable habitats capable of supporting these species. It is likely that additional regulatory and permitting requirements would have to be explored and implemented on Alternative 3 due to the presence of wetlands and jurisdictional drainages (Waters of the US) that could not be completely avoided. These resources would require consultations and regulatory permitting actions by the US Army Corps of Engineers and Regional Water Quality Control Board. The documented presence of State and federal listed threatened and endangered species in these described habitats would also require similar actions by the CDFG and USFWS.

Three sensitive plant species and two sensitive wildlife species are known to occur in the vicinity of Alternative 3. Alternative 3 would likely require species-specific protocol surveys for vernal pool shrimp species, the California tiger salamander, and Hoover's spurge that may require more than one year's worth of data. Consultation with CDFG and USFWS for potential impacts to these species would be required. Alternative 3 is also likely to impact at least one jurisdictional drainage, which would require a CDFG 1602 Streambed Alteration Agreement, CRWQCB CWA Section 401 Certification, and a Corps CWA Section 404 Permit.

Construction and operation of Alternative 3 would result in more and greater impacts to biological species. Impacts would likely be significant.

4.4.8 References

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4.5 Cultural Resources

This section describes the potential cultural resource impacts of the Proposed Project. Proposed mitigation measures and alternatives are also discussed.

4.5.1 Environmental Setting

Archeological Resources

Native Americans have occupied the San Joaquin Valley and foothills for at least 10,000 years. The area of the Proposed Project and its alternatives was historically occupied by Native American people referred to as Talumne, Wolasi, Gawia, Yokod, and Wuckchumni Yokuts (Gayton, 1948; Kroeber, 1925; Latta, 1999; Wallace, 1978). These people are collectively known as San Joaquin Valley Yokuts and were the Native groups present at the time of the arrival of Spanish explorers. Two ethnographic Yokuts villages are recorded within the vicinity of the Proposed Project: Yokodo, located near Exeter; and Tawpunga, located approximately eight miles east of Lemon Cove (Latta, 1999).

Villages of the San Joaquin Valley Yokuts were typically located on elevated ground overlooking a slough or lake. Dwellings were of two general types: A small, oval structure housing a single family, a series of which were arranged in a linear pattern and covered with a long continuous awning of brush wood; and a larger linear structure, housing up to ten families. Both were constructed of tule mats lain over support poles. Other structures at Yokuts villages included sunshades, windbreaks and granaries.

The southern San Joaquin Valley Yokuts practiced a mixed subsistence economy based primarily on fish, waterfowl, freshwater mussels, seeds, and roots, with a much smaller emphasis on terrestrial game, such as tule elk, deer, and antelope. Fish were harvested in nets dropped from tule rafts, in baskets, by spearing, by trapping in weirs, or by poisoning. Smaller game, particularly rabbits and hares, were taken in communal drives; larger game such as elk and pronghorn antelope were sometimes shot from blinds. Smaller game and fowl were taken in snares. Waterfowl were also taken from blinds and rafts, often using decoys (Latta, 1999).

Important vegetal resources for Yokuts subsistence included tule and cattail roots, grass nuts, cattail blossoms, and various seeds and bulbs. Tule provided the raw material for a wide variety of items that comprised the native toolkit. This was partly of necessity since other raw materials were often in short supply. Basketry was a highly developed craft. Finished baskets took many forms, including cooking vessels, necked water bottles, flat winnowing trays, and conical burdens baskets. Tules were also used to construct canoe-shaped balsas or rafts, which were propelled by means of long poles.

Flaked stone tools were commonly manufactured from locally available volcanic stone, and more rarely from obsidian imported from sources located on the eastern side of the Sierra Nevada Mountains. Natural tar or asphaltum was used both for hafting projectile points and waterproofing basketry.

Yokuts trade with neighboring groups was active. Locally obtained asphaltum, steatite, and tanned animal skins were exchanged for obsidian and salt from the Mojave Desert and the

western Great Basin (Latta, 1999). Obsidian was also transported to the coast as a trade article. Beads made of marine shells (e.g., Olivella and Tresus), probably mostly from the Santa Barbara Channel area, were employed as a medium of exchange and as decorative items.

The Yokuts are an ethno-linguistic group of more than 40 autonomous, linguistically and culturally related tribelets. Yokuts languages have been grouped into the Penutian family of languages (Silverstein, 1978). A body of ethnographic literature documents Yokuts historic traditional lifeways (e.g., Gayton, 1948; Kroeber, 1925; Kunkel, 1962; Latta, 1999; Wallace, 1978).

At least eight Spanish colonial expeditions traveled in the vicinity of the Proposed Project and its alternatives in the southern San Joaquin Valley. These expeditions included: 1804 Martin, 1806 Moraga-Muñoz, 1806 Zalvidea-Ruiz, 1814 Cabot, 1815 Ortega, 1816 Father Luis Antonio Martinez, 1819 Estudillo, and 1828 Rodriquez (Cook, 1955).

Native American populations in the region were devastated by European diseases introduced by Spanish missionaries and explorers. For example, in 1833 a major epidemic swept through the region, reducing the population to approximately one-quarter of its former size (Wallace, 1978). During the historic period Native Americans were indentured laborers on farms and ranches, and many were sent to live on the Santa Rosa Rancheria and the Tule River Indian Reservation during the American period (Wallace, 1978).

Historical Resources

The Proposed Project is located in the vicinity of several communities first established in the 1800s (Gudde, 1969; Hoover et al., 1966; Kaweah Commonwealth, 2008). The town site of Visalia was surveyed in November 1852 and became the county seat. The name was changed to Buena Vista in 1853, and changed back to Visalia in 1854. The post office at Farmersville was established in the 1870s. Exeter was founded in 1880 by D. W. Parkhurst of the Pacific Improvement Company and named for his birthplace in England. Its post office was established in 1889. Lemon Cove (originally Lime Kiln) was founded in 1859, when the value of the local limestone was recognized.

The landscape of the region surrounding the Proposed Project has been historically used for agriculture. This agricultural landscape includes thousands of acres of orchard lands, many ranches, and numerous irrigation and water transport features, some of which date back to the second half of the 19th century. These include the Tulare Irrigation District Canal, Pennebaker Ditch, Catron Ditch, Friant-Kern Canal, and Foothill Ditch. Construction of the complex of conveyance and drainage ditches in the general Visalia area commenced soon after Euroamerican settlers arrived in the mid 1800s. Built in 1951, the Friant-Kern Canal is one of the more recent water-transport facilities in the area.

The Visalia Electric Railroad extended from Visalia to Lemon Cove. The railroad was a wholly owned subsidiary of the Southern Pacific Railroad Company and operated between 1906 and 1990. Opened originally for passenger and freight traffic, the railroad ended passenger travel in 1924. Electric operations ceased in 1949 and operations ended entirely in 1990. Virtually all rails and ties were removed by 1996.

In 1911, initial construction of the Big Creek Hydroelectric System was begun by the Pacific Light & Power Corporation. The Big Creek powerhouses, located on the San Joaquin River drainage in Fresno County, generate electricity that is transmitted to Los Angeles along 241 miles of transmission line. At the time of the completion of the initial development and great expansion in 1929, the Big Creek system was the largest hydroelectric system in the world, and the Big Creek to Los Angeles transmission lines were then the longest in the world. Rector Substation is one of the original substations of the Big Creek transmission line system. The Big Creek Project was acquired by Southern California Edison (SCE) in 1917 when SCE merged with Pacific Light & Power Corporation.

Paleontological Resources

Paleontological resources, which are generally defined as the fossilized remains of plant and animal species, may include bones, teeth, shells, tracks, trails, and casts. According to geologic maps, the Proposed Project and its alternatives primarily lay in an area of Recent alluvium derived from igneous rock sources, and the Mesozoic granitic, pre-Cretaceous metamorphic, and pre-Cenozoic granitic and metamorphic rocks that comprise the foothills to the Sierra Nevada Mountains. Some areas of the foothills outside the mouths of major drainages are abutted by remnant formations of Pleistocene non-marine sediment (Matthews and Burnett, 1966). The Pleistocene non-marine sedimentary formations could be sensitive for fossils, but this has not been assessed along the Proposed Project or its alternatives.

4.5.2 Regulatory Setting

The CPUC is tasked with compliance of all provisions in CEQA and CEQA Guidelines that concern cultural resources (CEQA Sections 21083.2, 21084.1, and Guidelines 15064.5). 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) state 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 CPUC must consider properties eligible for listing on the California Register of Historical Resources (CRHR) or that are defined as a unique archaeological resource in CEQA Section 21083.2.

4.5.3 Significance Criteria

The significance criteria for assessing the impacts to cultural and paleontological 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; or

- Disturb any human remains, including those interred outside of formal cemeteries.

4.5.4 Impact Analysis

A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(4)(b)(1)).

Historical resources may be listed in the California Register if they meet the eligibility criteria for listing in the California Register as defined at PRC 5024.1, Title 14 CCR Section 4850.3. According to CEQA Guidelines Section 15064.5(a)(3), "Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource has integrity and meets at least one of the criteria for listing in the California Register of Historic Resources as follows:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California's history or the United States;

2. It is associated with lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation."

Archival Research

Records of the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Inventory System were examined to determine what previously reported cultural resources exist within the ROW of the Proposed Project, Alternative 2, Alternative 3, or within 0.5 mile of them. Consultation letters were sent to the California Native American Heritage Commission (NAHC). Published and unpublished archaeological, historical, and ethnographic literature pertaining to the area was also reviewed, and constituted the primary sources for the information used to describe the cultural setting of the Proposed Project and Alternatives. Sources consulted include:

- SSJVIC resource and inventory base maps

- National Register of Historic Places (Directory of Determinations of Eligibility, California Office of Historic Preservation, Volumes I and II, 1990)

- Office of Historic Preservation Computer Listing (1990 and updates)

- California Historic Resources Inventory (State of California, 1976)

- California Historical Landmarks (State of California, 1990)
- California Points of Historical Interest listing (May 1992)
- NAHC Sacred Lands Files.

Results of Archival Research

Only two cultural resources have been previously recorded within the transmission line ROW for the Proposed Project and its alternatives. These are TUL-143 and TUL-144 (consolidated into one site, TUL-143, in this report), both of which are prehistoric rock art and bedrock milling sites located along the transmission line ROW for Alternative 3.

Fifteen cultural resources are recorded within 0.5 miles of the Proposed Project and its alternatives. These are the Kaweah levee, a historic ranch, the Pogue Hotel, and twelve prehistoric archaeological sites. The ranch (P-54-3400) and one prehistoric site (TUL-16) are discussed below. None of the other previously recorded resources would be affected by the Proposed Project or its alternatives as presently proposed.

During the planning of the Proposed Project, three separate requests were submitted to the NAHC to consult their Sacred Lands files to identify culturally significant properties in the area of the Proposed Project and its alternatives. In a letter dated November 8, 2006, the Commission staff reported that no sacred lands were known to the Commission in the area or immediate vicinity to what was then the preferred transmission line route. Due to changes in the project description another request was sent on April 4, 2007 to the NAHC to consult their Sacred Lands files for lands not previously considered. In a letter dated April 23, 2007 the Commission staff again reported that no sacred lands were known to the Commission in the then preferred route or the immediate vicinity.

Subsequent to further revisions of the project description, and the introduction of Alternatives 2 and 3, a request was again sent to the NAHC on January 2, 2008. In a letter received by fax on January 3, 2008, the NAHC staff reported that sensitive resources were known to be present in the vicinity, but the letter did not state whether these resources are near the Proposed Project or its alternatives. In a subsequent telephone call, David Singleton of the NAHC stated that there were known to be numerous burials in the hills near the project area, and that there may be the remains of an unnamed village site in the general area. He further stated that the organizations or individuals on the Native American contact list provided in the NAHC response would need to be contacted for further information. SCE sent letters to the contacts listed, and is expecting responses by June 2008.

Archaeological Survey

Archaeological Survey of the existing SCE ROW (Big Creek 1-Rector and Big Creek 3-Rector 220 kV Transmission Lines)

A 300-foot wide corridor centered on the existing SCE ROW was archaeologically surveyed using 15-meter transects; similarly a 150-foot wide corridor centered on unpaved existing and

proposed access roads was also archaeologically surveyed. In these areas the existing transmission lines pass through predominately agricultural land, primarily orchards.

No prehistoric archaeological resources were encountered during survey of the portions of the existing SCE ROW associated with the Proposed Project. The portion of the existing SCE ROW associated with the Proposed Project crosses two historic-era resources: the Cameron Creek channel and levee (PL-30), and the Tulare Irrigation Canal (PL-42). The western portion of the Tulare Irrigation Canal has been modified to allow for construction of a new road and a subdivision, but the eastern portion appears to be intact. Outside of the existing SCE ROW, but within visual range, are two historic era residences (PL-37, PL-38) and a historic era residential and agricultural building complex (PL-31).

Archaeological Survey of the New ROW to be Acquired for the Proposed Project

Accessible portions of the Proposed Project ROW were archaeologically surveyed within a 200-foot wide corridor centered on the Proposed Project centerline. Most of the ROW to be acquired is located on private land to which, with the exception of two small areas within the Kaweah Delta flood plain, the field crew was not granted access. The majority of the Proposed Project was archaeologically surveyed utilizing a "windshield survey" methodology, which involved examining the ROW from public roads looking for evidence of historic structures or likely locations for prehistoric or historic archaeological sites.

The Proposed Project passes through agricultural land (primarily orchards) between the City of Visalia and Lemon Cove. The ROW crosses the Tulare Irrigation Canal (PL-42), the Davis Ditch (PL-46), the route of the Visalia Electric Railroad (PL-44), and the remains of the Sequoia Automobile Theatre (PL-41). A portion of the former Visalia Electric Railroad bed would be used as right-of-way for the Proposed Project, as would the lot of the Sequoia Automobile Theatre. Other resources observed during "windshield survey" within visual range of, but outside of the Proposed Project ROW, include an ancillary building (PL-39) and a saw mill (PL-43). Examination of USGS 7.5' topographic maps indicates that the Proposed Project would also traverse historic irrigation canals and ditches (specifically the Rice, Catron, Locust Grove, and Foothill Ditches), and may traverse other historic structures, but none of these resources could be examined or their exact locations relative to the Proposed Project ascertained due to lack of access. In addition, the records search results indicate that both a prehistoric occupation mound (TUL-16) and a historic ranch (P-54-3400) may be within or near the Proposed Project ROW, but again the exact location of these resources relative to the Proposed Project could not be confirmed due to lack of access.

Beginning approximately 1 mile west of Lemon Cove and proceeding east, the Proposed Project passes through hills that are likely to be archaeologically sensitive. No pedestrian survey could be performed in this area due to lack of access, but the presence of numerous natural resources and granite outcrops, discussion with archaeologists familiar with the area, and the information provided by the NAHC all suggest that this area would be sensitive for cultural resources.

Construction Impacts

Would the project cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5?

No known prehistoric archaeological resources would be affected by the Proposed Project. However, cultural resources may be present in the unsurveyed portions of the Proposed Project and if present, may be subject to adverse effects during construction. Based on the results of the records search, archival research, and information gathered during fieldwork, the eastern portion of Proposed Project ROW is the most likely area for encountering cultural resources, especially prehistoric archaeological resources. Also, TUL-16 and P-54-3400 may be within or near the Proposed Project ROW, but this cannot be confirmed or dismissed until pedestrian surveys are performed.

A comprehensive survey of the unsurveyed portions of the Proposed Project ROW would be undertaken during the Environmental Surveys that would be conducted prior to construction. Any archaeological resources located within the ROW and 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.

Each discovered archaeological resource potentially subject to project effects 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 by construction and preserved in place during ongoing operation and maintenance. If avoidance is not feasible, a data recovery plan would be prepared to recover scientifically consequential information from the site prior to disturbance. 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 mitigation 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 earth-disturbing construction operations, work in the vicinity of any find would be suspended or 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, impacts to the resource would either be avoided or be reduced to less than significant by implementing appropriate archaeological mitigation measures.

Any adverse impacts to archaeological resources determined to be a unique archaeological resource would be reduced to less than significant by either avoiding the resource through modifying the design of the Proposed Project, or by minimizing and mitigating any adverse impacts through archaeological data recovery or other appropriate mitigation to compensate for the loss of any significant resource values.

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

Historic Landscape and Built Resources

The agricultural landscape, inclusive of all the orchard land on the valley floor, and contributing elements through which the Proposed Project would be constructed, have been evaluated as eligible for listing in the California Register of Historical Resources per Criterion 1 because of their contribution to the historic development of the California citrus industry, for which the Visalia area is renown. The landscape includes citrus groves and other cultivated landscape, transportation infrastructure, and water infrastructure, as well as other historically agriculture-associated buildings and structures. The water-transport features in the Proposed Project ROW can be evaluated as California Register eligible per Criterion 3 because some of these features were created in the context of rural cooperatives formed to construct and maintain irrigation/drainage systems in the area, and they represent a type of construction distinctive to the agricultural industry that developed. In the vicinity of the Proposed Project, these features retain integrity of location, setting, materials, workmanship, feeling, and association. Boundaries of a historic agricultural landscape extend well beyond the ROW of the Proposed Project and are not defined for this analysis, nor are all potential contributing historical resources. Suffice to say that the existing SCE ROW and the majority of the ROW to be acquired for the Proposed Project are located within a historic landscape recognized by this study. This analysis addresses known historical resources within both the existing SCE ROW and the ROW to be acquired.

The Tulare Irrigation District Canal, Pennebaker Ditch, Catron Ditch, Friant-Kern Canal, and Foothill Ditch are irrigation and water-transport structures that are essential to the agricultural industry on the east side of the San Joaquin Valley. These water-transport features were created to make possible the agricultural industry in the greater Visalia area. The agricultural landscape of the general vicinity of the Proposed Project can be regarded as a historical resource per CEQA, of which the water features are contributing elements. The extensive modification of the natural landscape for the planting of citrus groves and related development of transportation and water systems has resulted in a cultural landscape the origins of which date to at least the last half of the 19th century.

Construction of the Proposed Project would result in removing citrus trees, but none of the ditches, canals, historic roadways or other historic buildings and structures, with the exception of a one-quarter mile section of the route of the Visalia Electric Railroad and the parking area of the Automobile Theater, would be affected directly or adversely. Removal of the citrus trees is considered a less than significant impact, in part because many of these trees would not be original plantings. Other attributes of the historic agricultural landscape can be avoided by the Proposed Project. The Automobile Theater parking area would be temporarily used as a wire stringing location; this effect is not considered significant. Approximately one-quarter mile of the bed of the former Visalia Electric Railroad would be used as ROW for the Proposed Project. Since the setting of the Electric Railroad has already been compromised by removal of the railroad tracks and ties, the addition of the transmission line in this short section is not considered to constitute a significant incremental effect. A number of individual historic-era cultural resources would be spanned by the Proposed Project, including water ditches and canals

(PL-42, PL-46), and levees (PL-30). These properties may qualify for listing in the California Register, but are presently unevaluated.

A comprehensive survey of the unsurveyed portions of the Proposed Project ROW would be undertaken during the Environmental Surveys that would be conducted prior to construction. Any archaeological resources located within the ROW and 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 built environment resources found would be fully documented using California Department of Parks and Recreation Form 523 and supplements.

Each built environment resource potentially subject to project effects 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 project construction and preserved in place during ongoing project operation and maintenance. If avoidance is not feasible, each California Register eligible resource subject to project effects would be recorded to the HABS/HAER/HALS standards as mitigation.

Any adverse impacts to archaeological resources determined to be a historical resource would be reduced to less than significant by either avoiding the resource through modifying the design of the Proposed Project, or by minimizing and mitigating any adverse impacts through archaeological data recovery or other appropriate mitigation to compensate for the loss of any significant resource values.

Big Creek Hydroelectric System Historic District (BCHSHD)

The generation and transmission facilities of the Big Creek system dating between 1911 and 1929 are eligible for listing in the National Register per eligibility Criteria a, b, and c (Shoup et al. 1988). Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines, and Big Creek 3-Springville 220 kV transmission line are included in the BCHSHD. Transmission line towers that are original to these lines were constructed between 1911 and 1929 (the period of significance for the BCHSHD), and contribute to the BCHSHD. Conductors and insulators on the lines may have been changed over the years, but this does not diminish the historical integrity of the transmission system, which is dependent on the "look and feel" of the original transmission line towers. The historic transmission system has remained substantially intact along its entire 241-mile length.

Rector Substation was constructed at the same time as the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines, contributes to the BCHSHD, and shares the same period of significance, 1911 to 1929. Rector Substation is eligible for listing in the California Register under eligibility Criteria 1, 2, and 3. Rector Substation is considered to be a historic resource eligible under California Register eligibility Criterion 1 because it represents an important theme in California history: the development of "...a large, complex, and interrelated power system which served and helped make possible the development of . . . the Los Angeles metropolitan area" (Shoup et al., 1988). Rector Substation is also considered to be eligible for the California Register under Criterion 2 for its association with John S. Eastwood, Henry E. Huntington, and George C. Ward. Eastwood was a pioneer in hydroelectric and dam engineering in California.

Huntington was one of California's leading capitalists in the early 20th Century. Ward was well known for his abilities in the engineering and construction professions (Shoup et al., 1988). It was the teaming of the talents of these important persons that resulted in development of the Big Creek hydroelectric system. Lastly, Rector Substation is considered eligible for the California Register under Criterion 3 because "[i]t illustrates and enhances understanding of hydroelectric systems as well as the kind of construction [and operational] characteristic of such systems" (Shoup et al., 1988).

Construction of the Proposed Project within the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines ROW would require demolishing and removing approximately 26 original single-circuit lattice towers built during the BCHSHD period of significance. This unavoidable impact is considered significant and adverse, but may be mitigated by **APM-CUL-01**, Documentation and Recordation of Affected Components of the Big Creek Hydroelectric System Historic District.

The California Office of Historic Preservation indicates:

> "in most cases the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of an historical resource (14 CCR Section 15126.4(b)). However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate below a level of significance. In this context, recordation serves a legitimate archival purpose. The level of documentation required as mitigation should be proportionate with the level of significance of the resource."

APM-CUL-01. Documentation and Recordation of Affected Components of the Big Creek Hydroelectric System Historic District. SCE would document the affected components of the BCHSHD to National Park Service Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) Level II or Level III standards prior to their removal.

The Department of Interior Guidelines for Architectural and Engineering Documentation are published in the Federal Register (2003). Levels of HABS/HAER/HALS documentation and recording are prescribed depending on the nature of the building or structure to be recorded and documented and the nature of available records that document the original design and construction of the building or structure. It is anticipated that original or facsimile engineering drawings for the transmission towers on the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines are extant, which could make a Level II recording and documentation effort appropriate. However, if such records are not available or no longer extant, a Level III effort would be necessary since measured drawings of representative types towers would have to be made.

Along the entire length of the transmission lines from Big Creek to the Eagle Rock Substation near Pasadena, 3,401 steel lattice transmission line towers were constructed: 2,214 suspension

towers and 1,187 dead-end towers. The towers that are part of the Proposed Project in SCE ROW north of Rector Substation apparently represent one type of suspension tower. Thus, documentation of one tower should be representative of all the towers slated for demolition and removal. On-site examination of each tower planned for removal would be made to verify that they are identical and match available engineering drawings. If there are inconsistencies in the design, materials, workmanship or other attributes among the towers, or, if any of the towers do not match available drawings, then each tower not consistent with the available drawings would be recorded to HABS/HAER/HALS Level III standards.

The integrity of setting of the historic Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines would be affected by construction of the Proposed Project. This impact is considered less than significant because the loss of integrity would not be so severe as to make these transmission lines ineligible for listing in the California Register.

The setting of the Big Creek 3-Springville 220 kV transmission line would be altered by construction of the Proposed Project. This effect is judged to be less than significant because the Big Creek 3-Springville transmission line is already paralleled by the Big Creek 4-Springville 220 kV transmission line, which was constructed after the BCHSHD period of significance and is not historically significant. Alteration of the Big Creek 3-Springville 220 kV transmission line at the connection point would not result in the loss of original transmission line towers or materially alter the historic setting of the Big Creek 3-Springville 220 kV transmission line.

Facilities at Rector Substation have been modernized over the years, and modifications, such as upgrading control systems or modernizing transformers and switchyard equipment, are considered part of the historic use of the substation. Therefore, the substation, particularly the main substation building and layout of the station facilities, retains adequate integrity of setting, workmanship, materials, feeling, and association to meet the California Register criteria for listing. Alterations to Rector Substation from construction of the Proposed Project are considered significant and adverse because they would include demolishing and removing original Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line towers from the switchyard, and the addition of a pre-fabricated metal mechanical and electrical equipment room adjacent to the substation building, materially altering characteristics of the resource that make it eligible for listing in the California Register.

Effects to Rector Substation would also be lessened by the implementation of **APM-CUL-01**. Depending on whether original design and engineering records are available for Rector Substation, it too would be documented and recorded to HABS/HAER/HALS Level II or Level III standards. All HABS/HAER/HALS documentation and recording would be made by a person meeting the Secretary of Interior's professional qualifications standards. The adverse effect of the removal of the original Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line towers cannot be entirely mitigated by recordation and documentation, but it is the only feasible mitigation alternative available.

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. Although there are no known archaeological sites within the Proposed Project ROW, the archaeological inventory of the ROW has not been completed due to lack of access.

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.

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

According to the geologic base maps, the majority of the Proposed Project lies on Recent alluvium from granitic rock sources (Matthews and Burnett, 1966). This type of soil has a low sensitivity for paleontological resources. The eastern end of the Proposed Project crosses Pleistocene non-marine sedimentary deposits and Mesozoic basic intrusive rocks, and Mesozoic granitic rocks near Lemon Cove. Granitic, basic intrusive and metamorphic rocks would not have the potential to yield fossils because the processes of their formation are not conducive to preserving biological remains. Some possibility exists that the Pleistocene non-marine deposits present at the eastern end of the Proposed Project could yield fossils, but fossils have not been previously recorded in this area.

Any significant paleontological remains encountered can be recovered using scientific methods and as a result, any impacts to paleontological resources from construction of the Proposed Project would be less than significant.

Operation Impacts

Operation of the Proposed Project consists of annual inspection and routine maintenance of the transmission lines and access roads. These activities would not affect any known archaeological or historical resources and impacts would be less than significant. Archaeological survey of presently unsurveyed portions of the Proposed Project ROW may result in the discovery of additional resources. If any of those resources are determined eligible for the California Register of Historical Resources, and Proposed Project effects to them cannot be avoided during construction or routine operation and maintenance, a mitigation plan would be developed. This plan would address construction as well as long-term operation and maintenance effects.

Applicant Proposed Measures

APM-CUL-01. Documentation and Recordation of Affected Components of the Big Creek Hydroelectric System Historic District. SCE would document the affected components of the BCHSHD to National Park Service Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) Level II or Level III standards prior to their removal.

4.5.5 Mitigation

Because the Proposed Project would result in less than significant impacts to cultural resources, no mitigation measures are required.

4.5.6 Alternative 2

Cultural resource inventory of the Alternative 2 ROW was limited to those areas for which survey permission could be obtained. The entire portion of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated with Alternative 2 was archaeologically surveyed, and only portions of the eastern half were surveyed, due to lack of access. Alternative 2 would require an additional cultural resource inventory in the unsurveyed portions of the Alternative 2 ROW.

As described in Section 4.5.4, records searches and NAHC consultation included both Alternative 2 and Alternative 3. A 300-foot wide corridor was surveyed along the existing ROW, and a 200-foot wide corridor centered on the Alternative 2 ROW outside of existing ROW was surveyed where accessible.

Prehistoric and Historic Archaeological Sites

One historic era archaeological site (PL-01) is located within the portion of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated with Alternative 2. Three prehistoric archaeological sites (PL-11, PL-17, PL-18) are located within the Alternative 2 ROW outside of existing SCE ROW. None of these resources have been evaluated for eligibility to the California Register of Historical Resources. As such, any resource potentially subject to project effects must be evaluated to determine if it is a Historical Resource for the purposes of CEQA before appropriate mitigation measures, if any, can be formulated.

One prehistoric (PL-13) and one historic archaeological site (PL-15) are located within one-eighth of a mile, but outside of Alternative 2. Construction and operation of Alternative 2 would not impact these resources.

Historic Landscape and Built Resources

Eight built resources are located within the survey corridor for the portion of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated with Alternative 2. These include irrigation ditches (PL-02, PL-09, PL-42), an ancillary building (PL-03), and levees (PL-07, PL-10, PL-30). One resource, a river levee (PL-45), crosses Alternative 2 outside of existing SCE ROW.

None of these resources have been evaluated for eligibility to the California Register of Historical Resources. As such, any resource potentially subject to project effects must be evaluated to determine if it is a Historical Resource for the purposes of CEQA before appropriate mitigation measures, if any, can be formulated.

The agricultural landscape traversed by Alternative 2 is the same as that traversed by the Proposed Project. Impacts to this landscape from construction of Alternative 2 are anticipated to be essentially identical to the impacts for construction of the Proposed Project.

Big Creek Hydroelectric System Historic District

Alternative 2 follows the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW for approximately 10.8 miles.

Paleontology

The paleontological setting for the Alternative 2 route is similar to that of the Proposed Project. As a result, impacts to paleontological resources would be similar to those for the Proposed Project.

Alternative 2 Impacts to Cultural Resources

Alternative 2 is thought to have greater impacts to cultural resources than the Proposed Project. There is a large area that is undeveloped that has a potential to be sensitive for archeological resources. In addition, when Alternative 2 and Alternative 3 were included in the request to the NAHC to consult their Sacred Lands files, the response indicated there may be burials in the hills near the project area, and that there may be the remains of an unnamed village site in the general area. There would be more and greater impacts to cultural resources from Alternative 3 than for the Proposed Project.

4.5.7 Alternative 3

Cultural resource inventory of the Alternative 3 was limited to those areas for which survey permission was obtained. The entire portion of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated with Alternative 3 was archaeologically surveyed except for a short segment approximately 0.25 miles south of Stokes Mountain. Access to the southwestern portion of Alternative 3 outside SCE ROW was denied. In addition, a 2-mile segment of the Alternative 3 alignment, extending from approximately 0.5 miles south of Boyd Drive to 0.75 miles southeast of the connection point for Alternative 3 was comprised of extremely steep slopes; archaeological survey in this area was limited to a few accessible places.

As described in Section 4.5.4, records searches and NAHC consultation included the areas traversed by Alternative 3. A 300-foot wide corridor was surveyed along the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW. A 200-foot wide corridor centered on the Alternative 3 alignment where it deviates from the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW was surveyed where accessible. A 150-foot wide corridor centered on proposed or unpaved existing access roads was also surveyed.

Prehistoric and Historic Archaeological Sites

One historic archaeological site (PL-01) located within the Big Creek 1-Rector and Big Creek 3 Rector 220 kV transmission line survey corridor associated with Alternative 2 is also associated with Alternative 3. In addition, there are two historic isolated artifacts (ISO-1, ISO-2) located within the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW for Alternative 3. Twelve prehistoric archaeological sites (TUL-143/144, PL-21, PL-22, PL-23, PL-24, PL-25, PL-26, PL-27, PL-28, PL-29, PL-33, PL-35) and one historic (PL-20) archaeological site have been recorded on Alternative 3 outside of existing SCE ROW. None of these resources have been evaluated for eligibility to the California Register of Historical Resources. Any resource subject to potential project effects would be evaluated to determine if it is a Historic Resource for the purposes of CEQA before appropriate mitigation measures, if any, can be formulated.

Historic Landscape and Built Resources

All of the built resources located within the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated with Alternative 2 are also associated with Alternative 3. An additional five resources are located in the portion of the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW associated only with Alternative 3. These are a residence (PL-06), creek levees (PL-45), the grade of the Atcheson, Topeka, and Santa Fe Railroad (PL-05), an irrigation ditch (PL-04), and a drainage ditch (PL-08). None of these resources have been evaluated for eligibility to the California Register of Historical Resources. Any resource subject to potential project effects would be evaluated to determine if it is a Historical Resource for the purposes of CEQA before appropriate mitigation measures, if any, can be formulated.

The agricultural landscape traversed by Alternative 3 is the same as that traversed by the Proposed Project. Impacts to this landscape for Alternative 3 are anticipated to be essentially identical to the impacts for the Proposed Project.

Big Creek Hydroelectric System Historic District

Alternative 3 follows the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission lines for approximately 15 miles. Mitigation measures would proceed as described in Section 4.5.5, Cultural Resources Mitigation.

Paleontology

The majority of Alternative 3 traverses recent alluvium from granitic rock sources (Matthews and Burnett, 1966). The northern portion of Alternative 3 crosses Pleistocene non-marine deposits immediately south of Stokes Mountain, Mesozoic granitic rocks and Mesozoic basic intrusive rocks on Stokes Mountain and through Stone Corral Canyon, and pre-Cretaceous metamorphic rocks and pre-Cenozoic granite and metamorphic rocks near the northern end of the route. Granitic, basic intrusive and metamorphic rocks do not have the potential to yield fossils because the processes of their formation are not conducive to preserving biological remains. There is some possibility that Pleistocene non-marine deposits could yield fossils but such remains are not known to occur on Alternative 3.

Alternative 3 Impacts to Cultural Resources

Alternative 3 is thought to have greater impacts to cultural resources than the Proposed Project, and greater impacts than Alternative 2. There are 12 known prehistoric archaeological sites on the Alternative 3 ROW, and the entire ROW has not yet been surveyed. In addition, when Alternative 2 and Alternative 3 were included in the request to the NAHC to consult their Sacred Lands files, the response indicated there may be burials in the hills near the project area, and that there may be the remains of an unnamed village site in the general area. There would be more and greater impacts to cultural resources from Alternative 3 than for the Proposed Project.

4.5.8 References

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4.6 Geology and Soils

This section describes the geologic resources, geologic hazards, and soils in the area of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.6.1 Environmental Setting

Tulare County is located in a region at the interface between the Sierra Nevada Mountains to the east and the San Joaquin Valley to the west, with a foothill transitional zone between the two. The geologic history of the landforms in the vicinity of the Proposed Project is one of episodic intrusion of the Sierra Nevada granitic batholith through its former overburden; and more recently, the uplift and erosion of the Sierra Nevada Mountains.

The foothills to the Sierra Nevada Mountains are primarily comprised of dioritic and meta-sedimentary material (Matthews and Burnett, 1966). This material has been cut by drainages that channel water and rock detritus to the San Joaquin Valley below.

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 that were carried by vast amounts of water. Due to continued uplift of the Sierra Nevada Mountains relative to the Great Valley, the rivers are constantly cutting downward, exposing older floodplain and stream-terrace surfaces. During the past 200 million years, the Central Valley has accumulated over 20,000 feet of sedimentary material. 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 Tulare County (CGS, 2007). The nearest mapped fault to the Proposed Project is near the Tulare County/Kern County boundary, the Pond Poso Faults, approximately 33 miles away, and the nearest Alquist-Priolo Earthquake Hazard Zone is the San Andreas Fault, approximately 60 miles away (CGS, 2005).

The California Geological Survey has not developed a landslide hazard identification map for Tulare County or a liquefaction hazard/susceptibility map (CGS, 2008). 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. In 1999, land subsidence in the vicinity of the Proposed Project is shown as experiencing less than 1 foot of subsidence (USGS, 1999).

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; or

- 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

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 fault segments, traces, or splays in the vicinity of the Proposed Project. The Proposed Project is located approximately 60 miles from an Alquist-Priolo earthquake hazard zone. The nearest surface rupture that resulted from an earthquake estimated

to have occurred during the Quaternary Period is approximately 33 miles away at the Pond Poso faults. Although the Proposed Project may experience some ground shaking during very strong seismic events, due to the Proposed Project's distance from known active faults, the probability of strong seismic shaking is considered low. In addition, per CPUC G.O. 95, overhead transmission facilities are engineered to withstand wind and seismic loading. And due to the large distance between the Proposed Project and known active faults, the probability for ground failure as a result of seismic events is low.

Liquefiable soils are common in seismically active areas with sandy alluvial fan deposits and shallow groundwater. The depth to groundwater in the vicinity of the Proposed Project ranges from approximately 30 feet below ground surface (near areas of surface water) to 80 feet below ground surface in the west (DWR, 2006); groundwater levels vary with the change in seasonal infiltration rates. Since the potential for sufficient seismic ground shaking required to initiate liquefaction is low, the potential for seismically induced liquefaction is also low.

The Proposed Project is located in an area of low topographic relief with low to moderate slopes. The probability that a seismically-induced landslide would affect people or structures associated with the Proposed Project is very low.

As a result, construction and operation of the Proposed Project would have less than significant impacts to people or structures due to rupture of a known earthquake, strong seismic ground shaking, or ground failure.

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?

Soil expansion is a phenomenon by which clay-rich soils expand when they are wet and shrink upon drying. In the vicinity of the Proposed Project, clay content is low and soils have a low shrink-swell potential. Therefore, potential risks associated construction and operation of the Proposed Project on expansive soils are less than significant.

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 Proposed Project would not be built with an on-site wastewater system. There would be no impact to soils that are unable to support a septic system drainfield.

Construction Impacts

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

Soil erosion may occur during rainy periods as a result of surface runoff on sloped surfaces, or occur during dry periods as fine-grained soil materials are blown from unvegetated and unpaved surfaces in the form of dust. 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 is estimated to 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 of the Proposed Project (See Chapter 3, Project Description for more detail). In addition, the use of the required control measures listed in Section 4.3, Air Quality, would further reduce any impacts due to soil erosion to less than significant levels.

The soils expected to be encountered during construction of the Proposed Project are listed in Table 4.6, Soils in the Vicinity of the Proposed Project, and are shown on Figure 4.6, Soil Map. For the majority of the Proposed Project transmission line route, clayey soils or overly sandy soils are rare. However, there are a few areas that may require site-specific designed measures for drainage and erosion control.

Table 4.6 Soils in the Vicinity of the Proposed Project

Soil Name	Drainage Class	Erosion Evaluation
Grangeville Sandy Loam	Somewhat poorly drained	Erosion is unlikely
Nord Fine Sandy Loam	Well drained	Erosion is unlikely
Flamen Loam	Moderately well drained	Erosion is unlikely
Exeter Loam	Well drained	Erosion is unlikely
Yettem Sandy Loam	Well drained	Erosion is unlikely
Porterville Clay	Well drained	Erosion is unlikely
Cibo Clay	Well drained	Erosion control measures may be needed.
San Joaquin Loam	Moderately well drained	Erosion is unlikely
Havala Loam	Well drained	Erosion is unlikely
Honcut Sandy Loam	Well drained	Erosion is unlikely
Blasingame Sandy Loam	Well drained	Erosion control measures may be needed.
Greenfield Sandy Loam	Well drained	Erosion is unlikely
Clear Lake Clay	Poorly drained	Erosion is unlikely
Cieneba - Rock outcrop Complex	Somewhat excessively drained	Erosion control measures likely

Source: NRCS, 2008

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 geologic units underlying the Proposed Project include Quaternary alluvium and Mesozoic metamorphic and granitic rocks. These geologic units are not known to be unstable.

Geotechnical studies would be conducted prior to construction, and site-specific geotechnical results would be used to finalize design and construction practices of the Proposed Project.

Landslides can occur in areas where the shear stress (gravity or seismic shaking) applied to an unrestrained slope is greater than the shear strength of the soil (determined by soil stratification and water seepage). In the area of the Proposed Project, there are few areas that are on or near slopes, and the alluvial soils present at the surface are relatively homogenous.

Because the probability of liquefaction is low, the probability of lateral spreading is also low. As discussed above, subsidence in the area of the Proposed Project is low, and due to the high infiltration of surface water during the alluvial soil deposition in the Pleistocene, the potential for encountering collapsible soils is also low. However, the geotechnical investigation conducted prior to construction would provide information to be utilized during final engineering design of facilities.

Operation Impacts

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

Operation of the Proposed Project would consist of annual inspection and routine maintenance of the transmission lines and access roads. The results of the geotechnical investigation conducted prior to construction would identify the need for any permanent erosion control measures that would be required to be installed during construction for the safe and reliable operation of the Proposed Project. Impacts would be less than significant.

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?

Prior to construction, a geotechnical investigation would have been conducted to provide site-specific details of unstable geologic units. The Proposed Project would incorporate the geotechnical information into final design in order to ensure the safe and reliable operation of the Proposed Project. There would be no impact due to unstable geologic units.

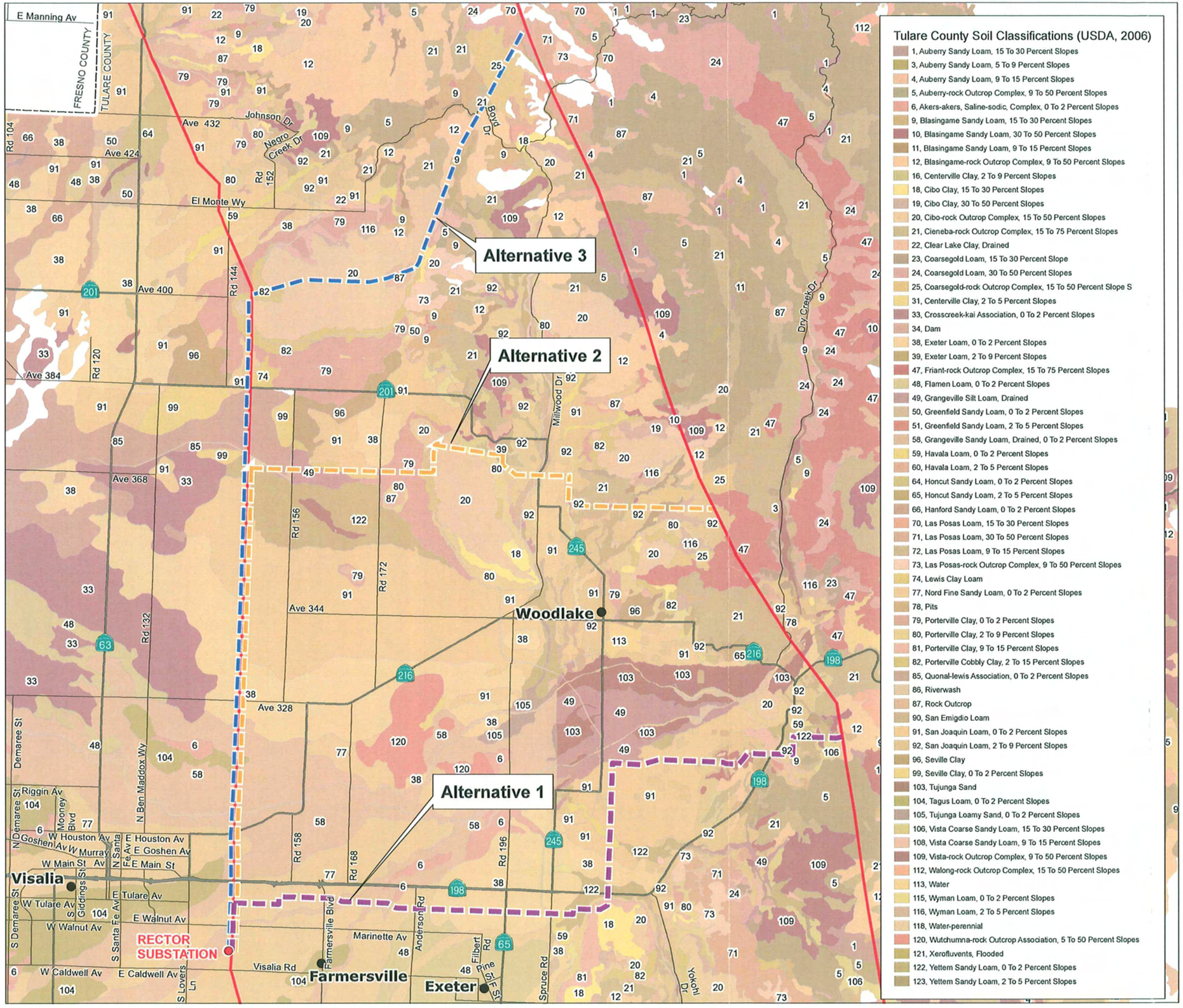
4.6.5 Mitigation

Because the Proposed Project would result in less than significant impacts to geology and soils, no mitigation measures are required.

4.6.6 Alternative 2

Alternative 2 is longer in length than the Proposed Project, is located in an area that has more topographic relief than the Proposed Project, and would require approximately 2 more miles of access roads be installed to access a greater number of structures. These elements, individually or collectively, would increase the potential for soil erosion. As a result, the Alternative 2 route would have more impact to geology and soils than the Proposed Project. However, with the implementation of mitigation measures to protect soil from erosion, impacts to geology and soils are expected to be less than significant.

Figure 4.6-1
Soil Map



Tulare County Soil Classifications (USDA, 2006)

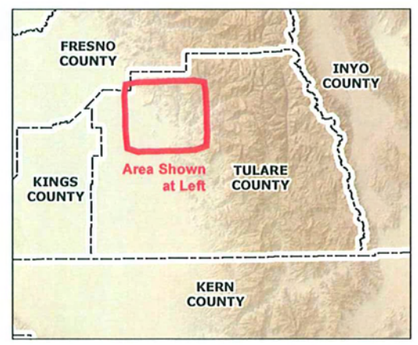
- 1, Auberry Sandy Loam, 15 To 30 Percent Slopes
- 3, Auberry Sandy Loam, 5 To 9 Percent Slopes
- 4, Auberry Sandy Loam, 9 To 15 Percent Slopes
- 5, Auberry-rock Outcrop Complex, 9 To 50 Percent Slopes
- 6, Akers-akers, Saline-sodic, Complex, 0 To 2 Percent Slopes
- 9, Blasingame Sandy Loam, 15 To 30 Percent Slopes
- 10, Blasingame Sandy Loam, 30 To 50 Percent Slopes
- 11, Blasingame Sandy Loam, 9 To 15 Percent Slopes
- 12, Blasingame-rock Outcrop Complex, 9 To 50 Percent Slopes
- 16, Centerville Clay, 2 To 9 Percent Slopes
- 18, Cibo Clay, 15 To 30 Percent Slopes
- 19, Cibo Clay, 30 To 50 Percent Slopes
- 20, Cibo-rock Outcrop Complex, 15 To 50 Percent Slopes
- 21, Cieneba-rock Outcrop Complex, 15 To 75 Percent Slopes
- 22, Clear Lake Clay, Drained
- 23, Coarsegold Loam, 15 To 30 Percent Slope
- 24, Coarsegold Loam, 30 To 50 Percent Slopes
- 25, Coarsegold-rock Outcrop Complex, 15 To 50 Percent Slope S
- 31, Centerville Clay, 2 To 5 Percent Slopes
- 33, Crosscreek-kai Association, 0 To 2 Percent Slopes
- 34, Dam
- 38, Exeter Loam, 0 To 2 Percent Slopes
- 39, Exeter Loam, 2 To 9 Percent Slopes
- 47, Friant-rock Outcrop Complex, 15 To 75 Percent Slopes
- 48, Flamen Loam, 0 To 2 Percent Slopes
- 49, Grangeville Silt Loam, Drained
- 50, Greenfield Sandy Loam, 0 To 2 Percent Slopes
- 51, Greenfield Sandy Loam, 2 To 5 Percent Slopes
- 58, Grangeville Sandy Loam, Drained, 0 To 2 Percent Slopes
- 59, Havala Loam, 0 To 2 Percent Slopes
- 60, Havala Loam, 2 To 5 Percent Slopes
- 64, Honcut Sandy Loam, 0 To 2 Percent Slopes
- 65, Honcut Sandy Loam, 2 To 5 Percent Slopes
- 66, Hanford Sandy Loam, 0 To 2 Percent Slopes
- 70, Las Posas Loam, 15 To 30 Percent Slopes
- 71, Las Posas Loam, 30 To 50 Percent Slopes
- 72, Las Posas Loam, 9 To 15 Percent Slopes
- 73, Las Posas-rock Outcrop Complex, 9 To 50 Percent Slopes
- 74, Lewis Clay Loam
- 77, Nord Fine Sandy Loam, 0 To 2 Percent Slopes
- 78, Pits
- 79, Porterville Clay, 0 To 2 Percent Slopes
- 80, Porterville Clay, 2 To 9 Percent Slopes
- 81, Porterville Clay, 9 To 15 Percent Slopes
- 82, Porterville Cobbly Clay, 2 To 15 Percent Slopes
- 85, Quonal-lewis Association, 0 To 2 Percent Slopes
- 86, Riverwash
- 87, Rock Outcrop
- 90, San Emigdio Loam
- 91, San Joaquin Loam, 0 To 2 Percent Slopes
- 92, San Joaquin Loam, 2 To 9 Percent Slopes
- 96, Seville Clay
- 99, Seville Clay, 0 To 2 Percent Slopes
- 103, Tujunga Sand
- 104, Tagus Loam, 0 To 2 Percent Slopes
- 105, Tujunga Loamy Sand, 0 To 2 Percent Slopes
- 106, Vista Coarse Sandy Loam, 15 To 30 Percent Slopes
- 108, Vista Coarse Sandy Loam, 9 To 15 Percent Slopes
- 109, Vista-rock Outcrop Complex, 9 To 50 Percent Slopes
- 112, Walong-rock Outcrop Complex, 15 To 50 Percent Slopes
- 113, Water
- 115, Wyman Loam, 0 To 2 Percent Slopes
- 116, Wyman Loam, 2 To 5 Percent Slopes
- 118, Water-perennial
- 120, Wutchumna-rock Outcrop Association, 5 To 50 Percent Slopes
- 121, Xerofluvents, Flooded
- 122, Yettem Sandy Loam, 0 To 2 Percent Slopes
- 123, Yettem Sandy Loam, 2 To 5 Percent Slopes

Routes
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)
- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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4.6.7 Alternative 3

Factors pertaining to Alternative 2 also apply to Alternative 3. In addition to the longer length, more topographic relief, approximately 7 more miles of access roads, and more footings that Alternative 3 has when compared to the Proposed Project, there is also a mapped landslide on Stokes Mountain (NRCS, 2008). This landslide would require a more thorough geotechnical investigation to evaluate the hazard, which would include at least ten extra borings up to 100 feet deep (MACTEC, 2007). If the results of the geotechnical investigation recommend engineered stabilization measures, the extra disturbance associated with the extra construction work would also increase the potential for soil erosion. Alternative 3 would result in more and greater impacts to soil and geology than the Proposed Project.

4.6.8 References

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4.7 Hazards and Hazardous Materials

This section describes the potential hazards associated with construction and operation of the Proposed Project, excluding the geological hazards discussed in Section 4.6, Geology and Soils, but including use of hazardous materials during construction, the likelihood of encountering historical soil or groundwater contamination during grading, and fire hazards. The potential impacts to hazards and hazardous materials, proposed mitigation measures, and alternatives are also discussed.

4.7.1 Environmental Setting

Tulare County's Office of Emergency Services provides fire and first-responder emergency and emergency medical aid services to all unincorporated areas of the County. The Tulare County Emergency Operations Plan outlines emergency actions that would take place in the event of a major emergency. Similarly, the City of Visalia has its own fire and first-responder services and emergency plans for disaster events and provides information to the public about how to obtain help from areas outside of a disaster zone (Tulare County, 2007; City of Visalia, 2008).

Tulare County has prepared a Multi-Hazard Functional Plan, addressing earthquakes, dam failures, flood, wildfire, war emergencies, hazardous materials incidences, aircraft crashes, and volcanic eruptions. This plan has named critical facilities to serve as evacuation centers, provide vital services, and provide emergency response. Critical facilities include hospitals, county dispatch facilities, electrical, gas, and telecommunication facilities, water storage and treatment systems, wastewater treatment systems, schools, and other government facilities. The plan also addresses evacuation routes, which include all freeways, highways, and arterials that are located outside of the 100-year floodplain. Tulare County has nine airports, five are publically owned and operated, and four are private (Tulare County, 2007).

The California Department of Forestry has a unit for Tulare County that has implemented a Fire Management Plan that identifies high-risk areas for wildfire, modifies fire fuels, and ensures that individual homes and communities have a defendable space. The Tulare unit has also ranked areas in Tulare County as having high fire fuel; these areas are primarily in the foothills to the Sierra Nevada Mountains (CDF, 2005).

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. This General Order by the CPUC specifies 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

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

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

Construction and operation of the Proposed Project would require the use of fuel and lubricants inside vehicles and equipment, but would not routinely transport, use, or dispose of hazardous materials. There would be no impact to the public through the public or the environment from the routine transport, use, or disposal of hazardous materials.

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?

There are no public or private airports within 2 miles of the Proposed Project. The nearest airport is Woodlake Airport, approximately 2.1 miles from the Proposed Project. There would be no safety hazard for personnel during construction or operation of the Proposed Project, and no impact to people residing or working in the project area from an airport during construction and operation of the Proposed Project.

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?

There are no identified private airstrips within 2 miles of the Proposed Project. There would be no safety hazard for personnel during construction or operation of the Proposed Project, and there would be no impact to people residing or working in the project area from a private airstrip during construction and operation of the Proposed Project.

Construction Impacts

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?

Vehicles and equipment used for construction would require the use of fuels and lubricants for operation. The potential exists for an accidental release of these hazardous materials during construction and refueling activities. The release of these materials has the potential to impact the environment if they are not properly contained.

The control of an accidental release of hazardous materials would be addressed in the SWPPP that would be prepared for the Proposed Project and submitted to the CRWQCB to obtain an NPDES permit for construction activities disturbing more than one acre. Included in SWPPPs are BMPs, a collection of control measures designed to minimize the effects of construction equipment and surface disturbance on the quality of storm water discharging from the site during a rain event (See Chapter 3, Project Description). These measures would reduce any impacts to

the public or the environment from an accidental release of hazardous materials into the environment to less than significant levels.

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?

There are three schools within one-quarter mile of the Proposed Project (TCOE, 2008).

- Kaweah High School, Community Day School, Independent Study, and Adult Education School, located at 21215 Avenue 300, Exeter; approximately 600 feet from the Proposed Project
- Union Elementary School, located at 28050 Road 148, Visalia; approximately 800 feet from Rector Substation
- Sequoia Union Elementary School, located at 23958 Avenue 324, Lemon Cove; approximately 1,160 feet from the Proposed Project.

Construction of the Proposed Project would involve the use of hazardous materials, such as fuels and lubricants, but these hazardous materials would be transported and dispensed by professionals with federally-mandated training on the safe transport, use, and emergency response requirements for the material. In addition, these materials are no different than those used to support agricultural operations in the area, or delivery trucks that support the local economy. Impacts due to handling hazardous materials within one-quarter mile of an existing or proposed school during construction of the Proposed Project would be less than significant.

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?

SCE conducted a limited Phase I Environmental Site Assessment (ESA) within a 0.5-mile radius centered on the transmission line route of the Proposed Project. The assessment included a review of federal, State, and local databases that identify sites registered on one or more environmental oversight agency database list. The search was performed to determine historical use and hazardous sites in proximity to the Proposed Project. A copy of the limited Phase I is presented in Appendix H.

According to the limited Phase I ESA, fifteen sites within one-half mile of the Proposed Project alignment have historically had contaminated soil or groundwater present. Five of the sites have been closed out by regulating authorities and it is unlikely there is soil or groundwater present with chemicals at concentrations above action levels at these sites. Two of the sites are undergoing groundwater remediation for gasoline.

None of the sites listed in the database search are within the existing ROW or ROW to be acquired for the Proposed Project, except Rector Substation. Rector Substation has been listed as a site having a historic fuel release from an underground storage tank, but the tank site has been closed (SCE, 2007). Results from the limited Phase I ESA indicate that overall, there would be a

low potential for encountering contaminated soil and/or groundwater during construction of the Proposed Project.

The transmission line route for the Proposed Project would utilize a portion of the former Visalia Electric rail bed. All of the ties for the railroad were removed by 1996, and no soil contamination associated with the railroad has been reported to the State of California (EFS, 2008).

Although there is a very low potential for contaminated soil to be encountered during construction, the geotechnical investigation would collect and analyze soil samples for common contaminants (including pesticides) prior to construction. If chemicals are detected in the soil samples at concentrations above action levels, SCE would decide whether to work with the property owner to remove the hazardous waste, or re-route the transmission line to the extent necessary to avoid contaminated soil. In addition, if unknown hazardous waste is encountered during construction, SCE would stop work and comply with all existing laws, rules, and regulations related to human health and safety regarding exposure and handling of hazardous waste.

Based on the information provided above, construction of the Proposed Project would not create a significant hazard to the public or the environment due to the presence of existing hazardous waste sites in the area.

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

In places where the Proposed Project spans a road, construction activities would be coordinated with the local jurisdiction so as not to cause closure of any emergency access route (please see Section 4.15, Traffic and Transportation, for more detail on road spans). Flaggers may briefly hold traffic back while pulling conductor across the 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 Proposed 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.

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 Tulare Unit of the California Department of Forestry has ranked the foothills areas in Tulare County as having high fire fuel; approximately 0.2 miles of the Proposed Project is located in the foothills. The remainder of the 18.3 miles is located on land that consists primarily of agricultural use, and is not particularly susceptible to wildfires. Construction of the Proposed Project may create a temporary increase in the risk of wildfires in the undeveloped area near the connection point with the Big Creek-Springville transmission lines. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. However, because the work areas would be cleared of vegetation prior to staging equipment for foundation and

structure installation, the likelihood of igniting a fire is low. Impacts to people and structures involving wildland fires would be less than significant.

Operation Impacts

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?

During operation of the Proposed Project, equipment would be used for inspection and routine maintenance of the transmission line and access roads. If an accidental spill should occur during operation, the SCE regional spill coordinator would be notified and all local and State notifications would be made, as required.

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?

Operation of the Proposed Project would consist of annual inspection and routine maintenance of the transmission line and access roads. These activities would not emit hazardous emissions or handle acutely hazardous materials outside of typical off-road equipment operation. Impacts to existing or proposed schools would be less than significant.

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?

If hazardous waste is encountered during construction of the Proposed Project, the waste would have been removed from the area or the transmission line would have been re-routed to avoid the area. Impacts to the public or the environment due to the presence of existing hazardous waste sites in the area during operation of the Proposed Project 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 overhead transmission line would not affect emergency plans or evacuation routes because the transmission line would span all potential emergency response and evacuation routes. Electrical facilities are considered critical facilities in the Tulare County Multi-Hazard Functional Plan, and every effort would be made by SCE to keep transmission lines in 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?

Operation of transmission lines may pose a fire hazard due to electrical arcing or from a lightning strike. When a conducting object, such as a tree limb, comes in close proximity to a conductor, there is a potential to produce an electrical arc and start a fire. To minimize the

chance of this occurring, the CPUC has developed and implemented G.O. 95, a regulation that specifies the maintenance of vegetative growth within a transmission line ROW. To protect the transmission lines from a lightning strike, OPGW would be installed on the poles and towers that would intercept any lightning that may be attracted to the towers or conductor, further preventing potential fire hazards.

Vehicles and equipment would use access roads and structure clearings to maintain the transmission line poles and towers. As a result, the potential for loss, injury, or death due to wildfire during operation is less than significant.

4.7.5 Mitigation

Because the Proposed Project would result in less than significant impacts to hazards and hazardous materials, no mitigation measures are required.

4.7.6 Alternative 2

Alternative 2 has a longer route, and has approximately 3 miles in high fire fuel areas. As a result, Alternative 2 would have a greater impact to hazards and hazardous materials than the Proposed Project. Hazards and hazardous waste impacts for Alternative 2 would be less than significant.

4.7.7 Alternative 3

Alternative 3 also has a longer route than the Proposed Project, and has approximately 9 miles in high fire fuel areas. As a result, Alternative 3 would have a greater impact to hazards and hazardous materials than the Proposed Project. Hazards and hazardous waste impacts for Alternative 3 would be less than significant.

4.7.8 References

California Department of Forestry. 2005. Fire Management Plan, Tulare Unit. [online] http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf135.pdf [cited May 2008].

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4.8 Hydrology and Water Quality

This section describes the groundwater and surface water resources in the area of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also described in this section.

4.8.1 Environmental Setting

Tulare County is located within the Tulare Lake Basin. The Tulare Lake Basin (Basin) is located in the southern portion of California's Central Valley, and drains the San Joaquin Valley south of the San Joaquin River. The Basin encompasses approximately 10.9 million acres of land, which includes all of Tulare and Kings Counties, and most of Fresno and Kern Counties (DWR, 2003). The Tulare Lake Basin consists of six watershed management areas, which drain the Sierra Nevada Mountains on the east side of the Central Valley and the Coastal Range to the west.

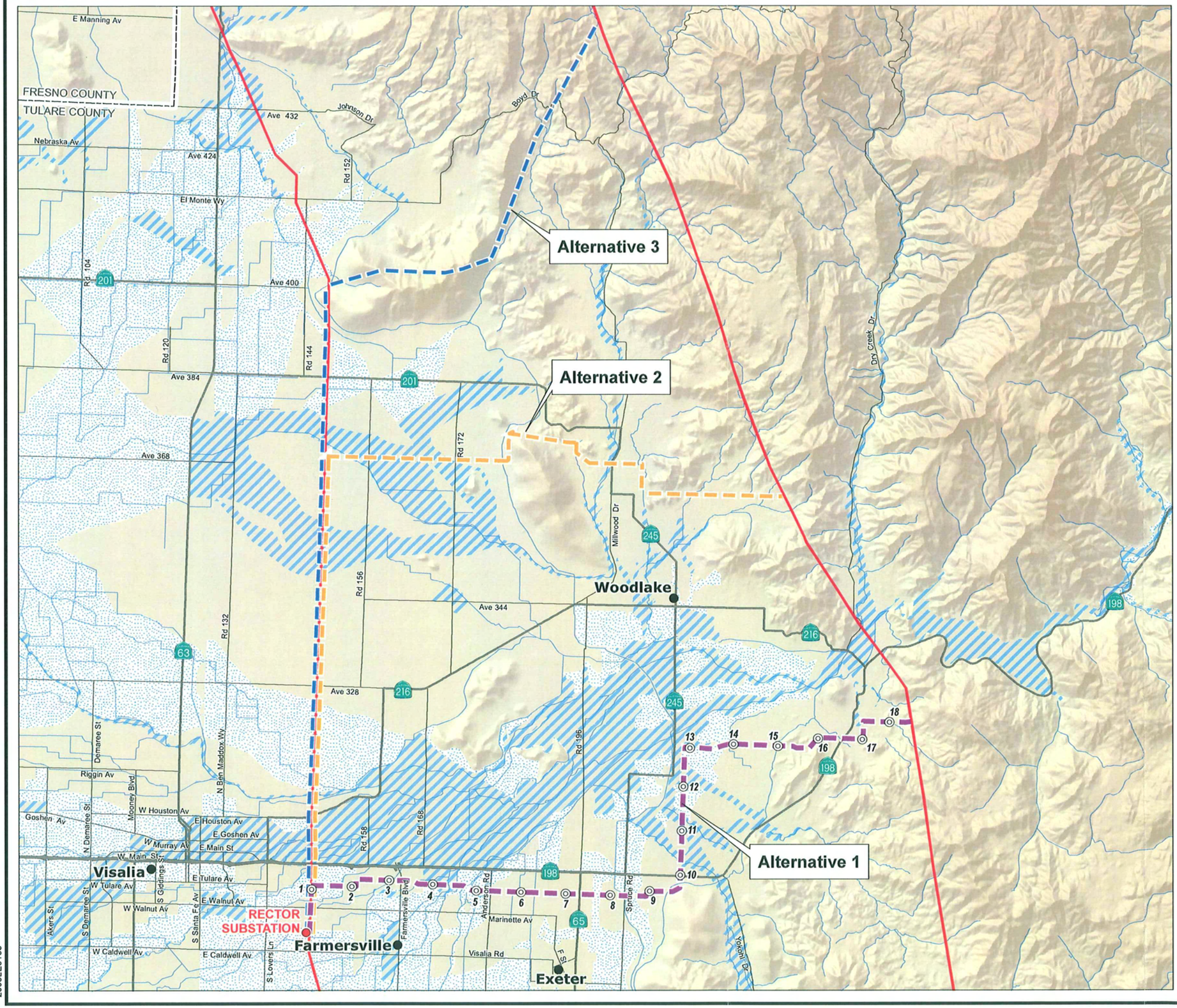
Tulare County has an inland Mediterranean climate that averages over 260 sunny days per year, primarily because semi-permanent high-pressure systems are present over the San Joaquin Valley and deflect low-pressure systems that might otherwise bring clouds, rain, and winds. Most of the rainfall in Tulare County occurs during the winter months, between November and March. Average annual precipitation in western Tulare County is approximately 9 inches per year (SJVAPCD, 2002).

The flow and/or movement of surface water in Tulare County is generally east to west, and it is either consumed by irrigation, evapotranspiration, and evaporation, or it percolates to groundwater. The east side of Tulare County is drained primarily by the Kings, Kaweah, and Tule Rivers. Most rivers, creeks, and irrigation canals in Tulare County are intermittent due to the seasonal nature of rainfall, the relatively low yearly rainfall totals, and fluctuating irrigation demand. The natural hydrology and drainage characteristics of land in northwestern Tulare County have been highly modified for agricultural use. Some natural drainages have perennial or intermittent reaches due to effects from dams or other water control structures. Major drainage channels are shown on Figure 4.8-1, Hydrology and FEMA Floodplain Boundaries in the Area of the Proposed Project.

Surface water storage in Tulare County includes the Terminous Dam on the Kaweah River, built in 1962 by the US Army Corps of Engineers for flood control and water conservation purposes. Scattered throughout Tulare County in the foothills and the valley floor are small ponds that are used to hold irrigation water.

Flooding is a natural occurrence in the Central Valley because it is a natural drainage basin for thousands of watershed acres of the Sierra Nevada and Coastal Range mountains. Two kinds of flooding typically occur in the Central Valley: general rainfall floods occur in the late fall and winter, and snowmelt floods occurring in the late spring and early summer. Most flooding is due to extended periods of precipitation during the winter months (Tulare County, 2007).

Figure 4.8-1
Hydrology and FEMA Floodplain Boundaries in the Area of the Proposed Project



Hydrology (TBM, 2007)

Flood Zones (FEMA, 1995)

100 Year

500 Year

Routes

Alternative 1 (Proposed Project)

Alternative 2

Alternative 3

Existing Electrical (SCE, 2007)

220 kV Transmission Line

Substation

Milepost

Transportation Lines (TBM, 2008)

County Boundaries (TBM, 2008)

Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

N

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Groundwater makes up a majority of the water resources in the western Tulare County. Groundwater flow in northwestern Tulare County tends to flow away from the Kaweah River, and ranges in depth from 30 to 80 feet below ground surface (DWR, 2006). Because of the closed nature of the Tulare Lake Basin, salts accumulate within the Basin due to importation and evaporative use of the water. The paramount water quality problem in the Basin is the accumulation of salts. This problem is compounded by the overdraft of groundwater for municipal, agricultural, and industrial purposes, and the use of water from deeper formations and outside of the Basin, which further concentrates salts within remaining groundwater. CRWQCB attempts to maintain and enhance water quality through the implementation of standards in the following categories: agriculture; overdraft of groundwater; salinity; silviculture; mineral exploration and extraction; erosion; recreation; groundwater well standards; controlled burning; municipal and domestic wastewater; hazardous and non-hazardous waste disposal; and other discharge activities (CRWQCB, 1995).

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; or

- Inundation by seiche, tsunami, or mudflow.

4.8.4 Impact Analysis

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

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

Construction of the Proposed Project would not be discharging effluent without a NPDES permit for storm water discharge from the CRWQCB, as discussed below. Operation of the Proposed Project would not discharge effluent at all. As a result, impacts to water quality standards and waste discharge requirements 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?

During installation of foundations for the transmission line of the Proposed Project, there is a possibility that shallow groundwater would be encountered. If this is the case, dewatering systems would be installed in the excavation as appropriate to allow construction under dry conditions. Dewatering activities would be temporary and would not affect groundwater levels in the region. Operation of the Proposed Project is not expected to deplete groundwater supplies. As a result, impacts to groundwater supply due to construction and operation of the Proposed Project 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 described above, because construction and operation of the Proposed Project would not substantially alter the drainage pattern of the area, construction and operation of the Proposed Project would have a less than significant effect on the existing drainage pattern in the area, and the surface water runoff from the clearance areas would not be at amounts to cause flooding.

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 development, there would be no impacts associated with a 100-year floodplain. As a result, there would be no impact to residences placed within a 100-year floodplain due to construction and operation of the Proposed Project.

Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Construction and operation of the Proposed Project would place structures within a 100-year floodplain, but the structures are of a size that would not impede or redirect flood flows. As a result, construction and operation of the Proposed Project would have a less than significant effect on flood flows within a 100-year floodplain.

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?

It is not expected that the transmission structures would be located in an area prone to scour during flood events. However, if the geotechnical report indicates that the structure foundations require protection from flood, appurtenances such as raised foundations and/or caissons would be installed to protect the structure from the effects of flooding. As a result, there would be no impact to exposing people or structures to significant risk involving flooding due to construction and operation of the Proposed Project.

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

The Proposed Project is not located in an area where people or structures would be exposed to a seiche or tsunami. As shown in Section 4.6, Geology and Soils, the Proposed Project is not located in an area of landslides, which indicates the probability of mudflows is also very low. As a result, there would be no impact to people or structures related to seiche, tsunami, or mudflow from construction and operation of the Proposed Project.

Construction Impacts

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 construction areas of the Proposed Project are small and dispersed over approximately 20 miles, and the construction setup areas and access roads would not alter existing drainages. The existing drainages in the area are shown on Figure 4.8, Hydrology in the Vicinity of the Proposed Project, and a list of drainages that would be spanned by the transmission line of the Proposed Project are listed in Table 4.8-1, Drainages Spanned by the Proposed Project. At this time, there are no drainage structures or wet crossings expected to be installed in access roads for the Proposed Project; however, this would be field-verified prior to construction. If drainage are required, SCE would install water bars, overside drains, culverts, or other engineered structures as needed to minimize erosion and siltation. As a result, construction of the Proposed Project would have a less than significant effect on the existing drainage pattern in the area and would not substantially contribute to erosion or siltation.

Table 4.8-1 Drainages Spanned by the Proposed Project

Watershed	Waterbodies Crossed	Type of Waterbody	Miles from Rector Substation
Kaweah River	Cameron Creek	Intermittent creek	0.4 and 3.1
	Tulare Irrigation Canal	Irrigation canal	0.8 and 1.8
	Unnamed tributary to Deep Creek	Intermittent creek	3.6
	Deep Creek	Intermittent creek	4.37
	Davis Ditch	Irrigation canal	4.55
	Outside Creek	Intermittent creek	4.7
	Pennebaker Ditch	Irrigation canal	4.92
	Rice Ditch	Irrigation canal	5.2
	Catron Ditch	Irrigation canal	5.98
	Locust Grove Ditch	Irrigation canal	6.3
	Friant-Kern Canal	Irrigation canal	8.36
	Foothill Ditch	Irrigation canal	9.42, 9.84, 14.95, and 16.5
	Hamilton Ditch	Intermittent creek	13.92
	Unnamed drainage	Intermittent creek	18.04, 18.1
Yokohl Creek	Yokohl Creek	Intermittent creek	10.32
	Unnamed drainage	Intermittent creek	11.35

Source: Thomas Brothers Maps, 2007

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?

Construction of the Proposed Project would include earth-disturbing activities (e.g., clearing, grading, and excavation) at each new structure location. Additional ground disturbance may be required at temporary work areas, access roads, pull sites, and staging areas. This soil disturbance may increase the rates of soil erosion, downstream sedimentation, or reduce the quality of surface water in the area. Surface water runoff from construction areas would be regulated under the NPDES program. This program includes the development and implementation of a SWPPP, the details of which are discussed in Chapter 3, Project Description. In addition, access roads would be designed to minimize ground disturbance from grading, follow natural ground contours as closely as possible, and include specific features for road drainage. These measures would further reduce any impacts due to storm water runoff to less than significant levels.

The Proposed Project would not install large-scale impervious surfaces that would excessively contribute to storm water runoff, but the construction areas would be compacted enough to minimize soil erosion and protect surface water quality during rain events. As a result, impacts to storm water drainage systems would be less than significant.

Would the project otherwise substantially degrade water quality?

The Proposed Project includes the installation of access roads, none of which are expected to cross drainages. However, if the field visits conducted prior to final engineering of the Proposed Project would identify areas for access roads to cross drainages, the crossings would include measures to protect surface water quality, such as overside drains, culverts, and other engineered structures.

The geotechnical investigation conducted prior to construction would provide information for suitable soil compaction rates in the construction areas, and prior to the closing of the SWPPP, the construction areas would be stabilized by compacting the soil at the structure sites and access roads to minimize soil erosion and protect surface water quality during rain events. As a result, impacts to water quality during construction of the Proposed Project would be less than significant.

Operation Impacts

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 construction and operation areas of the Proposed Project are small and dispersed over approximately 20 miles, and the construction setup areas and access roads would not alter existing drainages. At this time, there are no drainage structures or wet crossings expected to be installed in access roads for the Proposed Project; however, this would be field-verified prior to construction. If drainage are required, SCE would install and maintain water bars, overside drains, culverts, or other engineered structures as needed to minimize erosion and siltation. As a result, operation of the Proposed Project would have a less than significant effect on the existing drainage pattern in the area and would not substantially contribute to erosion or siltation.

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?

The Proposed Project would not install large-scale impervious surfaces that would excessively contribute to storm water runoff, but the unpaved areas associated with the Proposed Project would be compacted enough to minimize soil erosion and protect surface water quality during rain events. Impacts to storm water drainage systems would be less than significant.

Would the project otherwise substantially degrade water quality?

Operation of the Proposed Project would consist of annual inspection and routine maintenance of the transmission line and access roads. These activities are unlikely to substantially degrade water quality, and impacts would be less than significant.

4.8.5 Mitigation

Because the Proposed Project would result in less than significant impacts to hydrology and water quality, no mitigation measures are required.

4.8.6 Alternative 2

Alternative 2 is longer in length than the Proposed Project, is located in an area that has more topographic relief than the Proposed Project, and would require more access roads be installed to access a greater number of structures. These elements, individually or collectively, would have a greater potential for soil erosion and water quality problems than the Proposed Project. As a result, the Alternative 2 route would have more impact to hydrology than the Proposed Project. However, with the implementation of mitigation measures to protect soil and water quality, impacts to hydrology and water quality are expected to be less than significant.

4.8.7 Alternative 3

The elements that have the potential to cause greater impacts to hydrology and water quality for Alternative 2 also apply to Alternative 3. In addition, there is evidence of flooding in Stone Corral Canyon and Rattlesnake Creek on the Alternative 3 route. Site specific hydrological studies would be required and permanent flood control appurtenances are expected. Alternative 3 would have more and greater impact to hydrology and water quality than the Proposed Project.

4.8.8 References

Central Valley Regional Water Quality Control Board (CRWQCB). 2004. Water Quality Control Plan for the Tulare Lake Basin Second Edition. [online] http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp.pdf. [cited May 2008].

Department of Water Resources (DWR). 2003. California's Groundwater - Bulletin 118. [online] http://www.groundwater.water.ca.gov/bulletin118/update2003/index.cfm [cited May 2008].

DWR. 2006. Groundwater Level Data by Basin. [online] http://wdl.water.ca.gov/gw/download/download_well1thru3_CF.cfm [cited December 2006].

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Tulare County. 2007. County of Tulare General Plan Background Report [online] http://generalplan.co.tulare.ca.us/. [cited April 2008].

4.9 Land Use and Planning

This section discusses the existing and future land use and land use policy within the vicinity of the Proposed Project. Projects to construct electrical facilities are exempt from local land use and zoning regulations; however, CPUC G.O. 131-D Section IX.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." SCE has considered local and State land use plans as part of the environmental review and Proposed Project design process.

4.9.1 Environmental Setting

The Proposed Project is primarily located in Tulare County, with an approximate two-thirds of a mile section located in the City of Visalia, and an approximate one-half mile section in the City of Farmersville (Figure 4.9-1, Existing Land Use). The Tulare County area of California has historically been used for agriculture and grazing. Although rural-type land use continues to be the chief land use in Tulare County, there are portions that are experiencing rapid urbanized growth. According to the California Department of Conservation Farmland Mapping and Monitoring Program Farmland Conversion Report for Tulare County, the period of time between 1990 and 1998 experienced approximately 8,136 acres of land becoming newly urbanized, and between 1998 and 2006, a similar number of 7,387 acres of land became newly urbanized.

Tulare County and the cities of Visalia and Farmersville have outlined their long-term development strategy through their General Plans. These documents provide broad policies and objectives to be used to guide development. The Tulare County General Plan, the City of Visalia General Plan, and the City of Farmersville have designated areas to be used in the future for specific uses, such as Urban Reserve, Agricultural, Industrial, and Commercial. The designated land uses are shown on Figure 4.9-2, Designated Land Use. The Tulare County General Plan is in the process of being updated. The City of Visalia last amended its General Plan in 2001, and the City of Farmersville last amended its General Plan in 2002.

The Kaweah Delta Water Conservation District is planning to adopt several areas as HCPs/NCCPs for the purpose of mitigating biological effects of its projects. Section 4.4, Biological Resources, provides more information about these plans.

4.9.2 Regulatory Setting

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 (Public Utilities Commission of the State of California, 1995).

Figure 4.9-1
Existing Land Use

Land Use
(Tulare County Assessor's Office, 2007)

- Residential
- Commercial
- Industry
- Public/Quasi Public
- Agriculture
- All Other Categories

Proposed Routes

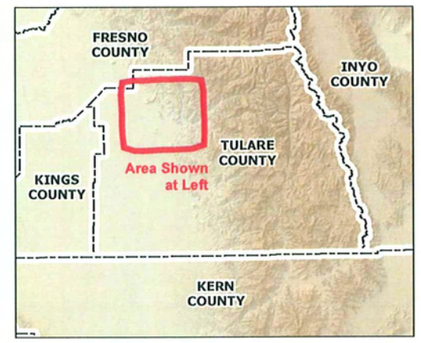
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation
- Milepost

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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Area Detail Map
City of Farmersville

FARMERSVILLE

Alternative 1
Alternative 2
Alternative 3

See Area Detail Map

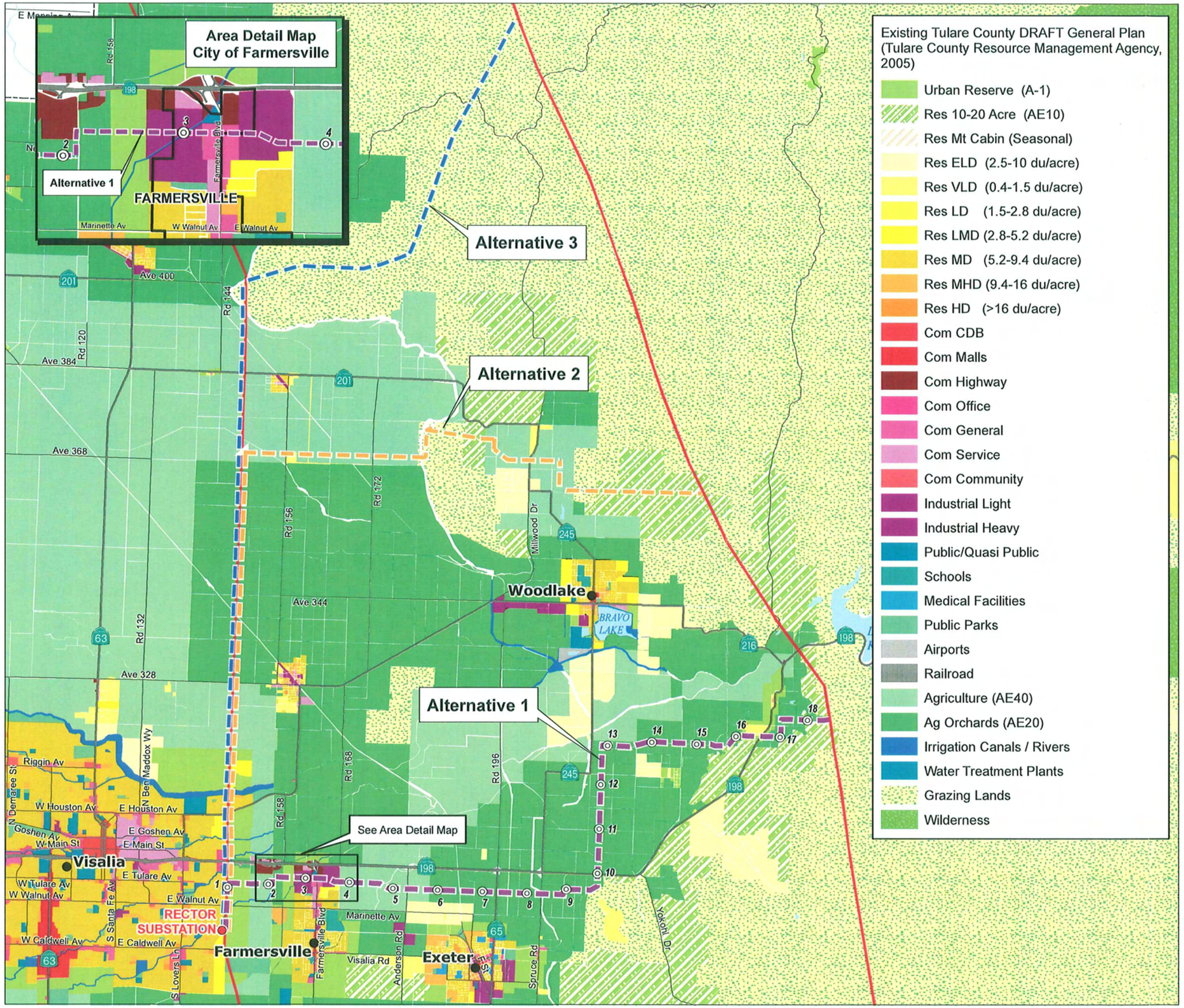
RECTOR SUBSTATION

FRESNO COUNTY
TULARE COUNTY

Visalia
Farmersville
Exeter
Woodlake

LAKE KAWEAH
BRAVO LAKE

Figure 4.9-2
Planned Land Use



Existing Tulare County DRAFT General Plan (Tulare County Resource Management Agency, 2005)

- Urban Reserve (A-1)
- Res 10-20 Acre (AE10)
- Res Mt Cabin (Seasonal)
- Res ELD (2.5-10 du/acre)
- Res VLD (0.4-1.5 du/acre)
- Res LD (1.5-2.8 du/acre)
- Res LMD (2.8-5.2 du/acre)
- Res MD (5.2-9.4 du/acre)
- Res MHD (9.4-16 du/acre)
- Res HD (>16 du/acre)
- Com CDB
- Com Malls
- Com Highway
- Com Office
- Com General
- Com Service
- Com Community
- Industrial Light
- Industrial Heavy
- Public/Quasi Public
- Schools
- Medical Facilities
- Public Parks
- Airports
- Railroad
- Agriculture (AE40)
- Ag Orchards (AE20)
- Irrigation Canals / Rivers
- Water Treatment Plants
- Grazing Lands
- Wilderness

Routes

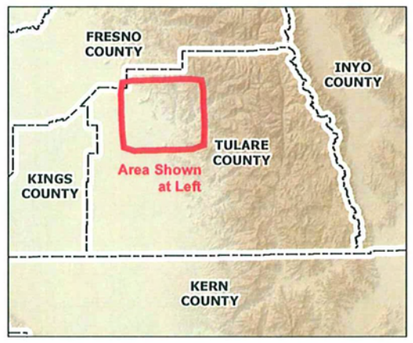
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation

- Milepost
- Transportation Lines (TBM, 2007)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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General Plans. The cities and counties in California have adopted general plans as required by the State (Government Code Section 65300 *et seq.*) to guide local decision-making regarding future land uses, growth, and other local decisions relating to circulation systems, public open space, public facilities (including schools and libraries). In addition to general plans, the State requires cities and counties to adopt a local zoning ordinance (Government Code Section 65800 *et seq.*) to implement their general plan through development standards and regulations.

Specific Plans. As permitted by State planning law and guidelines (Government Code 65450 *et seq.*), cities and counties are permitted to prepare and adopt specific plans to address both large-scale development proposals and the unique characteristics of sites. Specific plans must be consistent with local general plans but may augment or supplement development standards found in the local zoning ordinance.

Habitat Conservation Plans. In 1983, the United States Congress adopted Section 10 of the Endangered Species Act (ESA) 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 ESA 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. Approved HCPs vary greatly in size, duration, and species covered.

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.

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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.9.4 Impact Analysis

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

Would the project physically divide an established community?

Existing land use and designated land use along the transmission line route of the Proposed Project is summarized in Table 4.9-1, Existing and Designated Land Use. As shown in Table 4.9-1, Existing and Designated Land Use, the existing land use along the route of the Proposed Project consists of existing SCE ROW, agricultural use, and open space. Because the existing land use is predominantly agricultural with a few rural residential uses, and the substation work would occur within existing fencelines, construction and operation of the Proposed Project would not physically divide an established community.

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 General Plans for Tulare County and the cities of Visalia and Farmersville have not designated land for the purpose of avoiding or mitigating an environmental impact. None of the above mentioned entities have adopted environmental plans to mitigate an environmental impact. There would be no impact to environmental plans, policies, or regulations.

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

Construction and operation of the Proposed Project are unlikely to interfere with the execution of plans for the HCP/NCCP by the Kaweah Delta Water Conservation District. Please see Section 4.4, Biological Resources, for more information. There would be no impact to applicable HCPs or NCCPs.

Construction Impacts

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

Operation Impacts

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

Table 4.9-1 Existing and Designated Land Use for the Proposed Project Route

Miles from Rector Substation	Existing Land Use	Designated Land Use
0.0 to 1.1	Existing Southern California Edison right-of-way Adjacent land uses include open space, orchards, some rural residences, and a residential subdivision	Residential; (Urban Reserve on the east side of Road 148)
1.1 to 1.7	Agricultural (orchards)	Urban Reserve
1.7 to 2.4	Agricultural (orchards) and open space	Agricultural
2.5 to 2.7	Agricultural (orchards)	Urban Reserve
2.7 to 3.15	Agricultural (orchards)	Industrial
3.15 to 3.4	Open space	Commercial
3.4 to 3.8	Open space and agricultural (orchards)	Industrial
3.8 to 9.5	Agricultural (primarily orchards), some open space (including riparian areas at western end)	Agricultural
9.5 to 9.7	Open space	Grazing
9.7 to 15.4	Agricultural (primarily orchards apart from structures 73 to 76)	Agricultural
15.4 to 15.7	Open Space	Residential
15.7 to 16.1	Agricultural (orchards)	Agricultural
16.1 to 16.7	Agricultural (primarily orchards)	Urban Reserve
16.7 to 18.4	Agricultural (orchards)	Agricultural
18.4 to 18.45	Open space (prior orchard)	Residential
18.45 to 18.5	Open space	Grazing

Sources: Tulare County General Plan; City of Farmerville General Plan; Aerial photographs

4.9.5 Mitigation

Because the Proposed Project would result in no impact to land use and planning, no mitigation measures are required.

4.9.6 Alternative 2

Alternative 2 has a similar land use and planning setting as that for the Proposed Project. The construction and operation of the project using the Alternative 2 route would result in similar impacts to land use and planning as those for the Proposed Project. There would be no impact to land use and planning.

4.9.7 Alternative 3

Alternative 3 has a similar land use and planning setting as that for the Proposed Project. The construction and operation of the project using the Alternative 3 route would result in similar impacts to land use and planning as those for the Proposed Project. There would be no impact to land use and planning.

4.9.8 References

City of Farmersville. 2002. General Plan, Part I and Part II.

City of Farmersville. 2003. City of Farmersville Highway 198 Corridor Specific Plan.

City of Visalia. 1996. City of Visalia General Plan. Land Use Element.

Tulare County. 2001. County of Tulare General Plan Policy Summary. [online] http://www.westplanning.com/docs/tulare/gp_issue_summary.htm. [cited July 2006].

4.10 Mineral Resources

This section describes the mineral resources in the area of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also described.

4.10.1 Environmental Setting

Mineral extraction activities in Tulare County focus on aggregate (sand, gravel, and crushed stone). Other minerals present, but not mined, include asbestos, copper, gold, iron, and silver. Aggregate resources are the most valuable mineral resource in Tulare County because it is a major component of Portland Cement concrete and asphaltic concrete. There are an estimated 932 million tons of aggregate resources in Tulare County, and the Kaweah River has some of the highest quality aggregate deposits. The California Department of Finance estimated that the aggregate in the Woodlake-Lemon Cove area will be depleted by 2010 (Tulare County, 2007). The State has identified stone, sand and gravel resources in southwestern Tulare County (CGS, 2000).

There is a granite quarry in Lemon Cove that has applied for permit to expand operations by approximately 6 acres (Tulare County, 2007).

In 2002, Tulare County had a total of 61 active oil wells and 5 active gas wells producing a total of 39,000 barrels of oil. There are two areas where oil resources exist (Deer Creek and North Deer Creek), one area where gas resources exist (Trico), and one abandoned oil field (Terra Bella) (Tulare County, 2007).

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; or
- 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

Construction and operation of the Proposed Project would not produce 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 identified an area in the southwestern portion of Tulare County to have mineral resources of value to region and residents of the State. Construction and operation of the Proposed Project would have no impact to these resources.

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?

The closest mineral resources to the Proposed Project identified in the Tulare County General Plan are the aggregate mining operations in the Kaweah River bed, and a granite quarry near the connection point near Lemon Cove. Because these quarries are outside of the ROW to be acquired, and because the quarry near the connection point utilizes an access road different than the access road SCE is proposing, the construction of the Proposed Project would not result in the loss of availability of these mineral resources, nor would it interfere with the quarry operations.

Additionally, there appears to be a granite quarry near Mile 16, in the area where the Proposed Project crosses Moffett Drive and follows property boundaries in order to parallel an existing SCE 66 kV subtransmission line. This quarry is not identified in the Tulare County General Plan as a locally important mineral resource site.

The substation work would occur within existing substation fencelines. Operation of the Proposed Project would consist of the annual inspection and routine maintenance of the transmission lines and access roads. These activities would not result in the loss of availability of a known mineral resource or a loss of a local resource recovery site. As a result, the construction of the Proposed Project would not result in the loss of availability of a locally important mineral resource recovery site. Construction and operation of the Proposed Project would have no impact to the loss of availability of a locally important mineral resource.

Construction Impacts

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

Operation Impacts

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

4.10.5 Mitigation

Because the Proposed Project would result in no impact to mineral resources, no mitigation measures are required.

4.10.6 Alternative 2

There are no mineral resource sites identified by the State of California or Tulare County in its General Plan in the area of the Alternative 2 route. As a result, the impacts resulting from the construction and operation of Alternative 2 would be similar to those for the Proposed Project. There would be no impact to mineral resources.

4.10.7 Alternative 3

There are no mineral resource sites identified by the State of California or Tulare County in its General Plan in the area of the Alternative 3 route. As a result, the impacts resulting from the construction and operation of Alternative 3 would be similar to those for the Proposed Project. There would be no impact to mineral resources.

4.10.8 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 April 2008].

CGS. 2006. California Non-Fuel Mineral Production 2006. [online] http://www.conservation.ca.gov/cgs/geologic_resources/mineral_production/Pages/Index.aspx. [cited April 2008].

Taylor, G. 1997. Mineral and Land Classification Map, Concrete Resources, Tulare County Production-Consumption Region, Exeter, Ivanhoe, Rocky Hill, and Woodlake, Quadrangles, California Division of Mines and Geology, Open File Report 97-01, Sheets 1,2 and 6 of 7, scale 1:48,000.

Tulare County. 2007. County of Tulare General Plan Background Report [online] http://generalplan.co.tulare.ca.us/. [cited April 2008].

Tulare County. 2007. Tulare County Planning Commission Agenda. [online] http://www.co.tulare.ca.us/civica/filebank/blobdload.asp?BlobID=4498. [cited April 2008].

US Geological Survey. 2006. Minerals Yearbook Minerals Industry in California. [online] http://minerals.usgs.gov/minerals/pubs/state/ca.html. [cited April 2008].

4.11 Noise

This section describes the noise resources in the area of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.11.1 Environmental Setting

Noise is defined as an unwanted sound. In technical terms, sound is mechanical energy comprised of two components: amplitude (pressure differential) and frequency (pitch). Sound is generally measured in decibels (dB) and represents the magnitude of the pressure difference between a sound and a reference pressure (in most cases, atmospheric pressure), and is reported using a logarithmic scale. When measuring the effect of sound on humans, typically a measurement in decibels on the A-weighted scale (dBA) is used. A-weighting is intended to duplicate the human response by reducing the weight of low frequency sounds and slightly increasing the weighting of high frequency sounds.

Features such as walls, variations in ground-surface topography, vegetation, and buildings, have the ability to attenuate, or lessen, the sound energy that reaches a receptor. Typical atmospheric attenuation rate for point source noise is 6 dBA per doubling of the distance (Thumann, 1990). Tulare County typically uses the atmospheric attenuation rate in addition to an attenuation rate in rural areas of 4.5 dBA per doubling of the distance due to the ability of the ground surface in Tulare County to absorb sound (Tulare County, 2007a).

Sources of sound in Tulare County include roads, railroads, aircraft operations, manufacturing equipment, food processing equipment, landfill activities, water pump operations, aggregate processing, recreation complexes, wind machines, and agricultural operations. There are nine airports/airstrips in Tulare County. Seven of these airports are open for public use (Tulare County, 2007a). Sensitive receptors of noise in Tulare County include residential areas, hospitals, convalescent homes and facilities, and schools. Typical noise levels in noise sensitive areas of the unincorporated areas of Tulare County are in the range of 29-65 dB L_{dn}[1]. (Tulare County, 2007a).

Vibration is generally an issue for buildings containing stationary mounted mechanical equipment. Tulare County identifies airports and roadways as sources of groundborne vibration (Tulare County, 2007b).

4.11.2 Regulatory Setting

There are no applicable State or federal laws or regulations concerning noise for the Proposed Project. The following policies are presented for informational purposes only. Projects subject to G.O. 131-D are not subject to local planning restrictions per Section XIV.B.

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[1] L_{dn} is an abbreviation for day-night average sound level, and represents the 24-hour average sound level expressed as dBA that has incorporated an additional 10 dB assigned to sound levels occurring during the hours of 10 pm to 7 am.

Tulare County Noise Policies. Tulare County does not have a noise ordinance. Policy 4.A.1 of the Tulare County General Plan Policy Summary, Section 4, Noise, states that "areas within Tulare County shall be designated as noise-impacted if exposed to existing or projected future noise levels at the exterior of buildings which exceed 60 dB L_{dn}."

City of Visalia Noise Policies. Noise standards for construction equipment are described in the City of Visalia's Municipal Code Section 8.36.050, Mobile Noise Sources Prohibition Against Use. It is unlawful to operate any of the below-listed devices, appliances, equipment, or vehicles on public or private property abutting noise-sensitive land uses between the weekday hours of 7 pm and 6 am, and between the weekend hours of 7 pm and 9 am: construction equipment, including jackhammers, portable generators, pneumatic equipment, trenchers, or other such equipment, except for emergency repair purposes as provided in Section 8.36.070. The Municipal Code Section 8.36.030 Noise Measurement Criteria states, "exterior noise levels shall be measured within fifty (50) feet of the affected residence, school, hospital, church, or public library." And the City of Visalia General Plan Noise Element states "Areas within Visalia shall be recognized as noise impacted if exposed to existing or projected future noise levels at the exterior of buildings which exceed 65 dB L_{dn}."

City of Farmersville Noise Policies. The City of Farmersville has adopted the Noise Element from the Tulare County General Plan, summarized above.

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 would 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;
- 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; or
- 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

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

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?

City of Visalia and Tulare County have adopted airport land use plans. The nearest identified airport or airstrip is Woodlake Airport, approximately 2.1 miles from the nearest point of the Proposed Project, and the Proposed Project is not within its airport zone. Due to the distance from the airport to the Proposed Project, there would be no impact to personnel at the Proposed Project sites during construction or operation from being exposed to excessive noise levels from airports or airstrips.

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

There are no identified airstrips within 2 miles of the Proposed Project. As a result, there would be no impact to personnel at the Proposed Project sites during construction or operation from being exposed to excessive noise levels from airstrips.

Construction Impacts

Would the project result 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?

Tulare County does not have a noise ordinance. However, the General Plan considers areas to be noise impacted if the exterior of the building has a noise level exceeds 60 dB L_{dn}. The nearest building to a transmission structure site is approximately 100 feet, and construction equipment for the Proposed Project is not expected to be continuously operating during the day. The Proposed Project is unlikely to exceed the Tulare County noise policy during construction.

The City of Visalia allows for construction noise in areas abutting noise-sensitive land uses if it occurs during the hours of 6am and 7pm on weekdays, and 9am and 7pm on weekends. If construction of the Proposed Project must occur outside these hours, a noise variance would be obtained from the City. Construction activities for the Proposed Project are expected to occur during the day, and nighttime work is not anticipated. As a result, the generation of noise levels in excess of standards would be less than significant.

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

Construction of the Proposed Project does not include equipment that would produce excessive groundborne vibration, except blasting. If blasting is used as an excavation technique during construction of the Proposed Project, it would occur in limited areas (near the connection point

and in areas of past and present quarry operations) and would require federally licensed personnel to handle the explosives, as well as an explosives use permit from Tulare County. As discussed in Section 4.10, Mineral Resources, there is one active quarry, and one quarry that appears to be in operation. Any blasting that occurs that is associated with the Proposed Project would be in very limited areas and indistinguishable from normal quarry operations. Impacts resulting from groundborne vibration would be less than significant.

Would the project result in 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 impact to permanent increases in noise levels during construction of the Proposed Project.

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

Equipment used to construct the Proposed Project would be similar to the equipment used for agricultural operations in the area. This equipment may include graders/dozers, backhoes, dump trucks, chainsaws, crew trucks, drill rigs, 75-ton hydraulic cranes, boom trucks, tensioners, and possibly helicopters. Noise levels would vary with the type of activity and equipment being used. Table 4.10-1, Typical Noise Levels of Construction Equipment, provides the typical noise levels for some of the construction equipment that would be used.

The maximum intermittent noise levels are expected to range from 69 to 98 dBA at approximately 50 feet for grading and transmission line structure installation. Construction of the Proposed Project would not represent a substantial increase in temporary noise levels. Noise associated with construction of the transmission line would be temporary and in limited locations, and would primarily occur in areas of agricultural activities.

Sensitive receptors include residences, convalescent homes, and schools. There are seven residences within 500 feet of the Proposed Project outside of existing SCE ROW, and the distances from the residences to the Proposed Project construction sites range from 100 feet to 320 feet. All of these sensitive receptors are residences; there are no hospitals, convalescent homes, or schools identified within 500 feet of the Proposed Project. In addition, there are several housing developments in the City of Visalia that abut the existing transmission line ROW. Construction activities for the Proposed Project are expected to occur during the day, and nighttime work is not expected.

The construction work for the substation upgrades would occur on the existing substation property. There is one residence within 500 feet of Rector Substation; there are no other sensitive receptors within 500 feet of construction at the other substations. The substation construction would be of limited duration and nighttime work is not expected to occur.

Because construction of the Proposed Project would likely occur during daylight hours and would be similar in nature to many of the activities associated with normal agricultural operations, impacts to producing a substantial temporary increase in noise would be less than significant.

Table 4.10-1 Typical Noise Levels of Construction Equipment

Equipment	Noise Level (dBA) Range at Approximately 50 Feet
Earth Moving	
Front loaders	72 – 84
Backhoes	72 – 93
Tractors, dozers	76 – 96
Scrapers, graders	80 – 93
Pavers	86 – 88
Trucks	82 – 94
Materials Handling	
Concrete mixers	75 – 88
Concrete pumps	81 – 83
Cranes (movable)	75 – 86
Cranes (derrick)	86 – 88
Helicopter	92
Stationary	
Pumps	69 – 71
Generators	71 – 82
Compressors	74 – 86
Impact[1]	
Pneumatic tools	82 – 87
Jackhammers and rock drills	80 – 97
Compactors	83 – 89

Source: Magrab, 1975; FAA, 2001

[1]The published noise-level ranges for impact equipment were estimated from a distance of 45 feet. The ranges presented in this table reflect the estimated noise level at 50 feet in Tulare County.

Operation Impacts

Would the project result 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?

The Tulare County General Plan considers areas to be noise impacted if the exterior of the building has a noise level exceeds 60 dB L_{dn}, and the City of Visalia considers areas to be noise impacted if the exterior of the building has a noise level exceeds 65 dB L_{dn}.

Energized electrical wires have the potential to experience corona discharge. To better understand the effects of noise from operation of the Proposed Project, SCE requested CH2M HILL to model corona noise produced during operation of the Proposed Project. The results are summarized below.

Corona is the ionization of the air that occurs at the surface of the energized conductor and suspension hardware due to very high electric field strength at the surface of the metal during certain conditions. The amount of corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductor (or bundle of conductors), the elevation of the line above sea level, the condition of the conductor and hardware and the local weather conditions. Corona typically becomes a design concern for transmission lines at 345 kV and above and is less noticeable on lines operated at lower voltages.

Raindrops, fog, frost, and condensation accumulated on the conductor surface are sources of surface irregularities that can increase corona. During fair weather, the number of these sources of surface irregularities is fewer, and the corona effect is also low. However, during wet weather, the number of these sources of surface irregularities increases (for instance due to rain drops standing on the conductor and energized hardware) and corona effects are greater. During wet conditions or foul weather conditions, the conductor produces the greatest amount of corona noise. However, during heavy rain the ambient noise generated by the falling raindrops would typically be greater than the noise generated by corona.

Existing corona noise was modeled at one representative location along the Big Creek 1-Rector and Big Creek 3-Rector 220 kV transmission line ROW. The estimated corona noise that would be produced by operation of the Proposed Project was evaluated at two locations: one within the existing ROW and one in the ROW to be acquired. The locations and results are presented in Table 4.11-2, Corona Noise Modeling for the Proposed Project.

Table 4.11-2 Corona Noise Modeling for the Proposed Project

Location[1]	**Modeled Audible Corona Noise Level at Edge of ROW**
Existing ROW Before Construction of the Proposed Project	Approximately 20 dBA
Existing ROW After Construction of the Proposed Project	Approximately 37 dBA
ROW to be Acquired After Construction of the Proposed Project	Approximately 35 dBA

[1]Locations were selected based on the proximity to sensitive receptors and the highest elevation above sea level. The values shown in the table are produced from modeling corona noise during wet conditions. These criteria would produce the worst-case scenario for corona noise before and after construction of the Proposed Project.

The modeling conducted by CH2M HILL estimates that the corona noise from operation of the Proposed Project would likely be less than 40 dBA at the edge of ROW during wet conditions.

This value is less than the values provided in the guidelines used to determine noise impacted areas by the City of Visalia and Tulare County, which range from 60 to 65 dBA. As a result, the generation of noise levels during operation of the Proposed Project in excess of standards would be less than significant.

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

Operation of the Proposed Project would consist of annual inspection and routine maintenance of the transmission line and access roads. These activities would not expose people to groundborne vibration. Impacts due to the generation of excessive groundbourne vibration would be less than significant.

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

The operation of the substation components would be no different from what already exists. Breakers operate in emergency situations to protect electrical equipment from overloading. The additional breakers at Rector Substation would not contribute to noise in the surrounding area. The areas surrounding the substations would not experience an increase in noise during operation. Impacts to a permanent increase in noise from operation of the Proposed Project would be less than significant.

Would the project result in 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 annual inspection and routine maintenance of the transmission line and access roads. These activities are not substantially different than the activities that regularly occur to support agricultural operations in the area, and would not contribute to a temporary increase in ambient noise in the area. Impact to noise would be less than significant.

4.11.5 Mitigation

Because the Proposed Project would result in less than significant impacts to noise, no mitigation measures are required.

4.11.6 Alternative 2

The Alternative 2 route has a similar environmental noise setting as the Proposed Project. However, due to the increased amount of teardown and rebuild that would take place in SCE's existing ROW that must occur during an outage of those transmission lines, there is a greater probability of nighttime work. Impacts to noise would be greater than those for the Proposed Project; however, impacts would be less than significant.

4.11.7 Alternative 3

The Alternative 3 route has a similar environmental noise setting as the Proposed Project. However, due to the increased amount of teardown and rebuild that would take place in SCE's existing ROW that must occur during an outage of those transmission lines, the probability of nighttime work is very high. Impacts to noise would be greater than those for the Proposed Project; however, impacts would be less than significant.

4.11.8 References

City of Visalia. 2006. General Plan, Noise Element. [online] http://www.ci.visalia.ca.us/Community_Development/publications/NOISE%20ELEMENT%20TO%20THE%20GENERAL%20PL.pdf. [cited May 2006].

City of Visalia. 2006. Municipal Code Title 8 Health and Safety, Chapter 8.36 Noise. [online] http://www.amlegal.com/nxt/gateway.dll/California/visalia_ca/title8healthandsafety/chapter836noise?f=templates$fn=altmain-nf.htm$q=noise%20$x=server$3.0#LPHit1. [cited May 2006].

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Thumann, Albert, R.K. Miller. 1990. *Fundamentals of Noise Control Engineering, 2nd Ed.* Fairmont Press, Lilburn, Georgia.

Tulare County. 2007a. County of Tulare General Plan Background Report [online] http://generalplan.co.tulare.ca.us/. [cited April 2008].

Tulare County. 2007b. Tulare County General Plan Update Draft Environmental Impact Report. [online] http://generalplan.co.tulare.ca.us/. [cited April 2008].

US Environmental Protection Agency. 2006. Code of Federal Regulations Title 40—Protection of Environment, Chapter I—Environmental Protection Agency, Part 204—Noise Emission Standards for Construction Equipment. [online] http://www.nonoise.org/lawlib/cfr/40/40cfr204.htm. [cited May 2006].

4.12 Population and Housing

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

4.12.1 Environmental Setting

The Proposed Project is located in Tulare County, California, an area that has experienced substantial population growth over the past 20 years. Table 4.12-1, Historic and Estimated Population Growth, summarizes population totals for cities in Tulare County. Between 1980 and 2005, Tulare County experienced a five-year growth rate of approximately 10 percent, and projections indicate that it will continue to grow at a rate of approximately 6 percent. The City of Visalia is the largest city within Tulare County, accounting for approximately one-quarter of the County's population.

Table 4.12-1 Historic and Estimated Population

Year	City of Visalia	City of Farmersville	City of Exeter	Tulare County
1980	49,729	5,544	5,606	245,738
1985	60,200	6,200	6,325	277,300
1990	74,000	6,225	7,275	309,200
1995	87,388	7,340	8,556	347,539
2000	91,891	8,737	9,168	368,021
2005	107,694	10,254	10,370	410,393
2010	110,000	11,200	11,000	433,122
2015	121,500	13,000	12,250	460,204
2020	134,200	15,090	13,640	492,370

Sources: California Department of Finance, 2008; Tulare County, 2007

Between 1990 and 2005, the City of Visalia experienced a 45 percent increase in population, the City of Farmersville a 65 percent increase, and the City of Exeter a 42 percent increase in population.

In 2006, there were approximately 10,000 vacant housing units in Tulare County, representing approximately 8 percent of the total (US Census Bureau, 2008).

4.12.2 Regulatory Setting

There are no population or housing laws, rules, or regulations that apply to projects subject to G.O. 131-D.

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

4.12.4 Impact Analysis

Construction and operation of the Proposed Project would not produce 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 9 to 12 months, and during peak times, SCE expects to have approximately 50 craft laborers per day working during construction. It is expected that at least 30 to 40 of the craft personnel would be from the contractor's pool of experienced personnel, with the remaining construction personnel coming from local sources. Some need for temporary accommodations is likely to arise during construction. However, there are numerous hotel and motel accommodations within the City of Visalia and Tulare County. Operation of the Proposed Project would require the annual inspection and occasional maintenance of the transmission line and access roads. No increase in SCE personnel is expected.

Although the Proposed Project involves construction of a new transmission line, it is designed to improve existing and projected reliability problems in the transmission system, and not to induce growth (see Chapter 6, Other CEQA Considerations, for more information). 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 people, necessitating the construction of replacement housing elsewhere?

The route of the Proposed Project would primarily be across land used for agriculture. However, there is one residential home that would require removal prior to construction. It is not expected that any other residences, businesses, or people would be displaced as a result of construction or

operation of the Proposed Project. Therefore, there would be no displacement of substantial numbers of people for the construction and operation of the Proposed Project.

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

As described above, construction of the Proposed Project would require the removal of one existing home. Because Tulare County has an 8 percent residential unit vacancy rate, it is expected that no new construction would be required elsewhere. There would be no displacement of substantial numbers of existing housing from the construction and operation of the Proposed Project.

Construction Impacts

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

Operation Impacts

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

4.12.5 Mitigation

Because the Proposed Project would result in no impact to population and housing, no mitigation measures are required.

4.12.6 Alternative 2

The Alternative 2 route to the project is also in Tulare County, and has a similar setting for population and housing. As a result, impacts to population and housing would be similar as those to the Proposed Project. There would be no impact to population and housing.

4.12.7 Alternative 3

The Alternative 3 route to the project is also in Tulare County, and has a similar setting for population and housing. As a result, impacts to population and housing would be similar as those to the Proposed Project. There would be no impact to population and housing.

4.12.8 References

City of Visalia Convention and Visitors' Bureau. Personal communication with B. Hart, TRC Essex on August 3, 2006.

State of California, Department of Finance. 2008. [online] Table E-4 Historical Population Estimates. http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/ ReportsPapers.php#census. [cited April 2008].

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Tulare County Association of Governments. 2003. [online] Tulare County Data Book. http://www.tularecog.org/census/2003%20data%20book.pdf. [cited April 2008].

US Census Bureau. 2008. Fact Sheet Tulare County, California. [online] http://factfinder.census.gov/ [cited April 2008].

4.13 Public Services

This section describes the public service resources in the vicinity of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.13.1 Environmental Setting

Fire protection in the vicinity of the Proposed Project is provided by Tulare County, the City of Visalia, and the City of Farmersville. The Tulare County Fire Department provides fire protection and first-responder emergency medical aid services to all unincorporated areas of Tulare County. The cities of Visalia and Farmersville have fire departments that provide fire suppression, emergency response, and emergency hazardous materials response services (Tulare County, 2008; City of Visalia, 2008; City of Farmersville, 2002).

Similarly, law enforcement in the vicinity of the Proposed Project is provided by Tulare County, the City of Visalia, and the City of Farmersville. The California Highway Patrol has an office in Visalia, which provides law enforcement along the State highway system within the greater Visalia area.

Tulare County has 47 school districts, with approximately 172 public schools and 21 private schools (Tulare County, 2008). There are five school districts in the vicinity of the Proposed Project: Visalia Unified, Farmersville Unified, Stone Corral, Cutler-Orosi Unified, and Woodlake Union School Districts. Schools within the vicinity of the Proposed Project are shown on Figure 4.13, Schools in the Vicinity of the Proposed Project.

Tulare County has numerous hospitals, medical centers, health service facilities, and physicians' offices. The City of Visalia has a population of more than 100,000 people, and has several surgery centers and urgent care clinics, and one major hospital.

4.13.2 Regulatory Setting

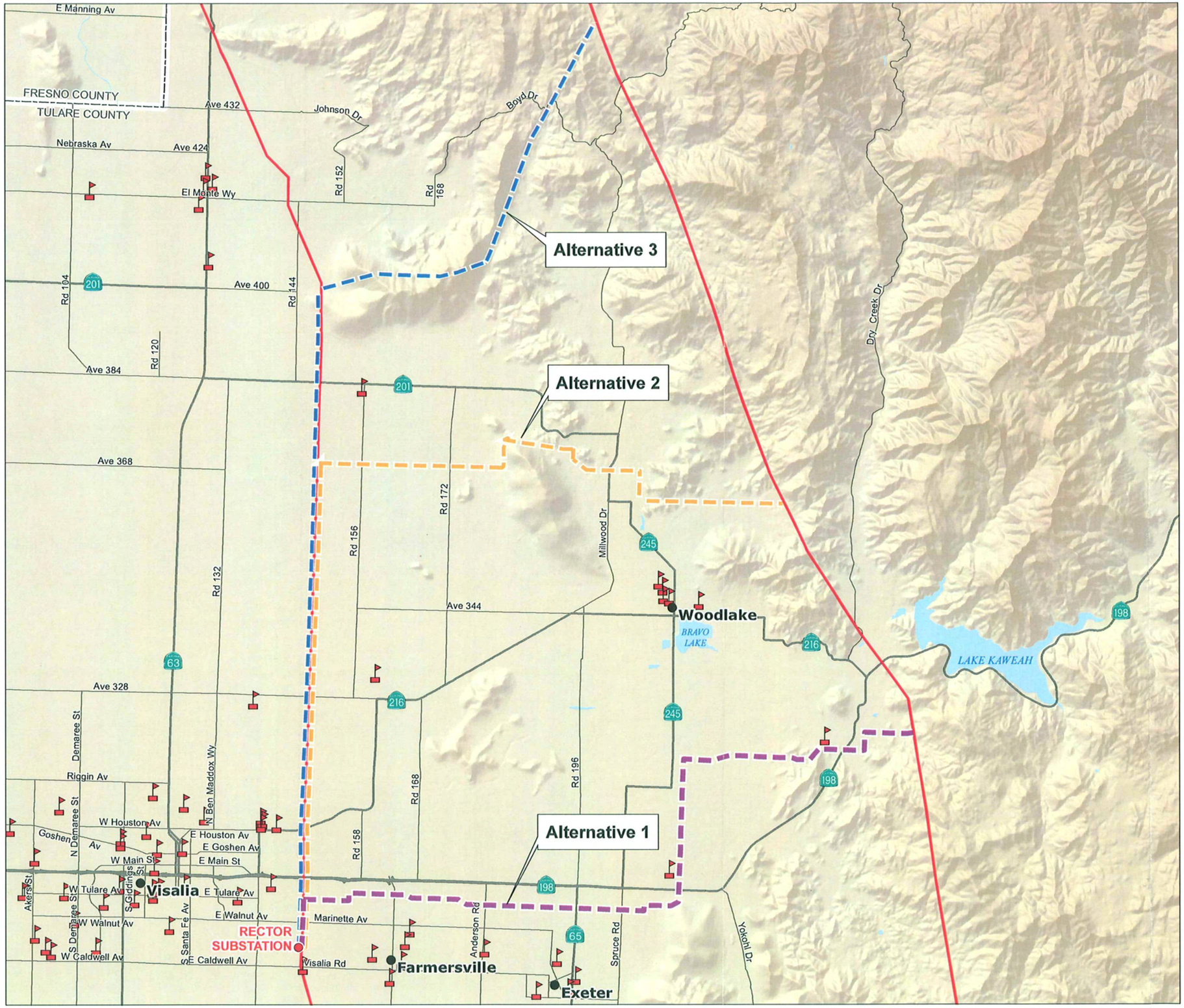
There are no public service laws, rules, or regulations that apply to the Proposed Project or its alternatives.

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.

Figure 4.13
Schools in the Vicinity of the Proposed Project



Schools (TBM, 2007 & Tulare County Office of Education, 2008)

Routes

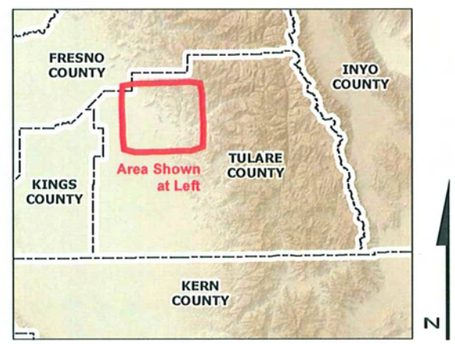
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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4.13.4 Impact Analysis

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?

Construction impacts to public services are not expected to occur. As discussed in Section 4.5, Hazards and Hazardous Materials, there would be limited construction in a high fire fuel area. SCE would clear vegetation from the work areas prior to staging construction equipment, minimizing the probability of fire. The short-term construction activities would not require the expansion of fire protection services in the City of Visalia, the City of Farmersville, or in Tulare County.

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.

There are three schools within one quarter mile of the Proposed Project.

- Kaweah High School, Community Day School, Independent Study, and Adult Education School, located at 21215 Avenue 300, Exeter; approximately 600 feet from the Proposed Project
- Union Elementary School, located at 28050 Road 148, Visalia; approximately 800 feet from Rector Substation
- Sequoia Union Elementary School, located at 23958 Avenue 324, Lemon Cove; approximately 1,160 feet from the Proposed Project.

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

No emergency service providers or hospitals are within one-quarter mile of the Proposed Project. Because most of the Proposed Project would be constructed away from major roads and thoroughfares, it is not anticipated that construction activities would indirectly affect public services.

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.

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 the annual inspection and routine maintenance of the transmission line and access roads. These activities are unlikely to require the use of public services.

The fire and police departments and hospitals in the area are adequately equipped to handle any emergencies that may occur as a result of operation of the Proposed Project, and no additional need for government or public services would be required.

Because project construction would have no growth-inducing impacts (please see Chapter 6, Other CEQA Considerations, 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 no impact to public services.

4.13.5 Mitigation

Because the Proposed Project would result in less than significant impacts to public services, no mitigation measures are required.

4.13.6 Alternative 2

The public services for the Alternative 2 route are similar to those for the Proposed Project. Alternative 2 would have similar impacts to public services than the Proposed Project. Impacts would be less than significant.

4.13.7 Alternative 3

The public services for the Alternative 3 route are similar to those for the Proposed Project. Alternative 3 would have similar impacts to public services than the Proposed Project. Impacts would be less than significant.

4.13.8 References

City of Visalia. 2008. [online] http://www.ci.visalia.ca.us/ [cited April 2008].

City of Visalia Convention and Visitors' Bureau. Personal communication with B. Hart, TRC Essex on August 3, 2006.

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Tulare County. 2008. [online] http://co.tulare.ca.us/default.asp. [cited April 2008].

Tulare County Office of Education. 2008. Tulare County School Districts. [online] http://www.tcoe.org/Districts/index.shtm [cited April 2008].

4.14 Recreation

This section describes the recreation in the vicinity of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.14.1 Environmental Setting

Tulare County has several options for recreation facilities, including parks, sports facilities, and campgrounds. At the federal level, Kings Canyon and Sequoia National Parks are in Tulare County, as well as Sequoia National Forest. The US Army Corps of Engineers operates the Terminous Dam (forming Lake Kaweah) and the Success Dam (forming Lake Success) and maintains recreational areas at each reservoir for public use.

Tulare County maintains 12 parks. The City of Visalia has 32 parks, and in 2002, the City of Farmersville had six parks, and was planning four more. The Sequoia Riverlands Trust, a nonprofit group, manages a 324 acre Valley Oak riparian forest preserve north of Highway 198 and east of Farmersville. This preserve is called the Kaweah Oaks Preserve, and it is open to the public (Tulare County, 2007; City of Visalia, 2008; City of Farmersville, 2002; SRT, 2008). Parks and open spaces in the vicinity of the Proposed Project are shown on Figure 4.14, Parks and Open Spaces.

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; or

- 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

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?

The nearest recreational facility to the Proposed Project is approximately 0.3 miles away. Construction and operation of the Proposed Project would not involve the use of recreational facilities. Therefore, construction and operation of the Proposed Project would not result in the need for additional recreational facilities, nor the expansion or 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?

Construction and operation of the Proposed Project does not include new or expanded recreational facilities. There would be no impact to the environment from new or expanded recreational facilities.

Construction Impacts

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

Operation Impacts

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

4.14.5 Mitigation

Because the Proposed Project would result in no impact to recreation, no mitigation measures are required.

4.14.6 Alternative 2

The Alternative 2 route crosses an area of a park in Visalia that is planned for expansion in an area within existing SCE ROW. Although construction and operation of the Alternative 2 route would likely not affect the use of this park, the potential effects to recreation are greater for Alternative 2 than those for the Proposed Project. However, impacts would be less than significant.

4.14.7 Alternative 3

The Alternative 3 route crosses an area of a park in Visalia that is planned for expansion in an area within existing SCE ROW. Although construction and operation of the Alternative 3 route would likely not affect the use of this park, the potential effects to recreation are greater for Alternative 3 than those for the Proposed Project. However, impacts would be less than significant.

4.14.8 References

City of Farmersville. 2002. General Plan, Part I and Part II.

City of Farmersville. 2003. City of Farmersville Highway 198 Corridor Specific Plan.

City of Visalia. 2008. Planning Department and Maps. [online].
http://www.ci.visalia.ca.us/default.asp [cited April 2008].

Figure 4.14
Parks and Open Spaces

Parks/Open Space (TBM, 2008)

Routes

- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)

- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles

N

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Sequoia Riverlands Trust (SRT). 2008. Kaweah Oaks Preserve. [online] http://www.sequoiariverlands.org/index.html [cited April 2008].

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4.15 Transportation and Traffic

This section addresses traffic and transportation issues related to the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.15.1 Environmental Setting

The transportation system in Tulare County consists of roadways, railways, airport service, and bicycle trails. Due to the interrelationship between urban and rural activities in the area, combined with the low average density of residences and commercial/ industrial areas, the automobile is the predominant mode of travel for people in Tulare County (Tulare County, 2007).

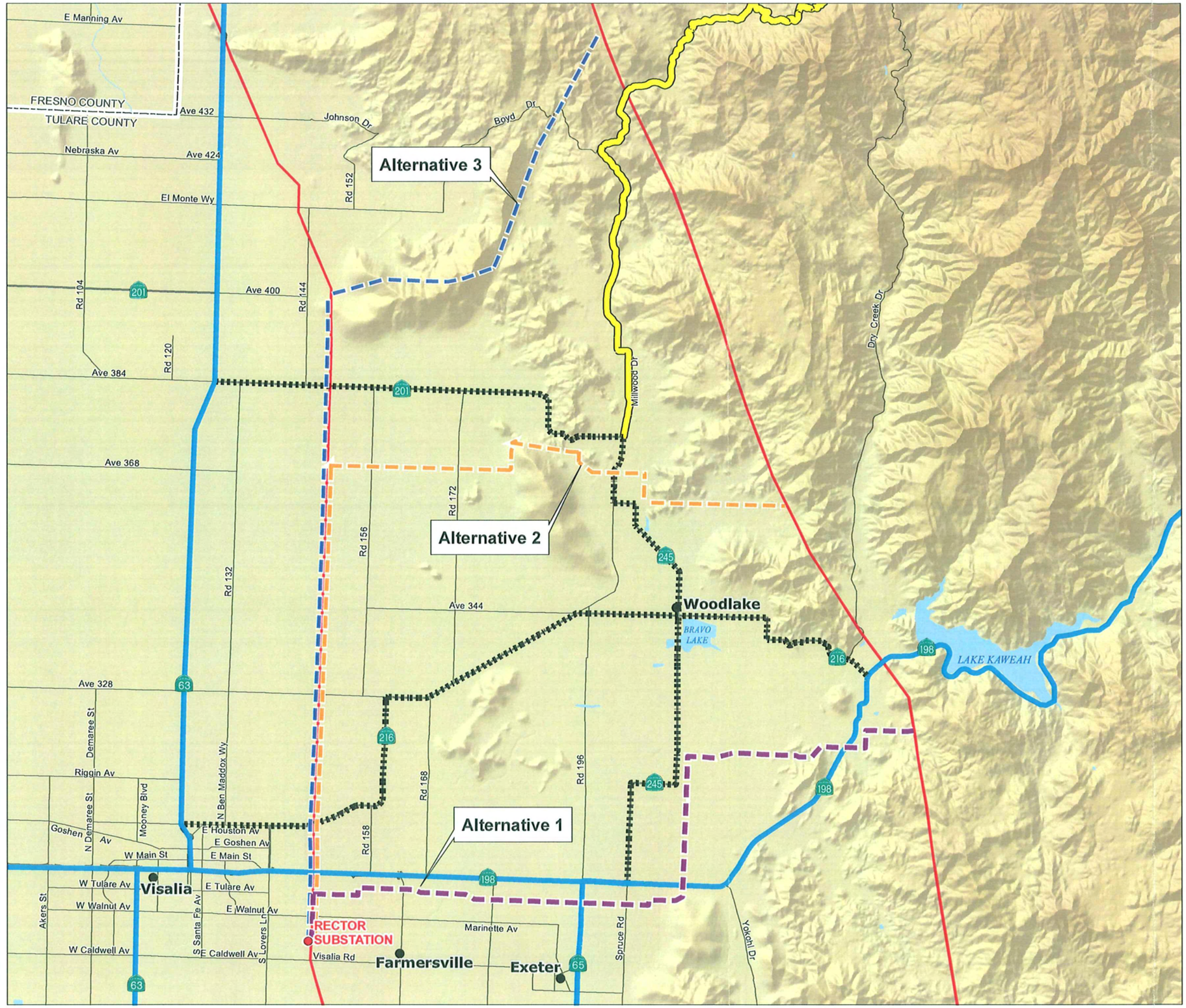
The efficiency of several roadways in the vicinity of the Proposed Project was evaluated in 2006. Roadways in the area were ranked according to guidelines set forth by the Highway Capacity Manual (1997) that assigns a Level of Service (LOS) rating based on factors such as speed, travel time, ability to maneuver, traffic interruptions, and safety. The highest ranked roadways are designated LOS A, representing free-flow of traffic, and the lowest ranked roadways are designated LOS F, representing forced or broken-down flow. The 1995 Tulare County Congestion Management Program prepared by Tulare County Association of Governments, identified that the minimum level of service standard within the county shall be no lower than LOS E for urban areas and LOS D for rural areas (Tulare County, 2007).

There are nine truck routes in Tulare County. Truck routes in California allow a single trailer with a 53-foot maximum length and double trailers with a maximum length of 28.5 feet each trailer. Portions of three State highways in Tulare County are designated as Advisory Routes, where travel is not advised for trucks longer than 65 feet (Caltrans, 2008). The agricultural economy of Tulare County depends upon the safe and efficient movement of goods, and as a result, the county has an extensive network of low to moderate volume farm-to-market roadways in sparsely settled areas to service the agricultural industry. Large trucks are the primary means of transporting such goods (Tulare County, 2007).

Three railroad companies (Burlington Northern, San Joaquin Valley, and Union Pacific Railroads) provide freight service to Tulare County. High speed railroad mainline operations on the Burlington Northern-Santa Fe Railroad occur in the southwest corner of the county and on the Union Pacific Railroad along Highway 99. Lower speeds occur on various branchlines located throughout the county on the San Joaquin Valley Railroad. Freight trains may operate at any time during the day or night (Tulare County, 2005).

Amtrak provides passenger rail service in Tulare County through the Central Valley Atchison, Topeka & Santa Fe tracks. The tracks run from Fresno to Bakersfield, passing through Hanford in Kings County. A connecting bus offers transportation for passengers between Visalia and the Amtrak station in Hanford.

Figure 4.15
Truck Routes



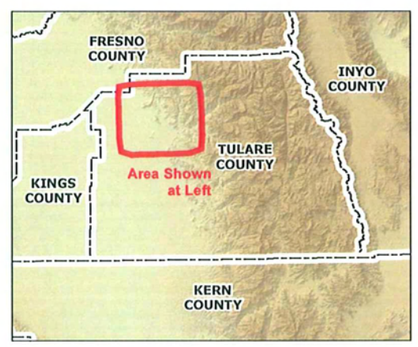
Truck Routes (Caltrans, 2007)
- STAA Truck Route
- California Legal Advisory Route
- California Legal Network

Routes
- Alternative 1 (Proposed Project)
- Alternative 2
- Alternative 3

Existing Electrical (SCE, 2007)
- 220 kV Transmission Line
- Substation

- Transportation Lines (TBM, 2008)
- County Boundaries (TBM, 2008)
- Water (TBM, 2008)
- Cities (ESRI, 2000)

0 1.25 2.5 5 Miles



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Bus services in the area are administered by Tulare County Area Transit, which provides public transit services between large and small communities within the greater Tulare County area. The City of Visalia also provides scheduled bus service, and the Orange Belt, a private coach service, stops in the City of Farmersville (TCAG, 2008; City of Visalia, 2008; City of Farmersville, 2002).

Tulare County has nine active airports, five are publically owned and operated, and four are private (Tulare County, 2007). Both Tulare County and the City of Visalia maintain bicycle trails, and in 2002, the City of Farmersville was planning four bicycle trails (Tulare County, 2007; City of Visalia, 2008; City of Farmersville, 2002).

4.15.2 Regulatory Setting

Caltrans. The California Department of Transportation manages state highways and rail facilities in California. The Department of Transportation 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.

Tulare County. Tulare 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 parking capacity; or
- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

4.15.4 Impact Analysis

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

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 affect the design features or the compatible uses of transportation conveyances in the area. There would be no impacts associated with an increase in hazards.

Would the project result in inadequate parking capacity?

Parking during construction and operation of the Proposed Project would occur at the Material Staging Yards, or at the cleared areas around the structures. 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 of the Proposed Project.

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

Construction and operation of the Proposed Project would not interfere with bus turnouts, bicycle racks, or any other man-made structures that support alternative transportation. There would be no impacts to adopted policies, plans, or programs supporting alternative transportation.

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?

Construction and operation of the Proposed Project would involve the intermittent use of helicopters, but this would not change air traffic patterns in the area. The Proposed Project is not located within 2 miles of an active airport or within an airport planning area. The closest airport to the Proposed Project is the Woodlake Airport, approximately 2.1 miles northwest of the Proposed Project. There would be no impact to air traffic patterns from construction and operation of the Proposed Project.

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 4.15-1, Proposed Project Transportation Span Locations, provides information about the traffic volumes and levels of service for the roadways spanned by the Proposed Project that have been recently evaluated.

Table 4.15-1 Proposed Project Transportation Span Locations

Roadway	Approximate Miles from Rector Substation	Average Annual Daily Traffic Volume	Level of Service
Farmersville Boulevard	3.2	7,950	C
Road 168 (also bicycle route)	3.7	N/A	N/A
Highway 65 (also bicycle route)	7.2	12,600	C
Spruce Road	8.3	1,090	B
Highway 198 (also bicycle route)	9.9	9,500	C
Cottage PO Drive	12.9	660	N/A
Highway 198 (also bicycle route)	16.6	9,500	C
Avenue 324	17.3	690	N/A

Source: Tulare County, 2007; TCAG, 2007

It is estimated that a maximum of approximately 50 craft laborers per day would be working onsite during construction of the Proposed Project. Personnel would generally drive to the 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 Yards to reduce personal vehicle traffic to the greatest extent possible.

Material delivery to the structure sites would vary throughout the construction period. Truck trips during foundation installation would be the greatest. It is estimated that each foundation would require up to 17 truck trips for hauling soil, and depending upon the type of foundation being installed, the backfill/concrete placement could take up to 22 truck trips. In addition, after the foundation is installed, the structure would be delivered to the site in sections, an activity that would take approximately two truck trips. Assuming the use of two crews for foundations and two crews for structure hauling, the average is estimated to be approximately 32 truck trips per day during the 40 days of foundation work and structure hauling.

This level of construction traffic is negligible when added to the existing daily traffic on existing roadways, and would not exceed established level of service standards because it would not increase traffic enough to change the volume to capacity ratios. The slight increase in traffic during construction of the Proposed Project would be temporary and would not be distinguishable from many of the truck trips in the area that are associated with agricultural operations.

The use of guard structures or flaggers to stop traffic may be required during installation of conductor above active roadways. SCE would obtain encroachment permits as required from the local 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 local regulatory agencies, construction of the Proposed Project would not significantly disrupt traffic.

There is a possibility that SCE would be constructing the Proposed Project the same time that Tulare County is widening Farmersville Boulevard. If that is the case, SCE would coordinate with Tulare County and the City of Farmersville to discuss lane closures and material delivery routes in order to minimize the impacts to transportation users in the area.

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 affect the minimum LOS D level of service standard established by Tulare County. Impacts to the Tulare County LOS standard would be less than significant.

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 annual inspection and routine maintenance of the transmission line and access roads. 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 traffic is low when added to the existing daily traffic on roadways in the area, and would not affect the minimum LOS D level of service standard established by Tulare County. There would be no impact to the Tulare County LOS standard.

4.15.5 Mitigation

Because the Proposed Project would result in less than significant impacts to transportation and traffic, no mitigation measures are required.

4.15.6 Alternative 2

Alternative 2 is longer in length than the Proposed Project, would require structures to be installed, require more material delivery and a longer construction period. As a result, Alternative 2 has a greater impact to traffic and transportation than the Proposed Project. However, impacts would be less than significant.

4.15.7 Alternative 3

Alternative 3 is longer in length than the Proposed Project, would require more structures to be installed, require more material delivery and a longer construction period. As a result, Alternative 3 has a greater impact to traffic and transportation than the Proposed Project. However, impacts would be less than significant.

4.15.8 References

Amtrak. 2006. [online] http://stations.amtrak.com/amtrak/DetailedAreaMap.jsp?txt StationID=GSN. [cited July 2006].

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TCAG. 2008. Tulare County Transit Guide. [online] http://www.tularecog.org/transitguide.htm [cited May 2008].

4.16 Utilities and Service Systems

This section describes the utilities and service systems in the vicinity of the Proposed Project. The potential impacts, proposed mitigation measures, and alternatives are also discussed.

4.16.1 Environmental Setting

Utility providers in Tulare County include SCE and Pacific Gas and Electric (electricity), The Gas Company (natural gas), and Verizon, SBC/AT&T, Ducor, and Sprint (telecommunications) (Tulare County, 2007).

Tulare County's main source of water for consumption, irrigation, and fire suppression is groundwater. Within the unincorporated areas of Tulare County, a number of private water companies provide water service, and many of the homes outside of the unincorporated communities have on-site wells for drinking and irrigation purposes (Tulare County, 2007).

The City of Visalia's water provider is California Water Service, a private company that owns and operates the water production distribution system throughout Visalia, and provides water for domestic use and fire suppression (City of Visalia, 1996). The City of Farmersville utilizes groundwater for drinking (City of Farmersville, 2003).

Sanitary sewer service in the unincorporated areas of Tulare County is either managed by special districts, or by individual or community septic systems (Tulare County, 2007). The cities of Visalia and Farmersville provide sanitary sewer service including collection and treatment (City of Visalia, 1996; City of Farmersville, 2003).

The level of storm water collection infrastructure varies throughout the unincorporated areas of Tulare County, discharging to various surface waters including streams, rivers, ditches, and ponding basins (Tulare County, 2007). The City of Visalia directs storm water to retention basins that empty into nearby rivers and creeks (City of Visalia, 1996). The City of Farmersville collects storm water in some areas of the city and ultimately directs it to nearby creeks and canals (City of Farmersville, 2003).

In 2007, there were three operating landfills in the county. These landfills, and their remaining permitted capacity are Visalia (16 million cubic yards), Woodville (7 million cubic yards), and Teapot Dome (1 million cubic yards). (Tulare County, 2007; State of California, 2008).

4.16.2 Regulatory Setting

California Health and Safety Code Section 25150. This statute 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

Construction and operation of the Proposed Project would not produce 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 Regional Water Quality Control Board. Construction and operation of the Proposed Project would have no impact to the treatment requirements of wastewater treatment plants in 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?

The use of water for dust suppression during construction and operation is minimal and short-term, and would not be in volumes or flow rates that would affect water treatment plant capacities. Construction and operation of the Proposed Project would have no impact to the expansion of water or wastewater treatment facilities in 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 and operation of the Proposed Project would not significantly affect the infiltration rates of storm water in the area, or change the natural direction of storm water flow. Construction and operation of the Proposed Project would have no impact to storm water drainage facilities in the area.

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 operation is minimal and short-term, and would not be in volumes or flow rates that would affect water supplies in Tulare County. 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 to a facility that would exceed its wastewater treatment capacity. Construction and operation of the Proposed Project would have no impact to wastewater treatment providers in the area.

Construction Impacts

Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Construction of the Proposed Project would require the demolition of approximately 26 single circuit 220 kV transmission towers and one 2,800 square foot residence, the construction approximately of 122 new 220 kV double circuit structures, construction of electrical support structures and a MEER at Rector Substation, and the removal of wave traps and line tuners at Rector, Big Creek 3, Springville, and Vestal Substations. Much of the demolition material would be salvaged, but there would be additional waste from construction activities that would be sent to one or more landfills in the area. The landfills in Tulare County have the 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 construction of the Proposed Project would comply with federal, state, and local statutes related to solid waste. Construction of the Proposed Project is expected to include the use of treated wood poles for guard structures during wire stringing operations (and possibly telecommunications support during the replacement of structures in existing SCE ROW). After

wire stringing activities, these wood poles would be returned to the Material Staging Yard for the project, 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.

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 consist of annual inspection and routine maintenance of the transmission lines and access roads. These activities would not generate waste in an amount that would affect the permitted capacity of any landfill. Operation of the Proposed Project would have no impact to 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 annual inspection and routine maintenance of the transmission lines and access roads. 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 Mitigation

Because the Proposed Project would result in less than significant impacts to utilities and service systems, no mitigation measures are required.

4.16.6 Alternative 2

The Alternative 2 route for the double circuit transmission line would require the demolition of eight additional miles of single circuit transmission line as compared to the Proposed Project. This would result in more waste being generated from construction activities. Other impacts to utilities and service systems for construction and operation of the Alternative 2 route would be similar to those of the Proposed Project. Impacts would be less than significant.

4.16.7 Alternative 3

The Alternative 3 route for the double circuit transmission line would require the demolition of 13 additional miles of single circuit transmission line as compared to the Proposed Project, resulting in more waste being generated from construction activities. Other impacts to utilities and service systems for construction and operation of the Alternative 3 route would be similar to those of the Proposed Project. Impacts would be less than significant.

4.16.8 References

City of Farmersville. 2003. City of Farmersville Highway 198 Corridor Specific Plan. Quad Knopf. March 2003.

City of Visalia. 1996. Land Use Element to the City of Visalia General Plan September 1991, Revised June 1996. [online] http://www.ci.visalia.ca.us/depts/community_ development/planning/publications/default.asp. [cited April 2008].

State of California. 2008. California Integrated Waste Management Board Solid Waste Information System. [online] http://www.ciwmb.ca.gov/SWIS/default.htm. [cited April 2008].

Tulare County. 2007. Tulare County General Plan Update Draft Environmental Impact Report. [online] http://generalplan.co.tulare.ca.us/. [cited April 2008].

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 Project Objectives, developed in Section 1.3, are as follows:

- Provide safe and reliable electrical service consistent with NERC/WECC and CAISO reliability criteria;
- Provide safe and reliable electrical service consistent with SCE's electrical system planning guidelines;
- Increase transmission capacity between the Big Creek Hydroelectric Project and Rector Substation to mitigate overload conditions;
- Reduce the need to interrupt customer electrical service under transmission line outage conditions;
- Minimize the need to reduce Big Creek Hydroelectric Project generation under transmission line outage conditions;
- Minimize electrical service interruptions to customers by scheduling the construction of new facilities in an orderly and rational manner;
- Meet project need while minimizing environmental impact; and
- Meet project need and construction schedule in a cost effective manner.

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 CPCN 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, Alternative 2, and Alternative 3 by CEQA resource category.

As described in Chapter 4.0, Environmental Impact Assessment, the Proposed Project has no significant impacts, or impacts that cannot be mitigated to less than significant levels. Consequently, SCE has selected the Proposed Project as the preferred alternative.

Table 5.1 Comparison of Alternatives

Section	Proposed Project (PP)	Alternative 2	Alternative 3
Aesthetics	Less than Significant	More than the PP	More than the PP
Agriculture Resources	Less than Significant	Similar to the PP	Similar to the PP
Air Quality	Less than Significant	More than the PP	More than the PP
Biological Resources	Less than Significant (with mitigation)	**More and greater than the PP**	**More and greater than the PP**
Cultural Resources	Less than Significant (with mitigation)	**More and greater than the PP**	**More and greater than the PP**
Geology and Soils	Less than Significant	More than the PP	**More and greater than the PP**
Hazards and Hazardous Materials	Less than Significant	More than the PP	More than the PP
Hydrology and Water Quality	Less than Significant	More than the PP	**More and greater than the PP**
Land Use and Planning	No Impact	Similar to the PP	Similar to the PP
Mineral Resources	No Impact	Similar to the PP	Similar to the PP
Noise	Less than Significant	More than the PP	More than the PP
Population and Housing	No Impact	Similar to the PP	Similar to the PP
Public Services	Less than Significant	Similar to the PP	Similar to the PP
Recreation	No Impact	More than the PP	More than the PP
Transportation and Traffic	Less than Significant	More than the PP	More than the PP
Utilities and Service Systems	Less than Significant	More than the PP	More than the PP

Section 6.0
Other CEQA Considerations

6.0 OTHER CEQA CONSIDERATIONS

This section discusses broader questions posed by CEQA. These include cumulative impacts, growth inducing impacts, indirect effects, significant effects that cannot be mitigated to less than significant levels, and mandatory findings of significance.

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)).

Cumulative impact analysis for the Proposed Project included a review of developments within Tulare County, the City of Visalia, and the City of Farmersville. The list that appears below is a list of developments occurring within one mile of the Proposed Project, or would be representative of projects that may be proposed in the area. This list also includes other projects identified by SCE. These developments are shown on Figure 6.1, Projects Proposed in the Vicinity of the Proposed Project, and are listed Table 6.1, Projects Proposed in Vicinity of the Proposed Project.

Pacific Gas and Electric Company (PG&E) began working with the California Independent System Operator to plan its Central California Clean Energy Transmission Project (C3ETP) in January 2008. One of the multiple C3ETP alternatives is a 500 kV transmission line that would parallel SCE's existing Big Creek 3-Springville and Big Creek 4-Springville 220 kV

transmission lines to the east of the Proposed Project. Considering there are multiple alternatives to the type of project and location of the C3ETP, SCE judged that the PG&E transmission line parallel to SCE existing transmission lines alternative did not meet the reasonably foreseeable criterion of CEQA, and considered it speculative at this time to include it in the cumulative impact analysis for the Proposed Project.

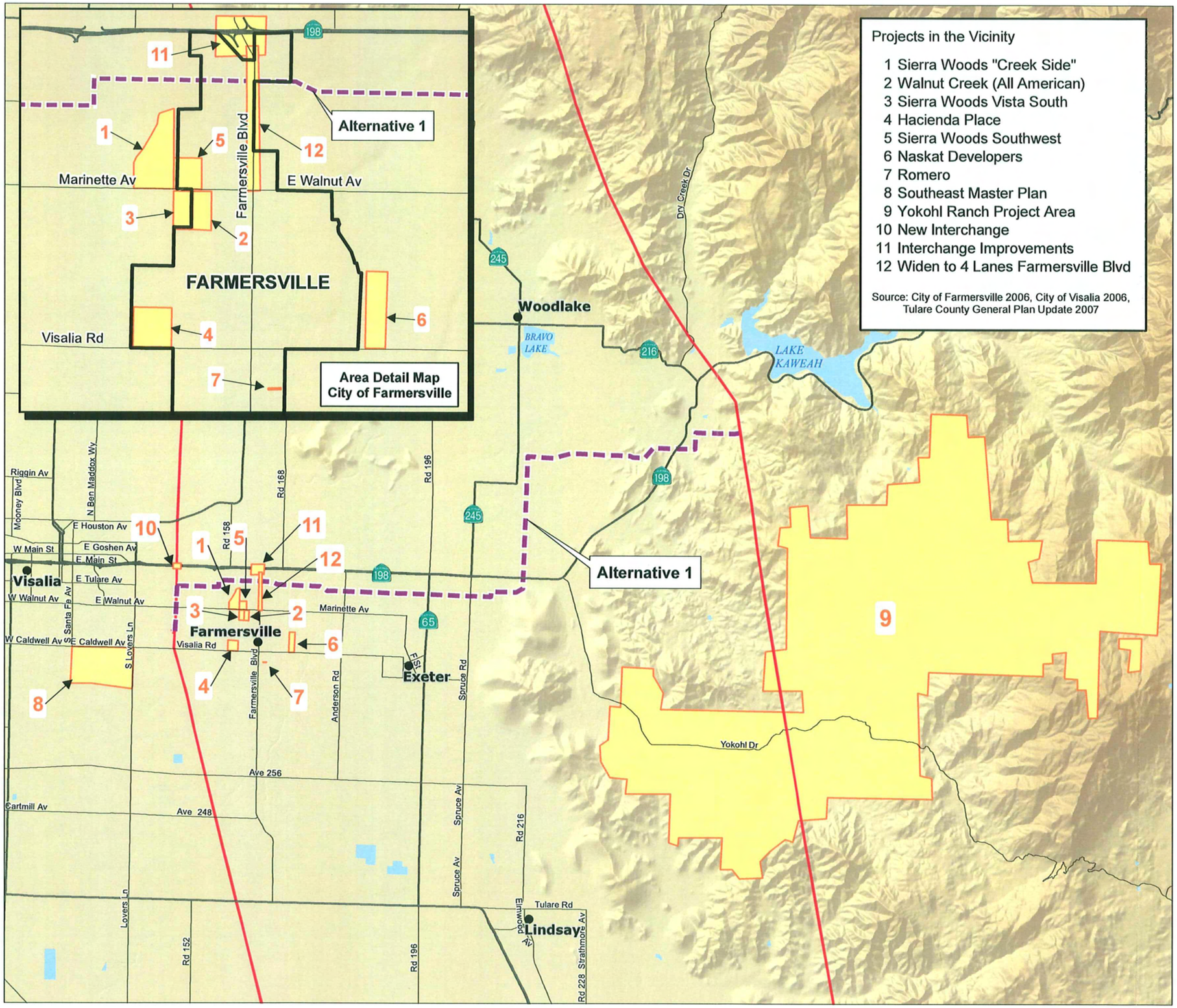
Table 6.1 Projects Proposed in Vicinity of the Proposed Project

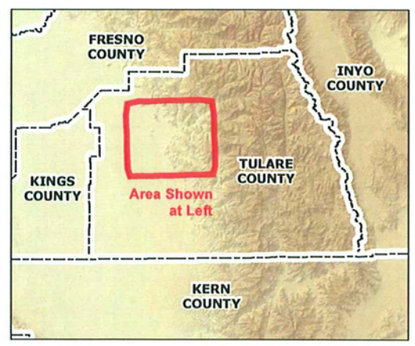
Number	Project	Location	Type	Status
1	Sierra Woods, Creekside	City of Farmersville	Housing	In planning
2	Walnut Creek, All American	City of Farmersville	Housing	Approved
3	Sierra Woods Vista South	City of Farmersville	Housing	In planning
4	Hacienda Place	City of Farmersville	Housing/Commercial	Approved
5	Sierra Woods Southwest	City of Farmersville	Housing	Approved
6	Naskat Developers	City of Farmersville	Housing	In planning
7	Romero	City of Farmersville	Housing	Approved
8	Southeast Area Specific Plan	City of Visalia	Mixed Use	In planning
9	Yokohl Ranch Development	Tulare County	Mixed Use	In planning
10	New interchange, Road 148 and Highway 198	Tulare County	Roadway improvements	In planning
11	New interchange, Farmersville Boulevard and Highway 198	Tulare County	Roadway improvements	In planning
12	Widen Farmersville Boulevard to four lanes between Highway 198 and Walnut Avenue/Avenue 288	Tulare County/City of Farmersville	Roadway improvements	2010

The following sections discuss the cumulative impacts of each environmental resource category.

Aesthetics. The effects to aesthetics resulting from construction and operation of the Proposed Project are believed to represent an incremental change in the visual character in the area, and would have a less than significant effect on aesthetics. These incremental changes, when considered in conjunction with the aesthetic changes that would occur with the housing developments and roadway improvements are not thought to significantly affect the visual character or quality of the area. Cumulative impacts to aesthetics would be less than significant.

Figure 6.1
Projects in the Vicinity of the Proposed Project





0 1.25 2.5 5 Miles

Project Areas

Alternative 1 (Proposed Project)

Existing Electrical (SCE, 2007)

220 kV Transmission Line

Transportation Lines (TBM, 2008)

County Boundaries (TBM, 2008)

Water (TBM, 2008)

Cities (ESRI, 2000)

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.

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Agriculture. Construction and operation of the Proposed Project would have a less than significant effect to agriculture. With the exception of the Yokohl Ranch development, all other projects would occur on land not presently used for agriculture or grazing. 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. Although construction and operation of the other projects listed in the cumulative impact analysis may have significant impacts to air quality, the impacts are not considered to be cumulatively considerable for two reasons: (1) The SJAPCD has considered cumulative construction impacts when developing its Guide for Assessing and Mitigating Air Quality Impacts (2002). (The Proposed Project falls in a Small Project Analysis Level, and is believed to emit negligible amounts of air pollutants.); and (2) the impacts to air quality in the area would be far greater without construction and operation of the Proposed Project (without a reliable source of electricity, agricultural operators may begin to use small mobile generators to provide power their operations, which would likely use petroleum-based fuels and would emit ozone precursors; in contrast, operation of the Proposed Project would maximize the use of hydropower, a form of electricity generation that has few ozone precursors associated with it). As a result, 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 and unavoidable impacts to biological resources. With the exception of the Yokohl Ranch development, all other development in the cumulative impact analysis occurs on previously disturbed land. The Yokohl Ranch development may have impacts to biological resources, but they would also likely be mitigated, and would not be cumulatively considerable when combined with the effects to biological resources from construction and operation of the Proposed Project.

Cultural Resources. Based on information collected to date, construction and operation of the Proposed Project is not expected to have significant and unavoidable impacts to cultural resources, with the exception of the removal of the towers associated with the Big Creek Hydroelectric System Historic District. And with the exception of the Yokohl Ranch development, all other development in the cumulative impact analysis occurs on previously disturbed land. The Yokohl Ranch development may have impacts to cultural resources, but they would be mitigated by Tulare County, and would not be cumulatively considerable when combined with the effects to cultural resources from construction and operation of the Proposed Project.

Geology and Soils. Construction and operation of the Proposed Project would not have significant impacts to geology and soils. During construction of the other projects evaluated for the cumulative impact analysis, the loss of topsoil would be protected by SWPPPs and grading permits. 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 developments in the cumulative impact analysis are cumulatively contributing 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 likely not re-route drainages, and the water quality in drainages in the area would be protected by 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. Most of the projects listed in the cumulative impact analysis would be permitted through local agencies, and any cumulative impacts to land use and planning would be evaluated and mitigated by the local agencies. 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 noise generated by the Proposed Project would occur intermittently over 18.5 miles, and would not be considered cumulatively considerable. Operation of the other projects in the cumulative impact analysis may result in an increase in an ambient increase in noise due to the increased traffic from the developments, but the noise due to the operation of the transmission line would not be considered cumulatively considerable. Cumulative impacts to noise would be less than significant.

Population and Housing. Construction and operation of the Proposed Project would not result in significant impacts to population and housing. Any significant impacts to population and housing due to the construction and operation of the other projects in the cumulative impact analysis would be mitigated by the Lead Agency during the project's CEQA process. The Proposed Project would not have a cumulatively considerable effect to population and housing.

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 mitigated by the Lead Agency during the project's CEQA process. The Proposed Project would not have a cumulatively considerable effect to public services.

Recreation. Construction and operation of the Proposed Project would not result in significant impacts to recreation. Any significant impacts to recreation due to the construction and operation of the other projects in the cumulative impact analysis would be mitigated by the Lead Agency during the project's CEQA process. The Proposed Project would not have a cumulatively considerable effect to recreation.

Transportation. Construction and operation of the Proposed Project would not result in significant impacts to transportation. The other developments that are part of the cumulative impact analysis may also generate traffic during construction (or road/lane closures), but the traffic generated by the Proposed Project would occur for a short period of time over 18.5 miles,

and would not be considered cumulatively considerable. Operation of the other projects in the cumulative impact analysis may result in an increase in traffic from the developments, but the traffic associated with the operation of the transmission line would not be considered cumulatively considerable. Cumulative impacts to transportation 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. Any significant impacts to utilities and service systems due to the construction and operation of the other projects in the cumulative impact analysis would be mitigated by the Lead Agency during the project's CEQA process. The Proposed Project would not have a cumulatively considerable effect to utilities and service systems.

As discussed above, construction and operation of the Proposed Project would not have cumulative impacts to environmental resources when considering the projects and types of projects that are likely to occur before, during, and after construction of the Proposed Project. Cumulative impacts of the Proposed Project would be less than significant.

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

The Proposed Project has been developed based upon a demonstrated need for electrical system reliability in the cities of Tulare, Visalia, Hanford, Farmersville, Exeter, and Woodlake, as well as the surrounding areas of Tulare and Kings Counties in SCE's service territory. The demand for electricity is a result of, not a precursor to, development in the region. Although the Proposed Project would increase the reliability with which electricity is made available, the objective of the Proposed Project is not to provide a new source of electricity.

The Proposed Project does not involve the creation of any 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 is designed to respond to existing growth and demand trends.

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, and/or if growth resulted from the additional electrical power that would be transmitted by the Proposed Project.

As documented in the Project Description (Chapter 3.0), 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 transmission lines and access roads constructed for the Proposed Project would be annually inspected and maintained, and would not require dedicated, full-time personnel.

6.3 Indirect Effects

The CEQA Guidelines (Section 15358(a)(2)) require discussion of potential indirect effects of a project. Indirect effects, also referred to as secondary impacts, are impacts caused by a project that occur later in time or are farther removed in distance, but are still reasonably foreseeable.

The previous section concludes that the Proposed Project would not have growth-inducing impacts. The Proposed Project is not anticipated to induce growth; rather, it would allow SCE to provide reliable electrical service, as required by the CPUC, to current and future consumers in the cities of Tulare, Visalia, Hanford, Farmersville, Exeter, and Woodlake, as well as the surrounding areas of Tulare and Kings Counties in SCE's service territory. Growth and development in these areas is managed at the local and county level and is anticipated to occur consistent with general and specific plans prepared and approved by each jurisdiction with appropriate CEQA review. Thus, to ensure adequate electrical system reliability to serve planned development, the Proposed Project would be considered an essential utility.

The Proposed Project would not induce this growth, but follow it. No long-term indirect changes or growth can be attributed to the Proposed Project. Therefore, approval of the Proposed Project would not have indirect effects.

6.4 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. It is not known at this time whether construction and operation of the Proposed Project would have unavoidable significant environmental effects or significant environmental effects that can be mitigated; however, there is a very strong potential for the Proposed Project to affect biological and cultural resources. These potential significant environmental effects are summarized in Table 6.4, Potential Significant Environmental Effects. All of the potential significant environmental effects associated with the Proposed Project are thought to be able to be mitigated to a level below significance.

Table 6.4 Potential Significant Environmental Effects

Resource	Description	Direct/Indirect	Short term/Long term
Biological Resources: Valley elderberry longhorn beetle	During construction and operation of the Proposed Project, there may be a potential to disturb elderberry plants that are habitat for the Valley elderberry longhorn beetle	Potential direct; but construction of the Proposed Project would avoid elderberry plants where feasible	If the impact occurs, it would be a short term impact; the elderberry plants and beetles could return to the area.
Cultural Resources: Big Creek Hydroelectric System Historic District	During construction of the Proposed Project, components of the Big Creek Hydroelectric System Historic District would be affected.	Direct; approximately 26 towers associated with the BCHSHD would be removed, and there would be an adverse change at Rector Substation. These components would be recorded to HABS/HAER/HALS Level II or Level III Standards.	It would be a long term impact, because HABS/HAER/HALS recordation does not fully mitigate the loss of a property.

6.5 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, and 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 the 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)?

The less than significant impacts of construction and operation of the Proposed Project are individually limited. 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 thought to have 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; on the contrary, access to a reliable source of electricity would directly enhance human beings, by the predictability of electrical service, and indirectly, by providing the region with reliable electrical service to allow for decisionmaking at the local level as to what types of development could occur in the region.