Title: Tehachapi Renewable Transmission Project (TRTP)

Subject: Final Environmental Impact Statement (EIS)

Lead Agency: U.S. Department of Agriculture, Forest Service

Abstract: Southern California Edison (SCE) proposes to construct, use, and maintain new and upgraded transmission infrastructure along approximately 173 miles of new and existing rights-of-way (ROW) from the Tehachapi Wind Resource Area in southern Kern County south through Los Angeles County and the Angeles National Forest (ANF) and east to the existing Mira Loma Substation in San Bernardino County, California. The TRTP consists of eight segments enumerated as Segments 4 through 11. The major components of SCE’s proposed Project consist of the following:

- A new single-circuit 500-kV transmission line (T/L) between the Windhub Substation and the proposed Whirlwind Substation (Segment 10). Two new single-circuit 220-kV T/Ls along new ROW from the Cottonwind Substation to the proposed new Whirlwind Substation (Segment 4 – 220 kV). A new single-circuit 500-kV T/L from the proposed new Whirlwind Substation to the existing Antelope Substation (Segment 4 – 500 kV).
- Rebuilding approximately:
  - 18 miles of the existing Antelope-Vincent 220-kV T/L and the existing Antelope-Mesa 220-kV T/L to 500-kV standards between the existing Antelope and Vincent Substations (Segment 5)
  - 19 miles of existing 220-kV T/L to 500-kV standards between the existing Vincent and Gould Substations. Also adding a new 220-kV circuit on the vacant side of the existing double-circuit structures of the Eagle Rock-Mesa 220-kV T/L (Segment 11).
  - 32 miles of existing 220-kV T/L to 500-kV standards from the existing Vincent Substation to the southern boundary of the ANF, including approximately 27 miles of the existing Antelope-Mesa 220-kV T/L and approximately 5 miles of the existing Vincent-Rio Hondo 220-kV No. 2 T/L (Segment 6).
  - 16 miles of existing 220-kV T/L to 500-kV standards from the southern boundary of the ANF to the existing Mesa Substation. (Segment 7).
  - 33 miles of existing Mesa-Chino 220-kV T/L to 500-kV standards east of the existing Mesa Substation to the existing Mira Loma Substation. Also rebuilding approximately 7 miles of the existing Chino-Mira Loma No. 1 line from single-circuit to double-circuit 220-kV structures (Segment 8).
- Building the new Whirlwind Substation (Segment 9), upgrading the existing Antelope, Vincent, Mesa, Gould, and Mira Loma Substations to accommodate new T/L construction and system compensation elements (Segment 9), and installation of associated telecommunications infrastructure.

This Final EIS evaluates the impacts of the proposed Project and a wide range of alternatives, including the No Action Alternative and alternate construction methods.

The primary environmental resource issues analyzed in this document were potential effects on (1) air quality, (2) biological resources, (3) aesthetic resources, (4) cultural resources, (5) erosion, and (6) recreation.

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Final Environmental Impact Statement
Southern California Edison's Application for the

Tehachapi Renewable Transmission Project

Tehachapi Wind Turbines

Segment 4 in NW Antelope Valley

Segment 6 in Angeles National Forest

Gould Substation

Segment 8 in Rowland Heights

Chino Hills State Park

Segment 8 in Chino

Mira Loma Substation

Lead Agency:
USDA Forest Service

Prepared by: Aspen Environmental Group

September 2010
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1. Detailed Proposed Project Location Strip Maps (Figures 2.2-1a to 2.2-1y)
2. Vegetation Maps (Figures 3.4-4a to 3.4-4z)
3. Sensitive Species Locations and Stream Crossings (Figures 3.4-5a to 3.4-5z2)
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6. Project Segment Detail Maps
Executive Summary

ES.1 Introduction

The transmission upgrades proposed by Southern California Edison (SCE) as part of the Tehachapi Renewable Transmission Project (TRTP or “proposed Project”) include transmission lines that would traverse approximately 42 miles of National Forest System (NFS) lands. Therefore, SCE filed an application for a Special Use authorization with the USDA Forest Service on June 29, 2007, seeking permission for the construction, operation, and maintenance of the proposed Project on NFS lands in the Angeles National Forest (ANF). Because the proposed Project also crosses lands controlled by the U.S. Army Corps of Engineers (USACE), the USACE has elected to participate as a Cooperating Agency for the environmental review of the Project. On June 29, 2007, SCE also submitted Application No. A.07-06-031 to the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) to allow the construction, operation, and maintenance of the proposed Project on non-federal lands. With the CPCN application, SCE also submitted its Proponent’s Environmental Assessment (PEA) for the proposed Project to the CPUC. The CPUC approved those components of the Project located on non-federal land in December 2009 (Decision 09-12-044; December 24, 2009).

The TRTP would involve new and upgraded transmission infrastructure along approximately 173 miles of new and existing rights-of-way (ROW) in southern Kern County, portions of Los Angeles County, including the ANF, and the southwestern portion of San Bernardino County, California. SCE’s stated objectives for the proposed Project are to provide the electrical facilities necessary to integrate levels of new wind generation in excess of 700 MW and up to approximately 4,500 MW in the Tehachapi Wind Resource Area (TWRA) (SCE, 2007). Because the proposed TRTP would serve future wind development projects in the TWRA, the potential effects of these future wind projects were addressed in Chapter 6 (Development of the Tehachapi Wind Resource Area) of the Draft Environmental Impact Report/Statement (EIR/EIS) (February 2009) in order to better understand their contribution to the cumulative impacts of TRTP. These projects are not considered connected actions to the TRTP and are outside the scope of the proposed action and alternatives for this EIS. This EIS is not intended to result in any regulatory approvals or provide compliance with the National Environmental Policy Act (NEPA) for wind generation projects. For the purposes of NEPA, the Project’s three primary objectives are to:

- Provide the electrical facilities necessary to reliably interconnect and integrate in excess of 700 MW and up to approximately 4,500 MW of new wind generation in the TWRA currently being planned or expected in the future, thereby enabling SCE and other California utilities to comply with the California Renewables Portfolio Standard (RPS) goals in an expedited manner (i.e., 20 percent renewable energy by year 2010 per California Senate Bill 107).
- Further address the reliability needs of the California Independent System Operator (CAISO) controlled grid due to projected load growth in the Antelope Valley.
- Address the South of Lugo transmission constraints, an ongoing source of concern for the Los Angeles Basin.

These objectives are described in detail in Section 1.2 of this Final EIS.

Both NEPA and the California Environmental Quality Act (CEQA) encourage agencies to prepare a single joint environmental analysis document, because the environmental review processes under each law are similar and somewhat parallel. For the purposes of this proposed Project, the USDA Forest Service (NEPA Lead Agency) and the CPUC (CEQA Lead Agency) entered into a Memorandum of
Understanding to prepare a joint EIS and EIR, thereby serving the permitting and decision-making requirements of both agencies. As a result, the Forest Service and the CPUC collaborated on the preparation of a Draft EIR/EIS, which was released for public review in February 2009.

The Station Fire, the largest in the history of Los Angeles County, started in the ANF on August 26, 2009. This fire burned approximately 160,000 acres, or 250 square miles, including most of the proposed TRTP transmission alignments through the ANF (i.e., Segments 6 and 11). As a result, the Forest Service decided to prepare a Supplemental Draft EIS to re-evaluate the Project’s effects in light of the changed conditions caused by the Station Fire. Given that these changed conditions did not necessitate the preparation of a supplemental EIR analysis under CEQA, the process to prepare a joint Final EIR/EIS document was discontinued and the two agencies proceeded on independent tracks to complete the separate documentation required by NEPA and CEQA. The CPUC published a Final EIR for the Project in October 2009 and the Forest Service proceeded with the preparation of the Supplemental Draft EIS, which was completed in April 2010. The CPUC approved those components of the proposed Project located on non-federal lands in December 2009 (Decision 09-12-044).

In addition to changed conditions caused by the Station Fire, the Supplemental Draft EIS prepared by the Forest Service analyzed the impacts associated with certain changes in SCE’s proposed Project that affect NFS lands. SCE informed the Forest Service of these Project changes after publication of the Draft EIR/EIS. The Supplemental Draft EIS was released for public review on April 30, 2010, and the review period ended on June 14, 2010. Comments received on the Supplemental Draft EIS and responses to those comments are included in this Final EIS (see Appendix E).

This EIS discloses the environmental impacts expected to result from the construction and operation of SCE’s proposed Project and recommends mitigation measures, which if adopted, could avoid or minimize adverse environmental effects. This EIS also evaluates alternatives (including the No Project/Action Alternative) to the proposed Project that address significant environmental issues associated with the Project.

The primary components of the proposed Project include:

- Construction of new 500-kV single-circuit transmission lines;
- Construction of new single-circuit 220-kV transmission lines;
- Rebuilding of existing 220-kV transmission lines to 500-kV standards;
- Rebuilding of existing single-circuit transmission lines to double-circuit transmission lines;
- Relocation of several existing 66-kV subtransmission lines;
- Construction of a new 500-kV substation; and
- Upgrading of five existing substations.

Approximately 42 miles of the proposed Project would be located on NFS lands in the ANF. In addition, approximately 6.4 miles of the proposed Project would be located on land controlled by the USACE in the vicinity of Santa Fe Dam and Whittier Narrows in Los Angeles County (Segments 7 and 8 of the proposed Project). In addition, one helicopter staging area (SCE #9) to be utilized during construction would be located on land controlled by the USACE. A summary of the components of the proposed Project and alternatives is presented in Table ES-1.
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<td>Route A: 156.8 Route B: 160.4 Route C: 159.0 Route C Mod: 158.2 Route D: 160.5</td>
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<td>Total number of new transmission structures (not including 66-kV sub-T/Ls)</td>
<td>845</td>
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<td>Route A: 754 Route B: 773 Route C: 794 Route C Mod: 783 Route D: 783</td>
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<td>Total land disturbance (acres, ±15%) (Construction / Permanent)</td>
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<td>~1,685 / ~365*</td>
<td>Route A: ~1,723 / ~382 Route B: ~1,751 / ~371 Route C: ~1,802 / ~380 Route C Mod: ~1,780 / ~401 Route D: ~1,780 / ~380</td>
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<td>~1,554 / ~296</td>
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1 There are a total of 69 structures on NFS lands in Segment 11; where 60 structures are new and 9 are existing double-circuit structures of the Eagle Rock-Mesa 220-kV T/L where new 220-kV conductor would be strung on the vacant side of these structures.
### Table ES-1. Summary Comparison of Components of the Proposed Project and Alternatives

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly constructed roads on NFS lands (±15%)</td>
<td>~1.41 miles</td>
<td>~1.41 miles</td>
<td>~1.41 miles</td>
<td>~1.41 miles</td>
<td>~0.06 miles</td>
</tr>
<tr>
<td>Segment 6: Section of New Replacement Rio Hondo – Vincent No. 2 500-kV T/L (initially energized at 220 kV) and Section of New Mira Loma – Vincent 500-kV T/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segment Length (miles)</td>
<td>26.9</td>
<td>26.9</td>
<td>26.9</td>
<td>26.9</td>
<td>26.9</td>
</tr>
<tr>
<td>New transmission structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. on NFS lands</td>
<td>105</td>
<td>105</td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>No. constructed by helicopter</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>96</td>
<td>17</td>
</tr>
<tr>
<td>Helicopter staging areas</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>No. on USACE controlled lands</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Total new/improved/maintained roads on NFS lands (±15%)</td>
<td>~65.7 miles</td>
<td>~65.7 miles</td>
<td>~65.7 miles</td>
<td>~31.0 miles</td>
<td>~65.7 miles</td>
</tr>
<tr>
<td>On NFS lands (±15%)</td>
<td>~3.61 miles</td>
<td>~3.61 miles</td>
<td>~3.61 miles</td>
<td>~0.19 miles</td>
<td>~3.61 miles</td>
</tr>
<tr>
<td>Route A: 23.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route B: 26.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route C: 26.3 (includes re-routing of existing 220/500kV T/Ls)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route C Mod: 25.5 miles (includes re-routing of existing 220/500kV T/Ls)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route D: 26.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Segment 8A/8C</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Segment 8B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance on USACE controlled lands (miles)</td>
<td>33.0</td>
<td>33.0</td>
<td>33.0</td>
<td>33.0</td>
<td>33.0</td>
</tr>
<tr>
<td>New transmission/subtransmission structures</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Route A: 135 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route B: 154 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route C: 175 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route C Mod: 164 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route D: 164 / 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route A: 211 / 55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route B: 226 / 55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Route C: 226 / 45</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Route D: 226 / 45</td>
<td></td>
<td></td>
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</tbody>
</table>
Table ES-1. Summary Comparison of Components of the Proposed Project and Alternatives

<table>
<thead>
<tr>
<th>Alternative 2</th>
<th>Alternative 3</th>
<th>Alternative 4</th>
<th>Alternative 5</th>
<th>Alternative 6</th>
<th>Alternative 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SCE's Proposed Project)</td>
<td>(West Lancaster)</td>
<td>(Chino Hills Routes)</td>
<td>(Partial Underground)</td>
<td>(Max. Helicopter in ANF)</td>
<td>(66-kV Subtransmission)</td>
</tr>
<tr>
<td>No. of transmission structures on USACE controlled lands</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Components within Chino Hills State Park</td>
<td>None</td>
<td>None</td>
<td>Route A: 2.3-mile T/L; Switching station</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Route B: 4.9-mile T/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Route C: 3.1-mile T/L; Remove 25 structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Route C Mod: 3.0-mile T/L; Remove 21 structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Route D: 1.4-mile T/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segment 9: Substation Facilities</td>
<td>96.8 acres</td>
<td>96.8 acres</td>
<td>96.8 acres</td>
<td>96.8 acres</td>
<td>96.8 acres</td>
</tr>
<tr>
<td>Antelope &amp; Vincent Substations</td>
<td>Upgrade (220-kV)</td>
<td>Upgrade (220-kV)</td>
<td>Upgrade (220-kV)</td>
<td>Upgrade (220-kV)</td>
<td>Upgrade (220-kV)</td>
</tr>
<tr>
<td>Mesa &amp; Gould Substations</td>
<td>Upgrade (500-kV)</td>
<td>Upgrade (500-kV)</td>
<td>Upgrade (500-kV)</td>
<td>Upgrade (500-kV)</td>
<td>Upgrade (500-kV)</td>
</tr>
<tr>
<td>Mira Loma Substation</td>
<td>No upgrades</td>
<td>No upgrades</td>
<td>No upgrades</td>
<td>No upgrades</td>
<td>No upgrades</td>
</tr>
</tbody>
</table>

Information provided here is based on SCE's preliminary design for the TRTP and is subject to change during final engineering.*

Land disturbance under Alternative 3 would decrease by a factor of one structure within Segment 4. As such, the acres disturbed would continue to be almost identical to Alternative 2.

** Alternative 7 would have some additional temporary disturbance associated with underground construction of the 66-kV subtransmission lines in Segment 7 through USACE controlled land in the vicinity of the Duck Farm Project area and due to the overhead re-routing the 66-kV line in the Whittier Narrows Recreation area in Segments 7 and 8A. New access and spur roads may result in additional permanent land disturbance compared to the proposed Project in the area of the new approximately 1,600-foot ROW for the San Gabriel River crossing within Segment 8A associated with the Whittier Narrows Overhead Re-Route (Option 1) or within the expanded ROW between Durfee Avenue and the San Gabriel River (Option 2).

*** Project construction is scheduled to occur from April 2010 to October 2015 (67 months). Construction of Alternative 6 would be identical to Alternative 2, with the exception of Segments 6 and 11, where substantially more helicopter construction may result in a longer construction schedule due to the limited availability of specialized helicopters and personnel. The schedule for helicopter construction would be finalized as part of final design and pre-construction planning. Based on current information, Alternatives 2 would use a total of 20 helicopter staging areas and Alternative 6 would use a total of 13 helicopter staging areas. Under Alternative 2, 16 of 20 would be on NFS lands and 1 would be on USACE controlled lands; under Alternative 6, 12 of 13 would be on NFS lands and none on USACE controlled lands.
A wide range of potential alternatives were considered in the preparation of this EIS and a screening process was used to identify alternatives that:

- Were feasible;
- Fulfilled the Project’s purpose and need;
- Addressed significant environmental issues associated with SCE’s proposed Project; and
- Would meet CAISO, Western Electricity Coordinating Council (WECC), and North American Electric Reliability Corporation (NERC) reliability planning criteria.

The process used to identify, evaluate, and screen potential alternatives is described in the Alternatives Screening Report in Appendix A of the Final EIR. The alternatives that met the NEPA criteria and were carried forward for detailed analysis are described in Chapter 2 (Description of Alternatives) of this EIS. Please note that this Final EIS primarily focuses on those alternatives, and their associated segments, that involve federal lands, including NFS lands and USACE lands (Alternatives 2, 6, and 7), as well as the No Project/Action Alternative (Alternative 1). The most current full descriptions of those alternatives located off federal lands (Alternatives 3, 4, and 5) are included in the Final EIR (October 2009). While those elements of the Project located off federal lands have already been approved by the CPUC in Decision 09-12-044 (December 24, 2009), they will be considered by the federal decision makers.

The alternatives, including SCE’s proposed Project, are analyzed across 16 environmental issue areas in Chapter 3 (Affected Environment and Environmental Consequences) of this Final EIS. The EIS presents an analysis of the environmental effects of the proposed Project and alternatives, recommends mitigation measures to address adverse impacts, and provides a comparison of the environmental effects of the proposed Project and the alternatives.

This Executive Summary complies with NEPA by stressing: areas of controversy; issues raised by agencies and the public; issues to be resolved; choices among alternatives; and major conclusions.

**ES.2 Areas of Controversy, Issues Raised, and Issues to be Resolved**

The Forest Service and the CPUC determined that the proposed Project could cause an unavoidable adverse effect on the environment and, therefore, initiated the preparation of the Draft EIR/EIS. The Forest Service published a Notice of Intent (NOI) in the Federal Register and the CPUC filed a Notice of Preparation (NOP) with the State Clearinghouse to initiate the EIR/EIS process. These notices formally initiated a public scoping period during which public and agency input was solicited regarding the scope of issues that should be addressed in the Draft EIR/EIS. The list below is a summary of the areas of controversy and issues identified in the scoping process.

- Controversy emerged during the scoping process regarding Segment 8A in the City of Chino Hills. Local residents and City officials are opposed to the construction of a 500-kV double-circuit transmission line through the residential areas of the City. In Chino Hills, the proposed 500-kV line would replace an existing 220-kV line that is currently de-energized. Concerns expressed about this portion of Segment 8A include adverse visual impacts on the community, exposure of nearby residents to EMF, public safety concerns, and potential adverse effects on local property values.

- The California Department of Parks and Recreation (CDPR) expressed concern about alternative routes proposed by the City of Chino Hills that would route the transmission line through portions of Chino Hills State Park in order to avoid transmission upgrades in residential areas of the City. The CDPR had indicated that any transmission improvements within Chino Hills State Park would be inconsistent with the Park’s General Plan and, therefore, would not be permitted absent amendments to the General Plan.
• The Watershed Conservation Authority (WCA) approved a recreation, water quality, and habitat restoration project known as the River Commons Project within the ROW for Segment 7 adjacent to the San Gabriel River. The WCA expressed concern that the replacement and relocation of transmission structures across the River Commons site may adversely affect its plans for construction of the River Commons Project and may require modification of project site plans to accommodate the proposed Segment 7 improvements.

• Concern was expressed at scoping meetings about the potential adverse effects of Segment 8A on the native habitat and wildlife corridor that has been established along the crest of the Puente Hills. Expressed concerns include the potential for adverse effects related to native habitat, wildlife movement, recreational trail use, and visual resources. These concerns were expressed by local residents and the Puente Hills Landfill Native Habitat Preservation Authority.

The environmental issue/resource areas identified during the scoping process are listed in Table ES-2 below and are discussed in Sections 3.2 through 3.17 of this Final EIS.

<table>
<thead>
<tr>
<th>Issue/Resource Area</th>
<th>Topics Addressed in the Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Resources</td>
<td>• Conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance</td>
</tr>
<tr>
<td></td>
<td>• Interference with agricultural operations</td>
</tr>
<tr>
<td></td>
<td>• Conflicts with Williamson Act contracts</td>
</tr>
<tr>
<td>Air Quality</td>
<td>• Generation of air pollutant emissions during construction and operation</td>
</tr>
<tr>
<td></td>
<td>• Objectionable odors</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>• Riparian habitat and other sensitive natural communities</td>
</tr>
<tr>
<td></td>
<td>• Endangered and threatened species and critical habitat for such species</td>
</tr>
<tr>
<td></td>
<td>• Federally protected wetlands as defined by Section 404 of the Clean Water Act</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>• Historic properties or Traditional Cultural Properties</td>
</tr>
<tr>
<td></td>
<td>• Historical resources or unique archaeological sites</td>
</tr>
<tr>
<td>Environmental Contamination and Hazards</td>
<td>• Soil contamination, including flammable or toxic gases</td>
</tr>
<tr>
<td></td>
<td>• Mobilization of contaminants currently existing in the soil</td>
</tr>
<tr>
<td>Geology, Soils, and Paleontology</td>
<td>• Unique geologic features or geologic features of unusual scientific value</td>
</tr>
<tr>
<td></td>
<td>• Known mineral and energy resources</td>
</tr>
<tr>
<td></td>
<td>• Triggering or acceleration of geologic processes, such as landslides or soil erosion</td>
</tr>
<tr>
<td></td>
<td>• Earthquake-related ground rupture in the vicinity of major fault crossings</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td>• Degradation of water quality</td>
</tr>
<tr>
<td></td>
<td>• Depletion of groundwater supplies or interference with groundwater recharge</td>
</tr>
<tr>
<td>Land Use</td>
<td>• Preclusion of permitted land uses</td>
</tr>
<tr>
<td>Noise</td>
<td>• Temporary or periodic increases in ambient noise levels during construction</td>
</tr>
<tr>
<td>Public Services and Utilities</td>
<td>• Demand for public services</td>
</tr>
<tr>
<td></td>
<td>• Interference with existing emergency access</td>
</tr>
<tr>
<td></td>
<td>• Interruption of existing utility systems</td>
</tr>
<tr>
<td>Socioeconomics</td>
<td>• Population, housing, and employment</td>
</tr>
<tr>
<td></td>
<td>• Quality of life</td>
</tr>
<tr>
<td></td>
<td>• Private property values</td>
</tr>
<tr>
<td></td>
<td>• Agricultural revenues</td>
</tr>
<tr>
<td></td>
<td>• Public agency revenue</td>
</tr>
</tbody>
</table>
Table ES-2. Environmental Resource/Issue Areas Identified During the Scoping Process

<table>
<thead>
<tr>
<th>Issue/Resource Area</th>
<th>Topics Addressed in the Analysis</th>
</tr>
</thead>
</table>
| Traffic and Transportation| • Traffic congestion during construction due to road or lane closures  
• Level of service on roadways in the area  
• Temporary access restrictions during construction  
• Restriction of emergency vehicle movement during construction  
• Disruption of bus transit service during construction  
• Disruptions of rail, aviation, bicycle, or pedestrian traffic  
• Effects on parking supply  
• Roadway wear in the vicinity of the construction zone  
• Effects on public and private airports, air traffic, and military aviation  |
| Visual Resources          | • Existing landscape character and visual quality  
• Scenic resources within a scenic highway viewshed or a national scenic trail viewshed  
• Light or glare  
• Applicable plans, policies, regulations, or standards for the protection and management of visual quality in the landscape  |
| Wilderness and Recreation | • Disruption of activities at federal, State, or local recreation areas or wilderness areas  
• Long-term loss or degradation of federal, State, local, or private recreational facilities or wilderness areas  |
| Wildfire Prevention and Suppression | • Fire prevention and suppression  
• Wildfire risks  
• Ignition potential and rate of fire spread  |
| Electrical Interference and Hazards | • Interference with radio, television, communications, or electronic equipment  
• Induced currents and shock hazards  
• Interference with cardiac pacemakers  
• Potential for structural failure due to wind or earthquake  |

**ES.3  Choice among Alternatives**

This summary provides a description of the proposed Project (Alternative 2) and alternatives. A more detailed description is provided in Chapter 2 (Description of Alternatives) of the EIS. Again, it should be noted that this Final EIS primarily focuses on those alternatives, and their associated segments, that involve federal lands, including NFS lands and USACE lands (Alternatives 2, 6, and 7), as well as the No Project/Action Alternative (Alternative 1). The full descriptions of those alternatives located off federal lands (Alternatives 3, 4, and 5) are included in the Final EIR (October 2009). This section also summarizes each potential alternative that was eliminated from further consideration and, therefore, was not analyzed in detail in the EIS (see the Alternatives Screening Report provided in Appendix A of the Final EIR for more information on these eliminated alternatives).

Alternatives to the proposed Project were suggested by SCE in its PEA, which was submitted as part of SCE’s application to the CPUC. Additional alternatives were developed by the Forest Service and CPUC in conjunction with the team preparing the environmental documents. Alternatives were also suggested by public agencies and members of the public during the scoping period for the Project (August-October 2007).

To determine the alternatives that would be analyzed in detail in the Draft EIR/EIS, an alternatives screening process was completed between October 2007 and June 2008. The results of this process are documented in the Alternatives Screening Report provided in Appendix A of the Final EIR. In total, the alternatives screening process resulted in the identification and screening of 29 potential alternatives. The alternatives considered included: (1) design variations to SCE’s proposed Project (12 total), such as different substation sites, reduced conductor voltage (220 kV instead of 500 kV), single-circuit versus double-circuit structures, etc.; (2) minor routing adjustments to SCE’s proposed route (3 total), such as re-routing Segment 10 along the Los Angeles Aqueduct; (3) entirely different transmission line routes for some segments of the proposed alignment (12 total); and (4) alternate system configurations (2 total). In addition to the 29 potential alternatives that were evaluated in the Alternatives Screening Report (Final
EIR Appendix A), other ideas for potential alternatives were suggested by agencies and the public during the scoping period for the Project (August-October 2007). Many of these suggestions were conceptual and were not offered as specific alternatives, but rather as ideas to be explored.

Based on the alternatives screening process, three of the alternatives considered in the Alternatives Screening Report (Final EIR Appendix A) were carried forward to be analyzed along with the No Project/Action Alternative (Alternative 1) and SCE’s proposed Project (Alternative 2). These three alternatives are the West Lancaster Alternative (Alternative 3), Chino Hills Route Alternatives (Alternative 4, Routes A through D), and the Partial Underground Alternative (Alternative 5). Following completion of the Alternatives Screening Report, a new alternative was requested by the Forest Service to reduce ground disturbance within the ANF by minimizing new road construction through the use of helicopter construction, which resulted in the development of the Maximum Helicopter Construction in the ANF Alternative (Alternative 6). The 66-kV Subtransmission Alternative (Alternative 7) was also developed following the completion of the Alternatives Screening Report in response to requests from the County of Los Angeles Board of Supervisors and additional input from SCE. Finally, in response to a comment letter on the Draft EIR/EIS submitted by the City of Chino Hills, an additional route modification was considered as part of Alternative 4, which is referenced herein as Alternative 4C Modified. These seven alternatives, including the five route options considered under Alternative 4, are discussed below.

Overview of the Proposed Project and Alternatives

Below is an overview of the alternatives considered as part of the EIS. Pursuant to NEPA (40 CFR 1505.1(e)), a reasonable range of alternatives to SCE’s proposed Project (Alternative 2) were examined and were selected based on the following criteria: (1) the alternative’s potential to meet most of the Project objectives/purpose and need; (2) the feasibility of the alternative; (3) the alternative’s ability to avoid or lessen adverse effects of SCE’s proposed Project; and (4) the alternative’s ability to meet CAISO/WECC/NERC reliability planning criteria. As required under NEPA Section 1502.14(d), a No Project/Action alternative was also considered. The proposed Project and alternatives include the following:

Alternative 1: No Project/Action Alternative. Under the No Project/Action Alternative the Project, as proposed, would not be implemented. As such, none of the associated Project activities would occur and the environmental impacts associated specifically with the proposed Project would not occur. However, in the absence of the Project, SCE still would continue to operate and maintain the existing transmission structures, access, and spur roads for operations and maintenance purposes under a variety of agreements (landowners) and permits/easements (Forest Service and USACE). SCE would also be required to interconnect and integrate power generation facilities into its electric system, as required under Sections 210 and 212 of the Federal Power Act (16 U.S.C. § 824 [i] and [k]) and Sections 3.2 and 5.7 of the CAISO’s Tariff. Various scenarios related to electricity generation and transmission reasonably expected to occur in the foreseeable future are identified in Chapter 2 (Description of Alternatives) of this EIS.

Alternative 2: SCE’s Proposed Project. SCE’s proposed Project would involve construction, operation, and maintenance of new/ upgraded transmission infrastructure along approximately 173 miles of existing and new/expanded ROW from the TWRA in southern Kern County south through Los Angeles County and the ANF and east to the existing Mira Loma Substation in Ontario, San Bernardino County, California. To support construction of the proposed Project, a total of 20 helicopter staging/support areas have been identified by SCE in the vicinity of Segments 6 and 11 to provide for helicopter construction
activities within the ANF. A total of 33 new 500-kV towers would be constructed by helicopter under this alternative: 17 along Segment 6 and 16 along Segment 11. The proposed Project would traverse approximately 42 miles of NFS lands in the ANF, as well as approximately 6.4 miles of lands that are controlled by the USACE in the vicinity of Santa Fe Dam and Whittier Narrows in Los Angeles County (Segments 7 and 8). In addition, a 3.8-acre helicopter staging area (SCE #9), which would be utilized during construction, would be located on land controlled by the USACE. The major components of this alternative include seven segments of new/upgraded transmission line (Segments 4, 5, 6, 7, 8A/B/C, 10, and 11) and new/ upgraded substations (Segment 9). Invasive plant species will be controlled using manual techniques and approved herbicides within the Project area on NFS lands on the ANF.

Alternative 3: West Lancaster Alternative. This alternative would re-route the new 500-kV transmission line in Segment 4, which is currently proposed along 110th Street West, 0.5 miles farther west along 115th Street West. This alternative represents a refinement of the applicant’s proposed Project that would place the transmission line along an undeveloped area instead of through development thereby minimizing disturbance to current residences or access to properties located along the paved 110th Street West. As such, land use impacts and visual impacts would be reduced.

Alternative 4: Chino Hills Alternatives. Five variations to the Chino Hills State Park alternatives considered by SCE in its PEA (RA Eliminated 6, Options 1 and 2) have been included in this analysis, as described below. These routing options have been retained for further analysis, as each would avoid proximity of the transmission line to existing residences of the City of Chino Hills; and implementation of one of these routing options would eliminate construction of approximately 16 miles of 500-kV structures along Segment 8A, between S8A MP 19.2 and 35.2. Upgrades along Segment 8B would still occur under Alternative 4, and would be the same as the proposed Project (Alternative 2).

- **Route A** would place a new double-circuit 500-kV transmission line in Segment 8A through Chino Hills State Park (CHSP) parallel to an existing double-circuit 220-kV transmission line. This alternative route would require construction of a new 500-kV switching station in CHSP, which would allow the new 500-kV transmission line to connect to existing 500-kV transmission lines located in this area that provide connections to the Mira Loma Substation.

- **Route B** represents a refinement to Route A, in which a new double-circuit 500-kV transmission line in Segment 8A would be routed completely through CHSP parallel to an existing double-circuit 220-kV transmission line. This alternative route would require construction of a new 500-kV switching station, which would be located east of and outside of the CHSP, and would allow the new double-circuit 500-kV transmission line to connect to existing 500-kV transmission lines located in this area that provide connections to the Mira Loma Substation.

- **Route C** represents a refinement to Route A, in which a new double-circuit 500-kV transmission line in Segment 8A would be placed parallel to an existing double-circuit 220-kV transmission line up to CHSP. At this point, this alternative route would turn east for approximately 2.4 miles, remaining just north of the CHSP boundary, to a new 500-kV switching station. A portion of the existing single-circuit 500-kV transmission lines within CHSP would be re-routed to tie into the new switching station, which would allow the new double-circuit 500-kV transmission line to connect to these existing 500-kV transmission lines to allow power flow to continue on to the Mira Loma Substation. In addition, a portion of the existing 220-kV transmission line within CHSP would be re-routed outside of CHSP, paralleling the new 500-kV transmission line from just west of the CHSP boundary to the new switching station, and would then re-enter CHSP paralleling the re-routed 500-kV transmission lines to reconnect with the existing 220-kV transmission line.

- **Route C Modified** is similar to the original Route C option discussed above, with the exceptions that (1) the new gas-insulated switching station would be located on Aerojet property approximately 2,500 feet northwest of the location proposed for the original Alternative 4C, (2) transmission line configurations and access roads would be altered to account for relocation of the switching station, and (3) re-routing of the existing single-circuit 500-kV towers in CHSP to the new switching station would occur utilizing double-circuit 500-kV
towers. As with the original Route C, this proposed Route 4C Modified would also diverge from the proposed Project Segment 8A at Mile 19.2, as well as re-route the existing 500-kV and 220-kV transmission lines from within CHSP, through a new switching station located north of CHSP.

- **Route D** represents a refinement to Route A, in which a new double-circuit 500-kV transmission line in Segment 8A would be placed parallel to an existing double-circuit 220-kV transmission line up to CHSP. At this point, the alternative route would turn east and proceed to follow the northern boundary of CHSP for approximately 4.2 miles, then just east of Bane Canyon the alignment would turn southeast and cut across CHSP for approximately 1.3 miles to a new 500-kV switching station located immediately east of the boundary of CHSP (same location as Alternative 4, Route B). This switching station would allow the new double-circuit 500-kV transmission line to connect to existing 500-kV transmission lines located in this area to provide connections to the Mira Loma Substation.

**Alternative 5: Partial Underground Alternative.** This alternative would utilize Gas-Insulated Line (GIL) technology to place the proposed overhead lines underground along Segment 8A through the City of Chino Hills for approximately 3.5 miles to reduce adverse visual impacts and address other community concerns.

**Alternative 6: Maximum Helicopter Construction in the ANF Alternative.** This alternative would utilize helicopter construction within the ANF to the maximum extent feasible. This alternative was requested by the Forest Service to reduce ground disturbance within the ANF by minimizing new road construction through the use of helicopter construction. A total of 13 helicopter staging/support areas have been identified in the vicinity of Segments 6 and 11 to provide for helicopter construction activities within the ANF. A total of 151 new 500-kV towers would be constructed by helicopter under this alternative: 96 along Segment 6 and 55 along Segment 11. As with the proposed Project, Alternative 6 would traverse approximately 42 miles of NFS lands in the ANF and approximately 6.4 miles of lands that are controlled by the USACE. Invasive plant species will be surveyed for and controlled using manual techniques and approved herbicides within the Project area on NFS lands.

**Alternative 7: 66-kV Subtransmission Alternative.** This alternative is comprised of four 66-kV subtransmission line elements, including the following: (1) Undergrounding the existing 66-kV subtransmission line on Segment 7 on USACE controlled lands through the River Commons at the Duck Farm Project (Duck Farm Project) between MP 8.9 and MP 9.9 of Segment 7, in the planned Duck Farm Project area as requested by the Board of Supervisors County of Los Angeles to minimize the Project’s effects to passive recreation opportunities in the planned Duck Farm project area; (2) Re-routing and undergrounding the existing 66-kV subtransmission line around the Whittier Narrows Recreation area along Segment 7 (S7 MP 11.4 to 12.025) to reduce impacts to least Bell’s vireos as identified by SCE and USACE; (3) Re-routing the existing 66-kV subtransmission line through the Whittier Narrows Recreation Area, which is controlled by the USACE, in Segment 7 (S7 MP 12.0 to 13.6) immediately north of the existing 220-kV ROW to reduce the number of structures required (20-foot expanded ROW required); (4) Re-routing the existing 66-kV subtransmission line around the Whittier Narrows Recreation Area along Segment 8A between the San Gabriel Junction at MP 2.2 and S8A MP 3.8 (two routing options are provided in this area) to reduce impacts to least Bell’s vireos as identified by SCE and the USACE. As with the proposed Project, Alternative 7 would traverse 42 miles of NFS lands in the ANF; however, this alternative would also traverse roughly 7.9 miles of lands that are controlled by the USACE, which is approximately 1.5 miles more of USACE lands than the proposed Project or other Project alternatives.

**NEPA Preferred Alternative**

The NEPA preferred alternative, as identified by the Forest Service, is a combination of certain elements of Alternative 2 and Alternative 6, as discussed in Chapter 4 (Section 4.3). No new or greater impacts
would be introduced as a result of this hybrid alternative, as it: (1) is based on two alternatives whose impacts have been fully analyzed in the EIS, and the change in impact magnitude would fall within the range identified for these two alternatives; and (2) would result only in a difference in the construction method utilized for removal and construction of the new transmission structures (ground-based construction versus helicopter construction).

**ES.4 Major Conclusions**

Construction of the TRTP would result in a number of temporary impacts that would cease upon completion of the construction phase. Such impacts include a temporary reduction of agricultural productivity in the Project area; loss of native vegetation as a result of its direct removal during construction activities, and impacts to wildlife from clearing, grading, and helicopter noise; water quality and geology impacts from erosion and sedimentation during construction; restricted access and disruptions to recreational resources; disruptions to existing utility systems; and traffic impacts from increased congestion and disruption to transit routes. As discussed in Sections 3.2 through 3.17 of this Final EIS, and summarized in Section ES.4.2 (below), these adverse impacts would be minimized with implementation of the proposed mitigation measures. Unavoidable adverse impacts associated with Project construction, operation, and maintenance are summarized in Section ES.4.1, below.

**ES.4.1 Unavoidable Adverse Impacts**

Unavoidable adverse impacts that would directly or indirectly result from the proposed Project and alternatives are summarized below. Cumulative impacts are also presented; however the discussion is limited to the summary presented in Table ES-3 below. Refer to Sections 3.2 through 3.17 of this Final EIS for a complete description of these impacts. As noted above, for Alternatives 3, 4, and 5, the impact discussions have not been reproduced in this Final EIS and are provided in Sections 3.2 through 3.17 of the Final EIR (October 2009).

**ES.4.1.1 Air Quality**

As described in Section 3.3 (Air Quality), construction of the proposed Project and alternatives would result in short-term impacts to ambient air quality. Daily construction emissions from the proposed Project and alternatives, including nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM10) and fine particulate matter (PM2.5), even after implementation of all feasible mitigation measures, would remain above the South Coast Air Quality Management District (SCAQMD) daily thresholds and the Antelope Valley Air Quality Management District (AVAQMD) daily thresholds (except for PM2.5 where there is no threshold recommended by AVAQMD). In addition, the NOx and PM10 emissions from the proposed Project and alternatives would remain above the Eastern Kern Air Pollution Control District (EKAPCD) daily threshold values. Therefore, the daily regional emissions from the proposed Project and alternatives would cause unavoidable adverse temporary impacts to air quality in these three jurisdictions.

There are many areas along the proposed Project and alternative routes where construction would be located near residences, schools, or other sensitive receptors. Construction of the proposed Project and alternatives would cause localized emissions above the SCAQMD Localized Significance Threshold (LST) values even after mitigating to the maximum extent feasible; therefore, construction of the proposed Project and alternatives would have an adverse and unavoidable temporary impact on local sensitive receptors.
ES.4.1.2 Land Use

As described in Section 3.9 (Land Use), impacts resulting from construction of the proposed Project and all alternatives, except Alternatives 4 and 5, would be reduced to the degree feasible with implementation of recommended mitigation measures. Land use impacts related to Alternatives 4 and 5 are discussed in detail in Section 3.9 of the Final EIR (October 2009). Alternatives 4 and 5 are not located on federal lands and have already been considered by the CPUC in CPUC Decision 09-12-044 (December 24, 2009).

Alternative 4

As described in Section 3.9 (Land Use), Routes A, B, C, C Modified, and D of Alternative 4 would traverse non-residential lands used for grazing, Chino Hills State Park (Park), and open space (undeveloped) lands east of the Park. During construction, these routes would temporarily disrupt, displace, or preclude operational and maintenance activities within the Park. Although Route B traverses the greatest distance within the Park and Route A would involve a new switching station within the Park, it would be anticipated that construction-related activities associated with Route C would be of a similar or perhaps greater duration than Routes A and B because it would involve the dismantling and re-construction (re-routing) of two sets of transmission towers (single-circuit 500-kV and double-circuit 220-kV) within the Park. Construction-related impacts to non-residential land uses under Route C Modified would be nearly identical to those under the original Route C. In comparison to Routes A, B and D, both the original Route C and Route C Modified would be expected to result in construction-related impacts that occur for longer period of time because they would involve the dismantling and re-construction (re-routing) of three existing transmission lines within the Park. The implementation of Land Use mitigation measures, in conjunction with the mitigation measures provided for other resource/issue areas (Air Quality, Noise, Traffic and Transportation, Biological Resources, and Wilderness and Recreation), would lessen construction-related impacts within the Park; however, adverse impacts would not be completely avoided.

Alternative 4 would require the expansion of ROW within Chino Hills State Park. The use of Park land for transmission purposes is anticipated to cause long-term conflicts with, and disruptions of, existing uses and operations within the Park. Additionally, the placement of these features is anticipated to conflict with the Park’s management of affected Natural Open Space and Core Habitat Zones. These impacts would be adverse and unavoidable.

Implementation of Alternative 4 would not be consistent with the Chino Hills State Park General Plan. In order to achieve consistency, the Chino Hills State Park General Plan would need to be amended. The amendment would subsequently require approval by the State Parks and Recreation Commission. Therefore, the existing inconsistency between Alternative 4 and the Chino Hills State Park General Plan would be an unavoidable adverse impact.

Alternative 5

As discussed in Section 3.9 (Land Use), there are commercial and services uses adjacent to both sides of the ROW along Alternative 5. To accommodate the Eastern Transition Station, the existing ROW north of an existing flood control channel would need to be expanded by 100 feet, for a total ROW width of 250 feet. The expanded ROW and construction of the Eastern Transition Station would require the removal of a commercial car wash, a retail business, and a portion of a parking lot. Although it is assumed that SCE would make all efforts to purchase the property needed for construction of the Eastern Transition Station, it is feasible that the owner (or owners) of both the property and the affected businesses would not agree
to, or be willing to negotiate, SCE’s proposed acquisition agreement (or agreements). Under this scenario, implementation of Alternative 5 would likely require that the CPUC exercise eminent domain. The take of the property and businesses affected by Alternative 5 through eminent domain would be an unavoidable adverse impact.

**ES.4.1.3 Noise**

As described in Section 3.10 (Noise), construction noise from the proposed Project and alternatives would substantially increase ambient noise conditions for sensitive receptors and increase noise levels within 200 feet of construction activities along the proposed Project and alternative ROWs. During construction, noise levels would violate local standards. Although construction noise would be temporary and would be reduced by implementation of applicant-proposed measures (APMs) and mitigation measures, adverse impacts to sensitive receptors would not be completely avoided.

Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations in the vicinity of sensitive receptors. Corona noise generated by the proposed Project and alternatives would not be in compliance with noise standards of Los Angeles County, and the Cities of Chino, Monterey Park, and Whittier. Since no feasible mitigation exists to reduce or eliminate the corona noise that would be generated by the proposed Project or alternatives, the increase in corona noise levels would result in an unavoidable adverse impact.

**ES.4.1.4 Visual Resources**

Section 3.14 (Visual Resources) states that short-term visual impacts on landscape character and visual quality of landscape views as seen from various vantage points due to construction of the proposed Project and alternatives would be adverse and unavoidable. Because of the size and complexity of this Project, there are no mitigation measures available that would effectively counter the adverse visual effects of construction activities and equipment as seen from sensitive receptor locations.

For this Project, there is no mitigation available to make new transmission lines disappear or become inconspicuous as seen from the numerous vantage points from which the proposed Project and alternatives would be visible. Based on Project limitations (i.e., lack of topographic screening, Project size, etc.), the presence of new transmission line structures, conductors, access and spur roads, and new ROWs in landscapes that currently have no transmission line facilities would result in an unavoidable adverse visual impact. However, the majority of the Project area would not experience this level of visual impact since structures already exist in many of the corridors, although impacts are still considered adverse due to the increase in structure size compared to the existing structures.

**ES.4.1.5 Wildfire Prevention and Suppression**

As described in Final EIR Section 3.16 (Wildfire Prevention and Suppression), the presence of the rerouted portion of Alternative 4 would incrementally increase the likelihood of a wildfire in fire-prone areas along the transmission ROW where new or expanded transmission line would be constructed. Mitigation measures would reduce the risk of vegetation contact with conductors, the likelihood of component failures that could result in wildfire ignitions, and the potential damage to homes from Project-related wildfires. However, the creation of defensible fuelbreaks, which would be required to comply with Mitigation Measure F-5 (Share costs for fuelbreak maintenance), would not guarantee structure protection during severe fire weather and, therefore, the potential for the re-routed portion of Alternative 4 to ignite a wildfire would not be reduced. Although mitigation measures would reduce the risk of fire
ignition and the potential for damage to homes from Project-related wildfires, the potential to ignite a fire and cause damage to homes would still exist and would remain unavoidable.

The major findings of the EIS analysis are summarized below in Table ES-3 (Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures) according to issue/resource area.

**ES.4.2 Mitigable Impacts**

Impacts of the proposed Project and alternatives that would be reduced to the degree feasible with implementation of recommended mitigation measures are summarized below. The mitigation measures that would be required to reduce impacts are identified and described in Sections 3.2 through 3.17 of this Final EIS. In addition, Table ES-3 (Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures) provides a summary of all identified Project impacts and associated mitigation measures.

**ES.4.2.1 Agricultural Resources**

Construction, operation, and maintenance of the proposed Project and each of the alternatives would result in the conversion of Farmland to non-agricultural uses and would interfere with agricultural operations in some areas.

**ES.4.2.2 Air Quality**

The unavoidable adverse Air Quality impacts are summarized above in Section ES.4.1. In addition to these impacts, construction of the Project or an alternative would result in non-compliance with the Federal General Conformity Rule (40 CFR Parts 6, 51, and 93) requirements (Alternative 6 only), the air quality provisions of the Angeles National Forest Strategy, and other applicable air quality management plans in the Project area. Per 40 CFR §93.153, the Forest Service, as the federal Lead Agency for the Project, prepared a Draft Conformity Determination that was released for a 30-day public review period on March 22, 2010. Comments received on the Draft Conformity Determination were responded to in the Final Conformity Determination, which the Forest Service approved on June 2, 2010. The Final Conformity Determination is included in Appendix A.2 of this Final EIS.

**ES.4.2.3 Biological Resources**

Construction of the proposed Project or an alternative would have the potential to result in the following impacts to riparian or sensitive natural communities: loss of native vegetation; loss of desert wash; spread of noxious weeds; wildlife disturbance and mortality; loss of nesting birds or raptors; and loss of foraging habitat. The following impacts to endangered or threatened species and/or proposed or critical habitat would also occur under the proposed Project and alternatives: loss of arroyo toad (direct effects from road use, a recognized threat to arroyo toads would be minimized under Alternative 6) and critical habitat for the coastal California gnatcatcher. Other potential effects to listed species include loss of California red-legged frog (reduced under Alternative 6 through avoidance of known populations at Aliso Creek), mountain yellow-legged frog, desert tortoise, unarmored threespine stickleback, Santa Ana sucker, California condor, and California gnatcatcher; disturbance of nesting southwestern willow flycatchers, least Bell’s vireo, yellow-billed cuckoos and/or their habitat; and electrocution of federally protected birds. Additionally, effects on candidate or Forest Service Sensitive species could include the following: loss of plant species; mortality or injury of and loss of nesting habitat for southwestern pond turtles, two-striped garter snakes, and south coast garter snakes; disturbance of wintering mountain plovers; loss of
occupied burrowing owl habitat and California spotted owl habitat; and disturbance of nesting avian and bat species (including as a result of transmission line strikes); Project effects on federally protected wetlands could include loss of wetlands. Finally, Project interference with native fish or wildlife movements, corridors, or nursery sites could include impedance of desert tortoise movement as a result of habitat modification, as well as potential impacts to Management Indicator Species.

**ES.4.2.4 Cultural Resources**

It has been determined that construction the proposed Project would have an adverse effect on NRHP properties, according to the criterion in 36 CFR 60.4(d), and pursuant to 36 CFR § 800.5(d)(2); however, successful resolution of adverse effects resulting from the Project through the Section 106 process, in consultation with the State Historic Preservation Officer (SHPO), would mitigate these impacts in the context of NEPA. In consultation with the SHPO, the Forest Service has thoroughly considered alternatives and has determined that adverse effects of the proposed Project cannot be avoided and would resolve any potential adverse effects by executing and implementing a Programmatic Agreement (PA) pursuant to 36 CFR 800.6 (see Final EIS Appendix D for the Final Programmatic Agreement). In addition, Project activities would result in adverse changes to the significance of historical resources by diminishing the integrity of properties eligible for inclusion in the California Register of Historical Resources (CRHR). Furthermore, Native American human remains or sacred features could be inadvertently uncovered, exposed, and/or otherwise damaged during construction.

**ES.4.2.5 Environmental Contamination and Hazards**

Excavation or grading during construction of the Project or an alternative could result in the following scenarios: mobilization of existing soil or groundwater contamination from known sites; explosions or exposure of workers to toxic gases as a result of encountering landfill gas and/or natural gas located near active, inactive, or abandoned oil wells; and disturbance of unanticipated preexisting soil and/or groundwater contamination.

**ES.4.2.6 Geology, Soils, and Paleontology**

Activities associated with construction of the proposed Project or an alternative could interfere with access to known energy resources. Such activities could also trigger or accelerate geologic processes such as erosion, slope instability, and landslides. In addition, exposure to potential risk of loss or injury from earthquake-related ground rupture could occur if Project structures are damaged by surface fault rupture at crossings of active faults. Project structures could also be damaged as a result of seismically-induced groundshaking, problematic soils, landslides, earth flows, and/or debris slides, thereby exposing people or structures to hazards.

**ES.4.2.7 Hydrology and Water Quality**

Construction of the proposed Project or an alternative would have the potential to degrade surface and/or groundwater quality through erosion and sedimentation (Alternatives 2 through 7), accidental release of hazardous materials (Alternatives 2 through 7), and/or discharge of contaminated groundwater during dewatering operations (Alternatives 5 and 7). In addition, the placement of Project structures may result in flood-related damage as a result of impeding flood flows, and may be inundated by mudflow during Project operation.
ES.4.2.8 Land Use

The unavoidable adverse Land Use impacts are summarized above in Section ES.4.1. Construction of the proposed Project or an alternative would temporarily disrupt, displace, or preclude existing residential land uses, and non-residential land uses. Operation and maintenance would result in long-term disruption of existing and planned non-residential land uses, and would conflict with relevant federal, State, or local land use plans, goals, and/or policies.

ES.4.2.9 Public Services and Utilities

Construction of the proposed Project or an alternative may require emergency services if a construction-related accident occurs. Access of emergency response vehicles may be impeded by temporary lane closures during the construction period. Utility systems and public works maintenance yards would be temporarily disrupted during the construction period.

ES.4.2.10 Traffic and Transportation

Construction of the proposed Project or an alternative could result in the following: substantial congestion due to road and/or lane closures; temporary interference with emergency response; temporary disruption of transit routes, rail traffic or operations, and pedestrian / bicycle traffic; localized shortages of public parking; conflicts with planned transportation projects; introduction of aviation hazards (transmission structures); and temporary restrictions on property access as a result of underground construction activities (Alternative 7 only).

ES.4.2.11 Visual Resources

The unavoidable adverse Visual Resources impacts are summarized above in Section ES.4.1. Installation of transmission structures associated with the proposed Project and the alternatives would potentially result in sunlight reflection, glint, and glare under certain lighting conditions. In addition, the Project would contribute to the long-term loss or degradation of a scenic highway viewshed and/or a scenic trail viewshed as a result of installing permanent features including transmission structures.

ES.4.2.12 Wilderness and Recreation

Construction, operation, and maintenance of the proposed Project or an alternative would have the potential to restrict access to or disrupt activities associated with established recreational resources and/or opportunities. For instance, the presence of construction vehicles and equipment along segments of the Project and traveling to Project sites would introduce traffic, noise, and visual effects that could disrupt recreational activities. These impacts would be temporary and would occur throughout the Project area, including within the Whittier Narrows Recreation Area, which is traversed by portions of Segments 7 and 8, and the Santa Fe Dam Recreation Area, which is located within one mile of Segment 7. Construction activities under Alternative 6 would have the potential to contribute to the degradation of the “solitude and unconfined recreation” characteristic of the designated San Gabriel Wilderness Area. In addition, construction of the proposed Project and alternatives would contribute to the degradation of the “backcountry experience” along several portions of the Pacific Crest National Scenic Trail. Project activities, particularly related to road improvements, would have the potential to degrade Off-Highway Vehicle opportunities and facilitate unmanaged recreation in the ANF.
ES.4.2.13 Wildfire Prevention and Suppression

The unavoidable adverse impacts related to Wildfire Prevention and Suppression, specifically related to the rerouted portion of Alternative 4, are summarized above in Section ES.4.1. Construction and/or maintenance activities under the proposed Project and alternatives would have the potential to reduce the effectiveness of firefighting, increase the risk of wildfire, and increase the risk of personnel injury or death in the event of a fire. In addition, Project activities would introduce non-native plants, which would contribute to increased ignition potential and rate of fire spread, in the event of a fire.

ES.4.2.14 Electrical Interference and Hazards

Construction, operation, and maintenance of the proposed Project or an alternative would have the potential to result in the following: electrical interference with radio, television, communications, and/or electronic equipment, as well as induced currents and shock hazards in joint use corridors.

As mentioned, Table ES-3 (Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures), which is presented below, provides a summary of all identified Project impacts and associated mitigation measures.
### Executive Summary

#### Tehachapi Renewable Transmission Project

**Table ES-3: Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative, Effects, and Mitigation Measures**

<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Converts farmland to non-agricultural use</td>
<td>Construction activities would temporarily reduce the agricultural use of some farmland. (Impact AG-1)</td>
<td>Construction of residential and urban development projects would result in substantial areas of farmland converted to non-agricultural uses.</td>
<td>AG-1: Coordinate construction activities with agricultural landowners.</td>
</tr>
<tr>
<td></td>
<td>Operation would permanently convert farmland to non-agricultural use. (Impact AG-2)</td>
<td>The area of land that would be permanently converted for the proposed Project would potentially combine with similar impacts of other projects.</td>
<td>NA: Available</td>
</tr>
<tr>
<td>Interference with agricultural operations</td>
<td>Construction activities would interfere with agricultural operations. (Impact AG-3)</td>
<td>Construction of residential and urban development projects would disrupt agricultural operations both through the disruption of agricultural land as well as through construction activities on and adjacent to agricultural lands.</td>
<td>AG-1</td>
</tr>
<tr>
<td></td>
<td>Operation would interfere with agricultural operations. (Impact AG-4)</td>
<td>The operation of the proposed Project across agricultural land would interfere with agricultural operations. This impact would combine with the impacts of the operation of other planned projects on agricultural operations.</td>
<td>AG-1</td>
</tr>
</tbody>
</table>

**Regional emission thresholds**

<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCAGMD Localized Significance Thresholds</td>
<td>Construction of the Project could expose sensitive receptors to substantial pollutant concentrations. (Impact AQ-2)</td>
<td>Operating emissions could exceed the SCAQMD, AVAQMD, and/or EKAPCD localized significance thresholds. (Impact AQ-3)</td>
<td>AQ-2a to AQ-3j</td>
</tr>
<tr>
<td>SCAQMD Risk thresholds</td>
<td>Operation of the Project could expose sensitive receptors to substantial pollutant concentrations. (Impact AQ-4)</td>
<td>The proposed Project's operation will have a net emission decrease, so it will not contribute to regional emissions and would have a minimal cumulative regional impact.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Toxic air contaminant emissions would exceed SCAQMD risk thresholds.</td>
<td>Construction or operation of the Project could generate toxic air contaminant emissions that would exceed SCAQMD risk thresholds. (Impact AQ-5)</td>
<td>Since the proposed Project's operation will have minimum direct localized operating emissions and the project will help create an overall net emission decrease, it will have minimal cumulative localized impacts to sensitive receptors.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Result in non-compliance with the Federal General Conformity Rule (40 CFR Parts 6, 51, and 53) requirements.</td>
<td>Project conformance with Federal General Conformity Rules. (Impact AQ-6)</td>
<td>This impact is strictly applicable to single project evaluation. Therefore, cumulative impacts would not occur.</td>
<td>AQ-6: General Conformity Emission Offset Mitigation (Alt 6 Only)</td>
</tr>
<tr>
<td>Expose a substantial number of people to objectionable odors.</td>
<td>The Project could create objectionable odors. (Impact AQ-7)</td>
<td>Given the temporary nature and relative mildness of the Project's construction odors, odor impacts related to the proposed Project would be adverse but not cumulative in nature.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Conflict with air quality provisions of the Angeles National Forest Strategy.</td>
<td>Project conformance with Angeles National Forest air quality strategies. (Impact AQ-8)</td>
<td>This impact is strictly applicable to single project evaluation. Therefore, cumulative impacts would not occur.</td>
<td>AQ-8: Project conformance with Angeles National Forest air quality strategies.</td>
</tr>
<tr>
<td>Inconsistent with the current approved Air Quality Management Plans.</td>
<td>Project conformance with applicable Air Quality Management Plans. (Impact AQ-9)</td>
<td>This impact is strictly applicable to single project evaluation. Therefore, cumulative impacts would not occur.</td>
<td>AQ-9: Project conformance with applicable Air Quality Management Plans.</td>
</tr>
<tr>
<td>Greenhouse gas emissions</td>
<td>Emissions could contribute to climate change. (Impact AQ-10)</td>
<td>This Project will allow a reduction in GHG emissions from electricity generation resulting in beneficial impacts and would not result in impacts that would be cumulative in nature.</td>
<td>None recommended</td>
</tr>
</tbody>
</table>

**Seasonal Summary**

Final EIS

ES-19

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<table>
<thead>
<tr>
<th>Biological Resources</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts to riparian or natural communities</td>
<td>Construction activities would result in temporary and permanent losses of native vegetation. (Impact B-1)</td>
<td>Due to the historic and ongoing loss of native vegetation communities region-wide, the impacts to native vegetation have the potential to combine with similar impacts of other projects and would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a: Provide restoration/complementation for impacts to native vegetation communities</td>
</tr>
<tr>
<td></td>
<td>The Project would result in loss of sensitive desert wash or riparian habitat. (Impact B-2)</td>
<td>The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because the impact would reduce and/or degrade desert wash and riparian habitat types that are limited in distribution within Southern California. Impacts would be considered cumulatively adverse and unavoidable.</td>
<td>B-1b, B-1c, AQ-1a, H-1a</td>
</tr>
<tr>
<td></td>
<td>The Project would result in the establishment and spread of noxious weeds. (Impact B-3)</td>
<td>The spread of existing weeds or the introduction of new weed populations is a major Project impact and would also contribute to the cumulative spread of weeds when combined with weed population establishment and spread occurring from other past and reasonably foreseeable projects. The introduction and spread of noxious weeds would be considered cumulatively adverse and unavoidable.</td>
<td>B-2</td>
</tr>
<tr>
<td>Construction activities, including the use of access roads and helicopter construction, would result in disturbance to wildlife and result in wildlife mortality. (Impact B-4)</td>
<td>The Project would result in disturbance to wildlife and wildlife mortality during construction activities. Past and foreseeable future actions in these areas would also result in considerable disturbance to wildlife, especially common species. Cumulatively, impacts would be potentially adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction activities conducted during the breeding season could result in the loss of nesting birds or raptors. (Impact B-5)</td>
<td>The Project combined with other past and foreseeable future actions would substantially reduce the acreage of several habitat types that are important for riparian birds and limited in distribution in Southern California, such as riparian habitats. This impact would be cumulatively adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project would cause loss of foraging habitat for wildlife. (Impact B-6)</td>
<td>The Project combined with other past and foreseeable future actions would substantially reduce the acreage of several habitat types that are important for wildlife and limited in distribution in Southern California. This impact would be cumulatively adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impacts to endangered or threatened species, or proposed or Designated critical habitat</td>
<td>The Project could disturb endangered, threatened, or proposed plant species or their habitat. (Impact B-7)</td>
<td>The Project combined with other past and foreseeable future actions would substantially reduce the acreage of suitable habitat for multiple candidate, sensitive, and special-status plants in the region. This impact would be cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-3a, AQ-1a, H-1a</td>
</tr>
<tr>
<td>The Project could result in the loss of California red-legged frogs and mountain yellow-legged frogs. (Impact B-8)</td>
<td>Impacts would be cumulatively adverse and unavoidable because past actions and natural events have so severely impacted California red-legged frog and mountain yellow-legged frog populations that both species are now at the brink of extinction in Southern California.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project could result in the loss of arroyo toads. (Impact B-9)</td>
<td>Other projects that would have the potential to disturb arroyo toads or their habitat in the Project area would be subject to analysis under Section 7 of the ESA and would include mitigation similar to that proposed for the TRTP. Therefore, the incremental effects to arroyo toads from the proposed Project and other projects in the area would be minimized.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project could result in the loss of desert tortoises. (Impact B-10)</td>
<td>Project impacts, should they occur, would contribute substantially to the incremental take of, and loss of habitat for, desert tortoises when combined with the effects of take and loss of habitat caused by other past and reasonably foreseeable projects, and therefore, would be cumulatively adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project could result in the mortality of desert tortoises as a result of increased predation by common ravens. (Impact B-11)</td>
<td>A substantial increase in cumulative predation of the desert tortoise, if present, by common ravens is not expected.</td>
<td></td>
<td>None recommended</td>
</tr>
<tr>
<td>The Project could result in the loss of special-status fish. (Impact B-12)</td>
<td>Project effects to the Big Tujunga population are not expected; however, the Santa Ana sucker is present along the proposed West Fork Cogswell Road. Impacts to special-status fish species or their habitat would be cumulatively adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project could result in the loss of critical habitat for the Santa Ana sucker. (Impact B-13)</td>
<td>Other projects that would have the potential to impact Santa Ana sucker critical habitat in the Project area would be required to be mitigated similar to the proposed Project as they would occur on federal lands under the jurisdiction of the FS. Therefore, cumulative impacts to Santa Ana sucker critical habitat would be minimal. Under Alternative 6 this impact would not contribute to create a cumulative impact.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Project could result in the loss of California condors. (Impact B-14)</td>
<td>The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse because construction activities have the potential to impact and result in the loss of California condors. Therefore, Impacts to California condors would be cumulatively adverse and unavoidable.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No impact under Alt 6
### Table ES-3. Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures

<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tehachapi</strong></td>
<td><strong>Table of Direct, Indirect, and Mitigation Measures</strong></td>
<td><strong>The Project would disturb nesting southwestern willow flycatchers, least Bell's vireos, yellow-billed cuckoos, or their habitat. (Impact B-15)</strong></td>
<td><strong>B-1a, B-1b, B-2, B-3a, B-6, AQ-1a, H-1a</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project would result in the loss of coastal California gnatcatchers. (Impact B-16)</strong></td>
<td><strong>The Project would result in the loss of critical and/or occupied habitat of the coastal California gnatcatcher. (Impact B-17)</strong></td>
<td><strong>B-1h, AQ-1a</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project could result in the disturbance to nesting Swainson's hawks. (Impact B-18)</strong></td>
<td><strong>The Project could result in the disturbance to nesting Swainson's hawks. (Impact B-19)</strong></td>
<td><strong>B-1a, B-1b, B-3a, AQ-1a</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project could result in the electrocution of State and/or federally protected birds. (Impact B-20)</strong></td>
<td><strong>The Project could result in collision with overhead wires by State and federal protected birds. (Impact B-21)</strong></td>
<td><strong>B-22</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project could result in disturbance to Mohave ground squirrels. (Impact B-22)</strong></td>
<td><strong>The Project could result in disturbance to Mohave ground squirrels. (Impact B-23)</strong></td>
<td><strong>B-1a, B-1b, AQ-1a, H-1a</strong></td>
</tr>
<tr>
<td><strong>Effects on a candidate, Forest Service sensitive, or special-status species</strong></td>
<td><strong>The Project would result in the loss of candidate, Forest Service Sensitive, or special-status plant species. (Impact B-23)</strong></td>
<td><strong>The Project could result in mortality or injury of, and loss of nesting habitat for southwestern pond turtles. (Impact B-24)</strong></td>
<td><strong>B-1a, B-1b, B-3a, B-12, AQ-1a, H-1a, H-1b</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project could result in injury or mortality of, and loss of habitat for, two-striped garter snakes and south coast garter snakes. (Impact B-25)</strong></td>
<td><strong>The Project could result in injury or mortality of, and loss of habitat for, Coast Range newts. (Impact B-26)</strong></td>
<td><strong>B-1a, B-1b, B-3a, AQ-1a, H-1a, H-1b</strong></td>
</tr>
<tr>
<td></td>
<td><strong>The Project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species. (Impact B-27)</strong></td>
<td><strong>The Project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species. (Impact B-28)</strong></td>
<td><strong>B-27</strong></td>
</tr>
</tbody>
</table>

**Final EIS**

**ES-21**

**September 2010**
<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Project could disturb wintering mountain plovers. (Impact B-28)</td>
<td>The incremental effect of the proposed Project, when combined with the effects of other past and reasonably foreseeable projects, would be adverse, because the combined impact substantially reduces the total amount of suitable wintering habitat in the region. The impacts to wintering mountain plovers would be considered cumulatively adverse and unavoidable.</td>
<td>None recommended</td>
<td></td>
</tr>
<tr>
<td>The Project would result in the loss of occupied burrowing owl habitat. (Impact B-29)</td>
<td>The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because construction activities would result in loss of suitable and possibly occupied California spotted owl habitat in the Northern and Southern regions of the Project. Construction-related impacts to occupied burrowing owl habitat would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-3a, AQ-1a, B-29: ImplementCDFG protocol for burrowing owls</td>
<td></td>
</tr>
<tr>
<td>The Project would result in the loss of occupied California spotted owl habitat. (Impact B-30)</td>
<td>The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because construction activities would result in loss of suitable and possibly occupied California spotted owl habitat in the Central Region of the Project. The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because construction activities would result in loss of suitable and possibly occupied California spotted owl habitat in the Central Region of the Project. Construction-related impacts to occupied California spotted owl habitat would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-3a, AQ-1a, B-30: Conduct pre- and during construction nest surveys for spotted owls</td>
<td></td>
</tr>
<tr>
<td>The Project could disturb nesting California spotted owls. (Impact B-31)</td>
<td>The Project construction activities could potentially result in disturbance of nesting California spotted owls in the Central Region of the Project. Implementation of APMs BIO-2 and BIO-4 through BIO-6 and Mitigation Measures B-1b, B-30, and AQ-1a would reduce these impacts. Therefore, cumulative impacts of the Project to nesting California spotted owls would be minimal.</td>
<td>None recommended</td>
<td></td>
</tr>
<tr>
<td>The Project could disrupt avian &quot;species of special concern&quot;. (Impact B-32)</td>
<td>The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because construction activities would take place within or adjacent to habitats that are important for nesting avian Species of Special Concern in southern California. Construction-related impacts to nesting avian species of special concern would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, B-5, AQ-1a</td>
<td></td>
</tr>
<tr>
<td>The Project could result in mortality of, and loss of habitat for, special-status bat species. (Impact B-33)</td>
<td>The Project combined with other past and foreseeable future actions would be adverse, because the acreage of suitable roosting habitat in the region would be substantially reduced.</td>
<td>B-1a, B-1b, B-2, B-3a, AQ-1a, B-33a: Maternity colony or hibernaculum surveys for roosting bats</td>
<td></td>
</tr>
<tr>
<td>The Project could result in transmission line strikes by special-status bat species. (Impact B-34)</td>
<td>The frequency of transmission line strikes by special-status bats species is expected to be quite low despite these cumulative effects, due to the ability of these bat species to detect and avoid transmission lines during echolocation. Therefore, the cumulative impacts of transmission line strikes on special-status bat species would be minimal.</td>
<td>None recommended</td>
<td></td>
</tr>
<tr>
<td>The Project could result in mortality of, and loss of habitat for, special-status mammals. (Impact B-35)</td>
<td>The proposed Project would result in the loss of habitat for northern San Diego pocket mouse, southern grasshopper mouse, and San Diego black-tailed jackrabbit. Construction-related impacts to special-status mammals would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, AQ-1a</td>
<td></td>
</tr>
<tr>
<td>The Project could result in the mortality of San Diego desert woodrats. (Impact B-36)</td>
<td>The Project construction activities could potentially result in disturbance of nesting California spotted owls in the Central Region of the Project. The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because the impact substantially reduces the acreage of suitable habitat in the region. The impacts to San Diego desert woodrats would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, AQ-1a</td>
<td></td>
</tr>
<tr>
<td>The Project could result in the mortality of American badgers. (Impact B-37)</td>
<td>The proposed Project would impact a small amount of suitable habitat for American badgers in the Northern and Southern Regions. This impact would be cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, AQ-1a, B-37: Conduct focused surveys for San Diego desert woodrats and passively relocate during the non-breeding season</td>
<td></td>
</tr>
<tr>
<td>The Project could result in forest fragmentation, habitat degradation, and other impacts to the species of special concern. (Impact B-38)</td>
<td>The proposed Project would result in the loss of habitat for Federation Project area. The incremental effect of the proposed Project, when combined with the effects created by other past and reasonably foreseeable projects, would be adverse, because the impact substantially reduces the acreage of suitable habitat in the region. The impacts to San Diego desert woodrats would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, AQ-1a, H-1a</td>
<td></td>
</tr>
<tr>
<td>Effects on federally protected wetlands</td>
<td>Though impacts to wetlands from the proposed Project are anticipated to be minor based on the acres anticipated to be affected, the impacts to wetlands habitats have the potential to combine with similar impacts of other projects. Therefore, impacts to wetland habitats would be considered cumulatively adverse and unavoidable.</td>
<td>B-1a, B-1b, B-2, B-3a, B-12, AQ-1a, H-1a</td>
<td></td>
</tr>
<tr>
<td>Infringement with native fish or wildlife movements, corridors, or nursery sites</td>
<td>The cumulative impacts of transmission lines on bird and bat migratory corridors resulting from the Project and other past, present, and reasonably foreseeable projects will be minimal.</td>
<td>None recommended</td>
<td></td>
</tr>
<tr>
<td>Corneal noise could result in disturbance to wildlife. (Impact B-41)</td>
<td>Corneal noise from past, present, and future projects (including the proposed Project) is not expected to combine with noise from other projects such that impacts would not be cumulative in nature.</td>
<td>None recommended</td>
<td></td>
</tr>
</tbody>
</table>
### Table ES-3. Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures

<table>
<thead>
<tr>
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<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Contamination and Hazards</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result in soil contamination, including flammable or toxic gases, during construction</td>
<td>Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities. (Impact E-1)</td>
<td>Since any spills of contaminated material would be cleaned, soil or groundwater contamination would not occur and this impact would not have the potential to combine with impacts of other projects.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Result in mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors</td>
<td>Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites. (Impact E-2)</td>
<td>Since any contamination encountered would be removed and/or remediated prior to Project construction, this impact would not have the potential to combine with impacts of other projects.</td>
<td>E-2a: Perform Phase I ESAs along existing transmission line ROWs</td>
</tr>
<tr>
<td></td>
<td>Landfill gas and/or natural gas located near active, inactive, or abandoned oil wells could be encountered during excavation or grading. Resulting in explosions or exposure of workers to toxic gases. (Impact E-3)</td>
<td>No concurrent projects located immediately adjacent to the portions of the route located near landfills or oil wells have been identified. Therefore, the cumulative impact would be minimal.</td>
<td>E-3a: Detect and remove MEC from access roads (Alts 4C, 4C Modified, &amp; 4D Only)</td>
</tr>
<tr>
<td></td>
<td>Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading. (Impact E-4)</td>
<td>Could produce a combined effect that would potentially result in soil or groundwater contamination. However, mitigation would be included for the proposed Project to require identification and disposal of potentially impacted soil. Therefore, the cumulative impact would be minimal.</td>
<td>E-4b: Detect and remove MEC from access roads (Alts 4C, 4C Modified, &amp; 4D Only)</td>
</tr>
<tr>
<td></td>
<td>Excavation or grading could result in mobilization of existing soil contamination or encountering ordnance from known munitions testing and disposal sites. (Impact E-5) (Alts 4C, 4C Modified, &amp; 4D Only)</td>
<td>Soil testing and mitigation required for this impact would also be required for any past, present or reasonably foreseeable projects. Therefore, cumulative impacts resulting from encountering ordnance from known munitions testing and disposal sites would be minimal.</td>
<td>E-5a: Provide ordnance recognition training (Alts 4C, 4C Modified, &amp; 4D Only)</td>
</tr>
<tr>
<td></td>
<td>Cause contamination of soils or groundwater within the Project area during operation of the Project, resulting in exposure of workers and/or the public to contaminated or hazardous materials</td>
<td>Since measures would be in place to greatly reduce the likelihood of a release as a result of proposed Project activities, the cumulative impact would be minimal.</td>
<td>None recommended</td>
</tr>
<tr>
<td><strong>Geology, Soils, and Paleonontology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known mineral and/or energy resources</td>
<td>Project activities could interfere with access to known energy resources. (Impact G-1)</td>
<td>Construction of the proposed Project would preclude other projects from being implemented concurrently in the same location. The proposed Project impacts would not have the potential to combine with similar effects from other projects.</td>
<td>G-1: Coordination with oil field operations</td>
</tr>
<tr>
<td>Triggering or acceleration of geologic processes, such as landslides, soil erosion, or loss of topsoil, during construction</td>
<td>Erosion could be triggered or accelerated due to construction activities. (Impact G-2)</td>
<td>The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented in the same areas at the same time as the Project. However, construction of the Project would preclude other projects from being implemented concurrently in the same location. Therefore impacts would not be cumulative in nature.</td>
<td>H-1a: Implement an Erosion Control Plan and demonstrate compliance with water quality permits</td>
</tr>
<tr>
<td></td>
<td>Soil or groundwater contamination could result from an accidental spill during operation. (Impact E-5)</td>
<td></td>
<td>Non recommended</td>
</tr>
</tbody>
</table>

*(Final EIS ES-23* September 2010)
Table ES-3. Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures

<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Direct or Indirect Project Effects</th>
<th>Potential Cumulative Effect</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to potential risk of loss or injury due to</td>
<td>Project structures could be damaged by surface fault rupture at crossings of active faults exposing people or</td>
<td>Failure of Project structures and adjacent structures would combine to result in an adverse</td>
<td>G-4: Avoid placement of Project structures within active fault zones</td>
</tr>
<tr>
<td>earthquake-related ground rupture</td>
<td>structures or structures to hazards. (Impact G-4)</td>
<td>impact where such structures are in close proximity to other structures or people located</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>adjacent to the Project route along Segments 5, 7, 8 and the southern portion of Segment 11.</td>
<td></td>
</tr>
<tr>
<td>Exposure to potential risk of loss or injury due to</td>
<td>Project structures could be damaged by seismically induced groundshaking</td>
<td>Failure of Project structures and adjacent structures due to seismically induced ground</td>
<td>G-3: Reduce effects of groundshaking</td>
</tr>
<tr>
<td>seismically induced groundshaking and/or ground</td>
<td>Failure of Project structures and adjacent structures due to seismically induced ground shaking and ground</td>
<td>failure would combine to result in an adverse impact where such structures are in close</td>
<td>G-5a: Conduct geotechnical investigations for liquefaction</td>
</tr>
<tr>
<td>failure exposing people or structures to hazards.</td>
<td>failure would combine to result in an adverse impact where such structures are in close proximity to other</td>
<td>proximity to other structures or people such as other parallel and crossing transmission</td>
<td></td>
</tr>
<tr>
<td></td>
<td>structures or structures to hazards. (Impact G-5)</td>
<td>lines and substations, and residential and commercial developments located adjacent to the</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Project route along Segments 5, 7, 8 and the southern portion of Segment 11. However, due</td>
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<tr>
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<td></td>
<td>to similar policies regarding construction within active fault zones that have been imposed</td>
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<tr>
<td></td>
<td></td>
<td>on past projects and that will likely be imposed on reasonably foreseeable projects, this</td>
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<tr>
<td></td>
<td></td>
<td>cumulative impact would be minimized.</td>
<td></td>
</tr>
<tr>
<td>Exposure to potential risk of loss or injury due to</td>
<td>Project structures could be damaged by ground settlement along the tunnel</td>
<td>Impact would combine with other past, present and reasonably foreseeable projects, however,</td>
<td>G-5: Conduct geotechnical analysis of settlement potential during design and implement a</td>
</tr>
<tr>
<td>corrosive soils or other unsuitable soils are present</td>
<td>Project structures could be damaged by problematic soils exposing people or structures to hazards. (Impact G-6)</td>
<td>these cumulative impacts would not be substantial. (All 5 Only)</td>
<td>Subsidence Monitoring Program during construction to protect against ground settlement</td>
</tr>
<tr>
<td></td>
<td>Same as Impact G-5.</td>
<td></td>
<td>(All 5 Only)</td>
</tr>
<tr>
<td>Damage to Project structures due to slope failure</td>
<td>Transmission lines structures could be damaged by landslides, earth flows, or debris slides, during operation</td>
<td>Should resources be discovered during construction of current and future projects, they</td>
<td>G-3: Conduct geotechnical studies to assess soil characteristics and use appropriate</td>
</tr>
<tr>
<td></td>
<td>(Impact G-7)</td>
<td>would be subject to legal requirements designed to protect them, thereby minimizing the</td>
<td>foundation design</td>
</tr>
<tr>
<td>Destruction of unique paleontological resources</td>
<td>Grading and excavation could destroy paleontologic resources.</td>
<td></td>
<td>None recommended</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water quality violations, waste discharges, or</td>
<td>Construction activities would degrade water quality through erosion and sedimentation. (Impact H-1)</td>
<td>Would produce a combined effect that would degrade surface water quality through erosion</td>
<td>H-1a: Implement an Erosion Control Plan and demonstrate compliance with water quality</td>
</tr>
<tr>
<td>polluted runoff</td>
<td></td>
<td>and sedimentation, which would be cumulatively adverse and unavoidable. The contribution of</td>
<td>permits</td>
</tr>
<tr>
<td></td>
<td>Construction activities would degrade water quality through the accidental release of potentially harmful or</td>
<td>the proposed Project to this impact is small and does not contribute considerably to</td>
<td>H-1b: Dry weather construction</td>
</tr>
<tr>
<td></td>
<td>DISHWASHING AND WASTE DISPOSAL ACTIVITIES</td>
<td>cumulative effects.</td>
<td>B-2: Implement RCA Treatment Plan</td>
</tr>
<tr>
<td></td>
<td>Operation and maintenance activities would degrade water quality through the accidental release of possibly</td>
<td>Would produce a combined effect that would degrade surface water quality through the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>potentially harmful or hazardous materials. (Impact H-3)</td>
<td>accidental release of potentially harmful or hazardous materials, which would be</td>
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<tr>
<td></td>
<td></td>
<td>cumulatively adverse and unavoidable. The contribution of the proposed Project to this</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impact is small and does not contribute considerably to cumulative effects.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction activities would degrade water quality through the accidental release of potentially harmful or</td>
<td>Would produce a combined effect that would degrade surface water quality through the</td>
<td>H-1a: Implement a Surface Water Quality Control Plan</td>
</tr>
<tr>
<td></td>
<td>hazardous materials. (Impact H-2)</td>
<td>accidental release of potentially harmful or hazardous materials, which would be</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>cumulatively adverse and unavoidable. The contribution of the proposed Project to this</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impact is small and does not contribute considerably to cumulative effects.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>None recommended</td>
<td></td>
</tr>
<tr>
<td>Situations, erosion, or other flood-related damage</td>
<td>Discharge of contaminated groundwater during dewatering operations would degrade surface water quality.</td>
<td>Would not likely produce a combined effect that would degrade surface water quality through</td>
<td></td>
</tr>
<tr>
<td>from impeding or redirecting flood flows through the</td>
<td>(Impact H-5) (Alts 5 &amp; 7 Only)</td>
<td>discharge of contaminated groundwater. (Alts 5 &amp; 7 Only)</td>
<td></td>
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<tr>
<td>placement of a structure in a stream or flood</td>
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<td>For the Project this impact would be reduced to the extent feasible with implementation of</td>
<td></td>
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<tr>
<td>hazard area</td>
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<td>mitigation measures, as would be required for present and foreseeable residential</td>
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<td></td>
<td></td>
<td>development projects. Therefore, the cumulative impact would be minimized.</td>
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<td></td>
<td>G-1a: Conduct geological surveys for landslides and protect against slope instability</td>
</tr>
<tr>
<td>Damage from inundation by mudflow</td>
<td>Project structures would be inundated by mudflow. (Impact H-5)</td>
<td>Would produce a combined effect that would increase the potential for Project structures to</td>
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<td></td>
<td></td>
<td>be inundated by mudflow. The contribution of the proposed Project to this impact is small</td>
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<tr>
<td></td>
<td></td>
<td>and does not contribute considerably to cumulative effects.</td>
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<tr>
<td>Land Use</td>
<td></td>
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</tr>
<tr>
<td>Preclude a permitted land use, or create a distance</td>
<td>Construction of the Project would temporarily disrupt, displace, or preclude existing residential land</td>
<td>No projects would be constructed at the same time as the proposed Project that would affect</td>
<td>L-1a: Construction liaison – Property owners</td>
</tr>
<tr>
<td>that would diminish the function of a particular</td>
<td>uses. (Impact L-1)</td>
<td>the residential land uses within 1,000 feet of the proposed Project’s construction-related</td>
<td>L-1b: Advance notification of construction – Property owners</td>
</tr>
<tr>
<td>land use</td>
<td></td>
<td>activities.</td>
<td>L-1c: Quarterly construction updates – Property owners</td>
</tr>
</tbody>
</table>

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### Table ES-3. Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative, Effects, and Mitigation Measures

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Conflict with any applicable federal, State, or local land use plans, goals, or policies</td>
<td>Construction, operation or maintenance of the Project would conflict with relevant federal, State, or local land use plans, goals, or policies. (Impact L-5)</td>
<td>The proposed Project would be consistent with USDA Forest Service land use policies and local land use plans as they relate to transmission lines and associated facilities and would be authorized by the USDA Forest Service through its permitting and Forest Plan amendment prior to construction. Additionally, the proposed Project would implement mitigation measures to avoid conflicts with any applicable federal, State or local land use plans, goals, or policies, and under the CPUC’s General Order Number 131-D, SCE is required to comply with State and federal laws and coordinate with local jurisdictions. Cumulative impacts would be minimal. (Alts 2,3,5,6,7) The construction, operation and maintenance of Alternative 4, Routes A through D, in combination with other proposed energy projects, would result in an adverse and unavoidable cumulative impact to non-residential uses. Along Segment 8A of Alternative 5, construction could require the take of commercial and services uses via eminent domain. If eminent domain is required for construction, operation and maintenance of this alternative, it would result in an adverse and unavoidable cumulative impact to non-residential uses.</td>
<td>None available</td>
</tr>
<tr>
<td>Noise</td>
<td>Substantial temporary or periodic increase in ambient noise levels within the vicinity of sensitive receptors above existing levels. (Impact N-1)</td>
<td>Construction noise would be substantially disturb sensitive receptors.</td>
<td>N-1a: Implement Best Management Practices for construction noise N-1b: Avoid sensitive receptors during mobile construction equipment use</td>
</tr>
<tr>
<td></td>
<td>Construction noise levels would violate local standards. (Impact N-2)</td>
<td>Could produce a combined effect that would potentially violate local standards. The contribution of the proposed Project to this impact would be adverse and unavoidable.</td>
<td>N-2a, N-2b, L-2b</td>
</tr>
<tr>
<td></td>
<td>Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations. (Impact N-3)</td>
<td>Could produce a combined effect that would potentially increase permanent noise levels along the ROW. The contribution of the proposed Project to this impact would be adverse and unavoidable.</td>
<td>None available</td>
</tr>
<tr>
<td></td>
<td>Operational noise levels would violate local standards. (Impact N-4)</td>
<td>Could produce a combined effect that would potentially violate local standards. The contribution of the proposed Project to this impact would be adverse and unavoidable.</td>
<td>None available</td>
</tr>
<tr>
<td>Public Services and Utilities</td>
<td>Increased demand for public services that cannot be readily met by existing public service providers and facilities. (Impact PSU-1)</td>
<td>Emergency services would be needed if an accident or other emergency incident occurs at a construction site. (Impact PSU-1)</td>
<td>PSU-1a: Review SCE’s Fire Management Plan PSU-1b: Review of construction methods by county fire departments PSU-1c: Practice safe welding procedures PSU-1d: Fire preventative construction equipment requirements</td>
</tr>
</tbody>
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Table ES-3. Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures

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<tr>
<td>Impacts or interference with existing public services emergency access</td>
<td>Temporary lane closures during the construction period would interfere with emergency response vehicles. (Impact PSU-2)</td>
<td>Could produce a combined effect that would interfere with the regular flow of traffic, and limit the ability of emergency response teams to respond to a call. The contribution of the proposed Project to this impact is minimal.</td>
<td>T-1a: Prepare Traffic Control Plan</td>
</tr>
<tr>
<td></td>
<td>Construction and operation would impede emergency aircraft response services. (Impact PSU-3)</td>
<td>Interference with aerial operations; Project’s contribution would be minimal, as all flight operations would be restricted by FAA rules.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Result in a major reduction or interruption of existing utility systems or cause a collocation accident</td>
<td>Utility systems would be temporarily disrupted during the construction period (Impact PSU-4)</td>
<td>Could produce a combined effect that would cause multiple utility outages and disruptions to the public, however, if a disruption is known to be unavoidable, SCE would coordinate with the affected jurisdiction’s and service providers in order to avoid multiple or extended disruptions, in accordance with Mitigation Measures PSU-4. Therefore, the Project’s contribution to this cumulative impact would be minimal.</td>
<td>PSU-4: Notification of utility service interruption</td>
</tr>
<tr>
<td></td>
<td>Public Works maintenance yards would be disrupted during the construction period. (Impact PSU-5)</td>
<td>Opportunity for the proposed Project to contribute to this impact is small and does not contribute considerably to cumulative effects.</td>
<td>PSU-5: Notification of public service interruption</td>
</tr>
<tr>
<td>Substantially change the ability of water treatment wastewater treatment, or solid waste facilities to adequately supply water and accommodate solid waste and wastewater</td>
<td>Project construction would temporarily increase water use and Project operation would contribute to increased long-term water consumption. (Impact PSU-6)</td>
<td>Could produce a combined effect that would put a strain on the existing water supply. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.</td>
<td>None recommended</td>
</tr>
<tr>
<td></td>
<td>Additional wastewater would be generated during Project construction and operation. (Impact PSU-7)</td>
<td>Project construction would temporarily increase water use and Project operation would contribute to increased long-term water consumption. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.</td>
<td>None recommended</td>
</tr>
<tr>
<td></td>
<td>Additional solid waste would be generated during Project construction and operation. (Impact PSU-8)</td>
<td>Not expected to produce a combined effect that would exceed the capacity of active disposal sites.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Conflict with or be unable to adhere to federal, State, and/or local laws, regulations, or standards relating to solid waste</td>
<td>The amount of waste material recycled during construction activities would not adhere to State standards. (Impact PSU-9)</td>
<td>The proposed Project would comply with standards and regulations relating to solid waste. As such, the proposed Project would not contribute to the cumulative impact.</td>
<td>PSU-9: Recycling solid waste</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>Operation and maintenance activities would affect property values along the Project alignment. (Impact S-1)</td>
<td>The Project area is experiencing rapid rates of growth and residential development. This growth trend indicates that the Project area is consistently becoming a more desirable place to site homes and businesses, which typically leads to an increase in property values. However, regardless of any potential increase in private property values, the proposed Project would have the potential to adversely affect property values.</td>
<td>None recommended</td>
</tr>
<tr>
<td></td>
<td>Construction activities would cause a temporary decrease in revenues for agricultural landowners. (Impact S-2)</td>
<td>The proposed Project may result in temporarily decreased agricultural revenues during construction; this impact could combine with similar effects of other projects if such projects were to occur at the same time and in the same vicinity. It is considered highly unlikely that projects with construction impacts similar to the proposed Project’s construction impacts would occur at the same time and in the same vicinity as under the proposed Project. The proposed Project is not expected to permanently remove agricultural areas, including farmland, from continuance of present usage.</td>
<td>AG-1: Coordinate construction activities with agricultural landowners</td>
</tr>
<tr>
<td>Revenue decrease for agricultural landowners</td>
<td>Project activities would affect public agency revenues. (Impact S-3)</td>
<td>Project activities would not result in a permanent adverse change in public resource revenue, although Project construction would likely result in a loss of Forest Service revenue as a result of decreased Adventure Pass sales related to access restrictions on ANF lands. The Project’s permanent incremental contribution to the overall revenue impacts due to combined operation of projects in the Project area would likely result in beneficial revenue impacts to public agencies through property taxes, sales taxes, and other forms of public revenue.</td>
<td>R-1a: SCE shall compensate ANF for lost income from Adventure Pass sales due to recreation area closures associated with the Project</td>
</tr>
<tr>
<td>Public agency revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic and Transportation</td>
<td>Closure of roads or reduction of travel lanes</td>
<td>Closures of roads to through traffic or reduction of travel lanes would result in substantial congestion. (Impact T-1)</td>
<td>All projects requiring work within RCMAs of public streets and highways are required to obtain encroachment permits. In order for a cumulative impact to occur, lane closures from different projects would have to occur at the same time and on the same road or a connecting road within close proximity (up to two miles) to the lane closure from the proposed Project. Past projects in the Project area would not combine with impacts of the proposed Project because construction of those projects is complete and lane closures associated with such construction would no longer be necessary. Therefore, it is considered unlikely that this impact of the proposed Project would combine with similar impacts of other projects to result in a cumulatively adverse impact.</td>
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<td>T-1b: Restrict lane closures</td>
</tr>
<tr>
<td>Unacceptable level of service reduction to vicinity roads</td>
<td>Construction traffic would result in congestion on area roadways. (Impact T-2)</td>
<td>Mitigation measures would effectively reduce the proposed Project’s contribution to a cumulative impact by minimizing the amount of construction traffic on area roadways.</td>
<td>T-2: Prepare Construction Transportation Plan</td>
</tr>
</tbody>
</table>

1 NEPA regulations define effects as including social and economic impacts, and they may be considered significant based on context and intensity.
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<tbody>
<tr>
<td>Restricted access to properties</td>
<td>Underground construction activities would temporarily restrict access to properties. (Impact T-11) (Alt 7 Only)</td>
<td>If other projects required the use of the same public ROW at the same time as the Project, the regulatory agency responsible for issuing the encroachment permit would ensure that work within a public road would not occur simultaneously with the Project to avoid adverse cumulative impacts. (Alt 7 Only)</td>
<td>T-11: Provide continuous access to properties (Alt 5 Only)</td>
</tr>
<tr>
<td>Restrict the movements of emergency vehicles</td>
<td>Construction activities could temporarily interfere with emergency response. (Impact T-3)</td>
<td>Mitigation measures would reduce the proposed Project’s contribution to a cumulative impact by requiring construction activity to be coordinated in advance with emergency service providers to avoid restricting movements of emergency vehicles.</td>
<td>T-1a, T-1b</td>
</tr>
<tr>
<td>Disruption to transit services</td>
<td>Construction activities could temporarily disrupt transit routes. (Impact T-4)</td>
<td>Mitigation measures effectively reduce the proposed Project’s contribution to a cumulative impact by requiring construction activity to be coordinated in advance with school districts and transit providers. Additionally, lane closures associated with the proposed Project would be of very short duration.</td>
<td>T-4: Avoid disruption of bus service</td>
</tr>
<tr>
<td>Disruption to rail traffic</td>
<td>Construction activities would cause a temporary disruption to rail traffic or operations. (Impact T-5)</td>
<td>Compliance with railroad permit requirements would ensure that proposed Project construction activities would not disrupt rail traffic. Other projects would be required to obtain similar permits, thus railroad companies would be able to regulate the timing of potential disruptions and cumulative impacts would not occur.</td>
<td>T-5a, T-5b</td>
</tr>
<tr>
<td>Impediment of pedestrian movements or bike paths</td>
<td>Construction activities could temporarily interfere with the use of pedestrian/bicycle paths. (Impact T-6)</td>
<td>Implementation of mitigation measures would effectively reduce the proposed Project’s contribution to a cumulative impact by requiring establishment of alternative pedestrian and bicycle routes around the proposed Project construction zone for public safety as well as temporary detours for trail users.</td>
<td>T-6: Ensure pedestrian and bicycle circulation and safety</td>
</tr>
<tr>
<td>Reduction in the supply of parking spaces</td>
<td>Construction would result in localized shortages of public parking along the Project ROW. (Impact T-7)</td>
<td>This impact would occur in residential areas during daytime hours when street parking is most ample. It is unlikely that other projects with the potential to eliminate substantial numbers of public parking spaces would be located in close proximity of the proposed Project.</td>
<td>T-7</td>
</tr>
<tr>
<td>Construction would be inconsistent with transportation plans</td>
<td>Construction would conflict with planned transportation projects. (Impact T-8)</td>
<td>The proposed Project would be required to obtain an encroachment permit or other such agreement from the applicable jurisdictional agency and would therefore not conflict with planned transportation projects.</td>
<td>T-8: Avoid conflicts with planned transportation improvements</td>
</tr>
<tr>
<td>Notices to deterioration of road surfaces</td>
<td>Construction vehicles and equipment could damage road RDOMs. (Impact T-9)</td>
<td>Deterioration caused by Project construction traffic would be repaired and would not have the potential to combine with deterioration or damage from other projects.</td>
<td>None recommended</td>
</tr>
<tr>
<td>Visual Resources</td>
<td>Project transmission structures could present an aviation hazard. (Impact T-10)</td>
<td>Final design of all projects with structures greater than 200 feet in height would have to comply with FAA guidelines. Projects located within military flight pathways would be required to submit the project application to the appropriate US Military Branch for review to ensure conflicts would not occur. Compliance with these procedures would ensure that potential impacts from multiple projects would not combine.</td>
<td>T-10b: Notify US Military</td>
</tr>
<tr>
<td>Have a substantial adverse effect on the existing landscape character and visual quality of the site and its surroundings</td>
<td>Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of the landscape views. (Impact V-1)</td>
<td>Ongoing development throughout the cumulative effects area for visual resources would be readily visible throughout the Project area, and would be cumulative in character and visual quality.</td>
<td>V-1: Clean up staging areas, storage areas, marshalling yards, helicopter staging areas, access and spur roads, and structure locations on a regular periodic basis</td>
</tr>
<tr>
<td>For a landscape that currently has no transmission lines, introduction of a new transmission line in a new ROW would adversely affect landscape character and visual quality. (Impact V-2)</td>
<td>New transmission infrastructure in areas that currently do not have such industrial facilities would adversely affect natural-appearing landscape character and visual quality. Also may encourage development of other transmission lines or cross-country infrastructure to develop in a parallel corridor. Development of additional transmission lines along Segment 10 or 4 would increase potential cumulative visual effects such that cumulative impacts would be adverse and unavoidable.</td>
<td>V-2a: Use tubular steel poles instead of lattice steel towers in designated areas</td>
<td></td>
</tr>
<tr>
<td>Vegetative clearing and/or earthwork associated with road improvements and /or relocating locations would adversely affect landscape character and visual quality. (Impact V-4)</td>
<td>With construction of these new transmission lines, it is reasonably foreseeable that additional vegetative clearing would occur further reducing landscape character and visual quality. Impacts would be cumulatively adverse and unavoidable.</td>
<td>V-4a: Construct, operate, and maintain the Project with existing access and spur roads where feasible</td>
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<tr>
<td>Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glare and glare in certain lighting conditions. (Impact V-5)</td>
<td>New materials used in construction of existing and future projects (including the proposed Project) within the Project area previously created and have the potential to produce, respectively, daytime glare and new sources of nighttime light and glare leading to cumulatively adverse visual impacts.</td>
<td>V-4b: Avoid locating new roads in backstop on NFS lands</td>
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<tr>
<td>V-4c: Dispose of excavated materials as prescribed</td>
<td>V-4d: Avoid locating new roads in backstop on NFS lands</td>
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<tr>
<td>V-4d: Avoid locating new roads in backstop on NFS lands</td>
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<tr>
<td><strong>Wilderness and Recreation</strong></td>
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<tr>
<td>Substantially damage scenic resources within a scenic highway viewed or a national scenic trail viewed (including, but not limited to, trees, rock outcroppings, and historic buildings.)</td>
<td>The Project would contribute to the long-term loss or degradation of a scenic highway viewed or scenic trail viewed. (Impact V-6)</td>
<td>Combined with the adverse visual effects of existing transmission lines, Introduction of newer, taller transmission line structures in Segments 6 and 11 in the Center Area (ANF) and in Segment III in the South Area would create a persistent adverse visual effect on scenic highway and scenic trail viewed.</td>
<td>V-2b</td>
</tr>
<tr>
<td></td>
<td>The Project would conflict with established visual resource management plans or landscape conservation plans. (Impact V-7)</td>
<td>Future projects, including the proposed Project, that would upgrade the size of transmission lines or maintain/improve access and spur roads would add to cumulative visual effects resulting in cumulative adverse impacts.</td>
<td>V-2b</td>
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<tr>
<td>Directly or indirectly disrupt or preclude activities in established federal, State, or local recreation areas or wilderness areas.</td>
<td>Construction activities would restrict access to or disrupt activities within established recreational areas. (Impact R-1)</td>
<td>Due to the likely potential for this impact to affect the same recreational resource(s) at the same time, Impact R-1 would be cumulatively adverse and unavoidable.</td>
<td>R-1a through R-1d</td>
</tr>
<tr>
<td></td>
<td>Operation and maintenance activities would restrict access to or disrupt activities within established recreational areas. (Impact R-2)</td>
<td>Although the operation of other projects could preclude certain recreational areas from use, ongoing development and planned urban expansion in the North and South Regions include new recreational areas and resources to accommodate growing population. Project operational activities in the ANF would not noticeably preclude recreational or wilderness areas, such that cumulative impacts would be minimal.</td>
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<tr>
<td><strong>Wildfire Prevention and Suppression</strong></td>
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<tr>
<td>Substantially contribute to the long-term loss or degradation of the factors that contribute to the value of federal, State, local, or private recreational facilities or wilderness areas.</td>
<td>Project activities (construction or operation and maintenance) would cause or contribute to the degradation of one or more of the four primary characteristics of a designated Wilderness Area, as defined by the Wilderness Act, Public Law 88-577 (16 U.S.C. 1131-1136). (Impact R-3)</td>
<td>The proposed Project would contribute to degradation of the San Gabriel WA’s characteristic of “solitude and unconfined recreation,” due to the sensitivity and uniqueness of designated WAs, any other project that would occur near that San Gabriel WA and would have the potential to degrade any of the WA’s four primary characteristics would be adverse. However, it is considered highly unlikely that one such project would have the potential to cause or contribute to the degradation of a primary characteristic of the San Gabriel WA in the same way and/or during the same timeframe as the proposed Project. Therefore, the cumulative impact would be minimal.</td>
<td>R-1a through R-1d, R-1e, R-2b</td>
</tr>
<tr>
<td></td>
<td>The Project would cause or contribute to degradation of the Pacific Crest National Scenic Trail (PCT). (Impact R-4)</td>
<td>The proposed Project would traverse the PCT three times and as such, the contribution to the cumulative impact is substantial. Similar impacts are expected to be associated with other development projects along the PCT. Cumulative effect would be adverse and unavoidable.</td>
<td>R-1a, R-1d, R-1e</td>
</tr>
<tr>
<td></td>
<td>The Project would contribute to degradation of OHV-Highway Vehicle (OHV) trails or Open Riding Areas, or would result in a loss of recreational opportunity for OHV users. (Impact R-5)</td>
<td>It is expected that the Forest Service will continue to provide designated OHV areas in the Forest and as such, if present or future projects in the ANF require OHV roads to be upgraded, they will be returned to original condition after project construction, thereby avoiding long-term loss of degradation. The Project contribution to this cumulative impact is minimal.</td>
<td>R-5</td>
</tr>
<tr>
<td></td>
<td>The Project would facilitate unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational opportunities. (Impact R-6)</td>
<td>The proposed Project would require that existing access roads be improved and new roads be constructed to provide access for construction and maintenance vehicles to all transmission towers associated with the Project. Road improvements in the ANF could lead to unmanaged recreation and would have a substantial influence on the potential cumulative impact due to the fact that unmanaged recreation is a recognized threat to the integrity of designated Inventoried Roadless Areas and Wilderness Areas, which are considered to be particularly sensitive. This cumulative impact would be adverse and unavoidable.</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse effects on fire prevention and suppression activities.</strong></td>
<td>Construction and/or maintenance activities would reduce the effectiveness of wildfire control. (Impact F-1)</td>
<td>Existing transmission line maintenance activities that block roads within the ANF could combine to seriously delay firefighting operations during the fire season in the event of a fire in the ANF. However, Mitigation Measure F-1 (Prepare wildland traffic control plans) would reduce this impact of the Project and ensure access for emergency response vehicles. Therefore, the Project’s contribution to this cumulative impact would be minimal.</td>
<td>R-1f: Prepare wildland traffic control plans</td>
</tr>
<tr>
<td></td>
<td>The presence of new or higher overhead transmission lines would reduce the effectiveness of firefighting. (Impact F-2)</td>
<td>The addition of the aboveground transmission lines on towers of substantially higher maximum height than existing ones through the Tehachapi Pass would only marginally reduce the effectiveness of firefighting activities within the Pass; by limiting aerial operations and would therefore not combine with other past, present, and reasonably foreseeable projects in the area to result in a cumulative impact. (Alts 2, 3, 5, 6, 7)</td>
<td>None recommended</td>
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| Exposure of communities, firefighters, personnel, and/or natural resources to an increased risk of wildfire | Construction and/or maintenance activities would increase the risk of wildfires (Impact F-3) | Mitigation measures would restrict Project-related activities to times during which Santa Ana winds are not blowing, which would limit the severity of construction and maintenance-related fires. Mitigation measures would substantially reduce the risk of Project-related wildfire ignition, and this effect would therefore not combine with other construction projects in the area to result in a cumulatively adverse impact. The cumulative effect would be minimal with mitigation incorporated. | F-3a: Revise SCE’s Fire Management Plan for maintenance activities  
F-3b: Cease work during Red Flag Warning events  
F-3c: Ensure open communication pathways  
F-3d: Remove hazards from the work area  
F-3e: Comply with non-smoking policy on PH-NHPA lands  
F-3f: Share costs for ARFF  
F-3g: Provide transmission line safety training to ARFF staff |
| Presence of the overhead transmission line would increase the risk of wildfire, and compromise firefighter safety. (Impact F-4) | The proposed Project would increase the risk of construction and maintenance personnel injury or death in the event of an uncontrolled wildland fire; however, this impact would be minimized with implementation of recommended mitigation measures. This effect would not combine with other past, present, or reasonably foreseeable projects to result in a cumulative impact, except for the proposed Project and alternatives would not combine with other past, present, or reasonably foreseeable projects to result in a cumulative impact, except for the rerouted portions of Alternative 4. The rerouted portions of Alternative 4 would create a new source of potential wildfire ignition for the life of the Project in a high-risk landscape, and even a single wildfire ignition could result in a devastating wildfire during extreme weather conditions. This effect related only to the rerouted portion of Alternative 4 would therefore combine with other projects to result in a cumulative impact. | None recommended for all alternatives, except Alt 4.  
F-5: Share costs for fuels management (Alt 4 Only) |
| Increased ignition potential and rate of fire spread | Project activities would introduce non-native plants, which would contribute to an increased rate of fire spread. (Impact F-6) | Because invasive plant introductions to wildland areas is reasonably foreseeable despite best efforts at mitigation, and because Mitigation Measures B-3a (Prepare and implement a Weed Control Plan) would not completely eliminate the risk of non-native species introduction, the incremental effects of the proposed Project on non-native species introduction that adversely affect wildfire behavior are considered cumulatively considerable. This impact would be cumulatively adverse and unavoidable. | B-3a: Prepare and implement a Weed Control Plan |

### Electrical Interference and Hazards

| Harmful interference with radio/television/communications/electronic equipment | The Project would cause radio, television, communications, or electronic equipment interference. (Impact EIH-1) | The contribution of the proposed Project to this impact would not be additive or cumulative in nature. | EIH-1a: Limit conductor surface electric gradient  
EIH-1b: Document and resolve electronic interference complaints |
| Induced currents or shock hazards to the public | The Project would cause induced currents and shock hazards in joint use corridors. (Impact EIH-3) | The contribution of the proposed Project to this impact would not be additive or cumulative in nature. | EIH-2: Implement grounding measures |
| Interference with cardiac pacemakers | Project operation would result in electric fields that would affect cardiac pacemakers. (Impact EIH-3) | The contribution of the proposed Project to this impact would not be additive or cumulative in nature. | None recommended |
| Introduction of hazards related to wind or earthquakes | Project structures would be affected by wind and earthquakes. (Impact EIH-4) | The proposed Project would be constructed on steel lattice towers or tubular steel poles, where failure as a result of extreme wind conditions would be highly unlikely. Overhead transmission lines are designed for dynamic loading under variable wind conditions that generally exceed earthquake loads. The contribution of the proposed Project to this impact would not be additive or cumulative in nature. | None recommended |
1. Introduction

This Final Environmental Impact Statement (EIS) has been prepared by the USDA Forest Service as Lead Agency under the National Environmental Policy Act (NEPA). This EIS is intended to inform the public and meet the needs of the federal agencies that will consider issuing approvals and permits for the Tehachapi Renewable Transmission Project (TRTP, or “proposed Project”), as proposed by Southern California Edison (SCE). The proposed Project, which is described in full detail in Chapter 2 of this document (Description of Alternatives, including the Proposed Project), would connect the Tehachapi Wind Resource Area (TWRA) in southern Kern County with SCE’s transmission system in order to deliver power produced in the TWRA to utility load centers.

The primary components of the proposed Project include: (1) Construct new 500-kV transmission lines; (2) Construct new single-circuit 220-kV transmission lines; (3) Rebuild existing 220-kV lines to 500-kV standards; (4) Rebuild existing single-circuit transmission lines to double-circuit transmission lines; (5) Relocate several existing 66-kV subtransmission lines; (6) Construct a new 500-kV substation; and (7) Upgrade five existing substations. Approximately 42 miles of the proposed Project would be located on National Forest System (NFS) lands in the Angeles National Forest (ANF) and up to approximately 16 miles of the proposed transmission facilities may require right-of-way (ROW) expansion on ANF lands.

Because the proposed transmission line would traverse approximately 42 miles of NFS lands, SCE filed an application for a Special Use authorization with the USDA Forest Service on June 29, 2007, seeking permission for construction, operation, and maintenance of the proposed Project on NFS lands in the ANF. Because the Project also crosses lands controlled by the US Army Corps of Engineers (USACE), the USACE has elected to participate as a Cooperating Agency for the NEPA review of the Project. Approximately 6.4 miles of the proposed Project alignment would be located on land controlled by the USACE (in the vicinity of Santa Fe Dam and Whittier Narrows in Los Angeles County (Segments 7 and 8). In addition, one of the proposed helicopter sites (SCE#9) is located on USACE controlled lands at the Fish Canyon Rifle Range in Azusa. Some of the USACE lands are leased or otherwise outgranted for specific purposes, such as long-term leases for use and management for public recreational purposes; however, the USACE has ultimate control and responsibility over those lands. The USACE has separate regulatory jurisdiction pursuant to Section 404 of the Clean Water Act for the discharge of fill or dredged material into waters of the United States (see Section 1.3).

On June 29, 2007, SCE also submitted Application No. A.07-06-031 to the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) to allow the construction and operation of the proposed Project on non-federal lands. With the CPCN application, SCE also submitted its Proponent’s Environmental Assessment (PEA) for the proposed Project to the CPUC. Other agencies that would need to issue permits and approvals for the Project are listed in Section 1.3 below.

If the Forest Service decides to issue a Special Use authorization for the proposed Project or an alternative to the Project, Project-specific amendments to the governing 2005 Forest Land Management Plan (FLMP, or Forest Plan, USDA, 2005) would be required in order to ensure consistency of actions under the Special Use authorization with management direction in the FLMP. Section 1.3 (Agency Use of this Document) includes a discussion of the 2005 Forest Plan amendments that are expected to be required prior to implementation of the proposed Project or one of the Project alternatives.
Draft EIR/EIS, Final EIR, and Supplemental Draft EIS

Both NEPA and the California Environmental Quality Act (CEQA) encourage agencies to prepare a single joint environmental analysis document, because the environmental review processes under each law are similar and somewhat parallel. Therefore, for the purposes of this proposed Project, the USDA Forest Service (NEPA Lead Agency) and the CPUC (CEQA Lead Agency) entered into a Memorandum of Understanding to prepare a joint EIS and Environmental Impact Report (EIR), thereby serving the permitting and decision-making requirements of both agencies. As a result, the Forest Service and the CPUC collaborated on the preparation of a Draft EIR/EIS, which was released for public review in February 2009.

The Station Fire, the largest in the history of Los Angeles County, started in the ANF on August 26, 2009. The Station Fire burned approximately 160,000 acres, or 250 square miles, mostly within the ANF. The Station Fire was declared contained on October 16, 2009. The fire caused widespread damage and burned most of the proposed TRTP transmission alignments through the ANF (i.e., Segments 6 and 11). As a result, the Forest Service decided to prepare a Supplemental Draft EIS to re-evaluate the Project’s effects in light of the changed conditions caused by the Station Fire. These changed conditions did not necessitate the preparation of a supplemental EIR analysis under CEQA. As a result, the process to prepare a joint Final EIR/EIS document was discontinued and the two agencies proceeded on independent tracks to complete the separate documentation required by NEPA and CEQA. The CPUC published a Final EIR for the Project in October 2009 and the Forest Service proceeded with the preparation of the Supplemental Draft EIS, which was completed in April 2010. The CPUC approved those components of the proposed Project located on non-federal lands in December 2009 (Decision 09-12-044).

In addition to changed conditions caused by the Station Fire, the Supplemental Draft EIS prepared by the Forest Service analyzed the impacts associated with certain changes in SCE’s proposed Project that affect NFS lands. SCE informed the Forest Service of these Project changes after publication of the Draft EIR/EIS. The Supplemental Draft EIS was released for public review on April 30, 2010, and the review period ended on June 14, 2010. Comments received on the Supplemental Draft EIS and responses to those comments are included in this Final EIS (see Appendix E).

Purpose of the EIS

This EIS evaluates and presents the environmental impacts that are expected to result from construction, operation, and maintenance of SCE’s proposed Project and presents recommended mitigation measures that, if adopted, would avoid or minimize environmental impacts. In accordance with NEPA requirements, this EIS also identifies and analyzes alternatives that address significant environmental issues associated with the proposed Project, including the No Action Alternative.

The intent of this EIS is to inform the public and meet the needs of the federal agencies that will issue permits or other approvals for the Project. The proposed Project and alternatives are described briefly below and in detail in Chapter 2 (Description of Alternatives, including the Proposed Project) of this document. This EIS does not make a recommendation regarding the approval or denial of the Project; it is purely informational in content and will be used by the Forest Service, as well as by the USACE, in considering whether or not to authorize and/or approve the proposed Project or an alternative to the proposed Project.

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1 See the Final EIR published by the CPUC in October 2009 for an explanation of CEQA requirements and rationale for not needing supplement analysis as a result of the Station Fire.
The content of this EIS reflects relevant input received from government officials, public agencies, nongovernmental organizations, and concerned members of the public during the EIS scoping period following the Forest Service’s publication of the Notice of Intent (NOI) to prepare an EIS (Federal Register Vol. 72, No. 173, page 51404, September 7, 2007). During the public scoping and comment period for the proposed Project, public involvement activities including the following were completed: established an Internet web page and a telephone hotline for Project information and to receive public comments; distributed the NOI and scoping meeting notices; conducted multiple public scoping meetings; and conducted multiple meetings with affected local jurisdictions to discuss comments and concerns related to the Project. Please see Section 7.1 (Public Participation and Notification) for a full description of public scoping activities. Consultation with affected public agencies continued beyond the formal scoping period, as needed, to resolve concerns related to the Project.

The proposed Project and alternatives are briefly summarized below in Section 1.1 (please see Chapter 2 of this document for a full description of Alternatives 2, 6, and 7; the most current descriptions of the alternative routes that are located off federal lands [i.e., Alternatives 3, 4, and 5] are presented in detail in Chapter 2 of the Final EIR); the Project’s purpose and need are discussed in Section 1.2; agency use of this document is presented in Section 1.3; an overview of the environmental review process is provided in Section 1.4; and a readers’ guide to this Final EIS is included in Section 1.5.

1.1 Overview of Proposed Project/Action and Alternatives

Presented below is an overview of the alternatives considered as part of this EIS. Pursuant to NEPA (40 CFR 1505.1(e)), a range of reasonable alternatives to SCE’s proposed Project (Alternative 2) are examined in this EIS, and were selected based on the following criteria: (1) the alternative’s potential to meet most of the Project purpose and need; (2) the feasibility of the alternative; and (3) the alternative’s ability to avoid or lessen adverse effects of SCE’s proposed Project. As required under NEPA Section 1502.14(d), a No Action alternative was also considered. The proposed Project and alternatives include the following:

**Alternative 1: No Project/Action Alternative.** Under the No Project/Action Alternative the Tehachapi Renewable Transmission Project, as proposed, would not be implemented. As such, none of the associated Project activities would occur and the environmental impacts associated specifically with the proposed Project would not occur. However, in the absence of the Project, SCE still would continue to operate and maintain the existing transmission structures, including access roads and spur roads, for operation and maintenance purposes under a variety of agreements (landowners and land managers) and permits/easements (Forest Service and USACE). For example, within the ANF, approximately 80 miles of roads are currently being used to access the existing structures along Segments 6 and 11, which the use and maintenance of is authorized through existing roads permits issued by the Forest Service. SCE would also be required to interconnect and integrate power generation facilities into its electric system, as required under Sections 210 and 212 of the Federal Power Act (16 U.S.C. § 824 [i] and [k]) and Sections 3.2 and 5.7 of the California Independent System Operator’s (CAISO’s) Tariff. Various scenarios related to electricity generation and transmission reasonably expected to occur in the foreseeable future are identified in Chapter 2 (Description of Alternatives, including the Proposed Project) of this EIS.

**Alternative 2: SCE’s Proposed Project.** SCE’s proposed Project would involve construction, operation, and maintenance of new and upgraded transmission infrastructure along approximately 173 miles of new and existing ROWs from the TWRA in southern Kern County, south through Los Angeles County and the ANF, and east to the existing Mira Loma Substation in Ontario, San Bernardino County, California. To
support construction of the proposed Project, a total of 20 helicopter staging/support areas have been identified by SCE in the vicinity of Segments 6 and 11 to provide for helicopter construction activities within the ANF. A total of 33 new 500-kV towers would be constructed by helicopter under this alternative: 17 along Segment 6 and 16 along Segment 11. The proposed Project would traverse approximately 42 miles of NFS lands in the ANF, as well as approximately 6.4 miles of lands that are controlled by the USACE in the vicinity of Santa Fe Dam and Whittier Narrows in Los Angeles County (Segments 7 and 8). In addition, a 3.8-acre helicopter staging area (SCE#9), which would be utilized during construction, would be located on land controlled by the USACE. Primary components of SCE’s proposed Project include the following:

- Build a new single-circuit 500-kV transmission line (T/L) traveling approximately 16.8 miles in new ROW between the approved Windhub Substation and the proposed new Whirlwind Substation (Segment 10);
- Build two new single-circuit 220-kV T/Ls for approximately 4.0 miles (traveling parallel) in new ROW between the proposed (not part of Project) Cottonwind Substation to the proposed new Whirlwind Substation (Segment 4 – 220 kV);
- Build a new single-circuit 500-kV T/L for approximately 15.6 miles in new ROW between the proposed new Whirlwind Substation and the existing Antelope Substation (Segment 4 – 500 kV);
- Replace approximately 17.4 miles of the existing Antelope-Vincent 220-kV T/L and the existing Antelope-Mesa 220-kV T/L with only one new T/L built to 500-kV standards in existing ROW between the existing Antelope and Vincent Substations (Segment 5);
- Rebuild approximately 18.7 miles of existing 220-kV T/L to 500-kV standards between the existing Vincent and Gould Substations and construct a new 220-kV circuit on the vacant side of the existing double-circuit structures of the Eagle Rock-Mesa 220-kV T/L between the existing Gould and Mesa Substations (Segment 11);
- Rebuild approximately 31.9 miles of existing 220-kV T/L to 500-kV standards from the existing Vincent Substation to the southern boundary of the ANF, including approximately 26.9 miles of the existing Antelope-Mesa 220-kV T/L and approximately 5 miles of the existing Rio Hondo-Vincent 220-kV No. 2 T/L (Segment 6);
- Rebuild approximately 15.8 miles of existing Antelope-Mesa 220-kV T/L to 500-kV standards from the southern boundary of the ANF to the existing Mesa Substation (Segment 7);
- Rebuild approximately 33 miles of existing Chino-Mesa 220-kV T/L to 500-kV standards from a point approximately two miles east of the existing Mesa Substation (the “San Gabriel Junction”) to the existing Mira Loma Substation. Also rebuilding approximately 7 miles of the existing Chino-Mira Loma No. 1 line from single-circuit to double-circuit 220-kV structures (Segment 8);
- Build the new Whirlwind Substation, a 500/220-kv substation located approximately four to five miles south of the proposed (not part of Project) Cottonwind Substation near the intersection of 170th Street and Holiday Avenue in Kern County near the TWRA (Segment 9);
- Upgrade the existing Antelope, Vincent, Mesa, Gould, and Mira Loma Substations to accommodate new T/L construction and system compensation elements (Segment 9);
- Install associated telecommunications infrastructure; and
- Apply approved herbicides to select invasive plant species in the Project area on NFS lands within the ANF. The nature and extent of invasive species control would be further defined in an Operations and Maintenance Plan included in the Special Use authorization issued by the Forest Service.

**Alternative 3: West Lancaster Alternative.** This alternative would re-route the new 500-kV T/L in Segment 4, which is currently proposed along 110th Street West, 0.5 miles farther west along 115th Street West. As with the proposed Project, Alternative 3 would traverse approximately 42 miles of NFS lands in the ANF and approximately 6.4 miles of lands that are controlled by the USACE. In addition, a 3.8-acre helicopter staging area (SCE#9), which would be utilized during construction, would be located on land controlled by the USACE.
Alternative 4: Chino Hills Alternatives. Five route variations in the Chino Hills area have been analyzed, as described below. Implementation of one of these routing options would eliminate construction of approximately 16 miles of 500-kV structures along Segments 8A and 8C. Per the 2009 CAISO Transmission Plan, upgrades would continue to be required in Segment 8B (6.8 miles) between Chino and Mira Loma Substations through the cities of Chino and Ontario, which is the same as Alternative 2.

- **Route A** would place a new double-circuit 500-kV T/L in Segment 8A through Chino Hills State Park (CHSP) parallel to and south of an existing double-circuit 220-kV T/L. This alternative route would require construction of a new 500-kV switching station in CHSP, which would allow the new 500-kV T/Ls to connect to existing 500-kV T/Ls located in this area that provide connections to the Mira Loma Substation.

- **Route B** represents a refinement to Alternative 4 Route A, in which a new double-circuit 500-kV T/L in Segment 8A would be routed completely through CHSP parallel to and north of an existing double-circuit 220-kV T/L. This alternative route would require construction of a new 500-kV switching station, which would be located east of and outside of the CHSP, and would allow the new double-circuit 500-kV T/L to connect to existing 500-kV T/Ls located in this area that provide connections to the Mira Loma Substation.

- **Route C** represents a refinement to Alternative 4 Route A, in which a new double-circuit 500-kV T/L in Segment 8A would be placed parallel to and south of an existing double-circuit 220-kV T/L up to CHSP. At this point, this alternative route would turn east for approximately 1.6 miles, remaining just north of the CHSP boundary, to a new 500-kV switching station. A portion of the existing single-circuit 500-kV T/L within CHSP would be re-routed to tie into the new switching station, which would allow the new double-circuit 500-kV T/L to connect to these existing 500-kV T/Ls to allow power flow to continue on to the Mira Loma Substation. In addition, a portion of the existing 220-kV T/L within CHSP would be re-routed outside of CHSP, paralleling the new 500-kV T/Ls from just west of the CHSP boundary to the new switching station. The re-routed 500-kV and 220-kV T/Ls would proceed north out of the new switching station and east around raptor ridge for approximately 1.9 miles to reconnect with the existing 500-kV and 220-kV T/Ls.

- **Route B Modified** is similar to the original Route C option discussed above, with the exceptions that (1) the new gas-insulated switching station would be located on Aerojet property approximately 2,500 feet northwest of the location proposed for the original Route C, (2) transmission line configurations and access roads would be altered to account for relocation of the switching station, and (3) re-routing of the existing single-circuit 500-kV towers in CHSP to the new switching station would occur utilizing double-circuit 500-kV towers. As with the original Route C, this proposed Route 4C Modified would also diverge from the proposed Project Segment 8A at Milepost (MP) 19.2, as well as re-route the existing 500-kV and 220-kV T/Ls from within CHSP, through a new switching station located north of CHSP.

- **Route D** represents a refinement to Alternative 4 Route A, in which a new double-circuit 500-kV T/L in Segment 8A would be placed parallel to and north of an existing double-circuit 220-kV T/L up to CHSP. At this point, the alternative route would turn east and proceed to follow the northern boundary of CHSP for approximately 4.0 miles, then just east of Bane Canyon the alignment would turn southeast traversing the northeast corner of CHSP for approximately 1.3 miles. The alignment would then turn northeast, again parallel and north of the existing T/Ls, for approximately 0.4 miles before terminating at a new 500-kV switching station located outside of CHSP, just south of the existing 500-kV T/Ls. This switching station would allow the new double-circuit 500-kV T/L to connect to existing 500-kV T/Ls located in this area to provide connections to the Mira Loma Substation.

As with the proposed Project, Alternative 4 (including all five routing options) would traverse approximately 42 miles of NFS lands in the ANF and approximately 6.4 miles of lands that are controlled by the USACE. In addition, a 3.8-acre helicopter staging area (SCE#9), which would be utilized during construction, would be located on land controlled by the USACE.

Alternative 5: Partial Underground Alternative. This alternative would utilize Gas Insulated Line (GIL) technology to place the proposed transmission lines underground along Segment 8A through the City of Chino Hills from approximately S8A MP 21.9 to 25.4 to reduce visual impacts and address other community concerns. As with the proposed Project, Alternative 5 would traverse approximately 42 miles of NFS lands in the ANF and approximately 6.4 miles of lands that are controlled by the USACE. In
addition, a 3.8-acre helicopter staging area (SCE#9), which would be utilized during construction, would be located on land controlled by the USACE.

**Alternative 6: Maximum Helicopter Construction in the ANF Alternative.** This alternative was requested by the Forest Service to reduce ground disturbance within the ANF by minimizing new road construction through the use of helicopter construction. A total of 13 helicopter staging/support areas have been identified in the vicinity of Segments 6 and 11 to provide for helicopter construction activities within the ANF. A total of 151 new 500-kV towers would be constructed by helicopter under this alternative: 96 along Segment 6 and 55 along Segment 11. As with the proposed Project, Alternative 6 would traverse approximately 42 miles of NFS lands in the ANF and approximately 6.4 miles of lands that are controlled by the USACE. Invasive plant species will be surveyed for and controlled using manual techniques and approved herbicides within the Project area on NFS lands on the ANF. The nature and extent of invasive species control would be further defined in an Operations and Maintenance Plan included in the Special Use authorization issued by the Forest Service.

**Alternative 7: 66-kV Subtransmission Alternative.** This alternative is comprised of four 66-kV subtransmission line elements, including the following: (1) Undergrounding the existing 66-kV subtransmission line on Segment 7 on USACE controlled lands through the River Commons at the Duck Farm Project (Duck Farm Project) between MP 8.9 and MP 9.9 of Segment 7, as requested by the Board of Supervisors County of Los Angeles to minimize the Project’s effects to passive recreation opportunities in the planned Duck Farm Project area; (2) Re-routing and undergrounding the existing 66-kV subtransmission line around the Whittier Narrows Recreation area along Segment 7 (S7 MP 11.4 to 12.025) to reduce impacts to least Bell’s vireos as identified by SCE and USACE; (3) Re-routing the existing 66-kV subtransmission line through the Whittier Narrows Recreation Area, which is controlled by the USACE, in Segment 7 (S7 MP 12.0 to 13.6) immediately north of the existing 220-kV ROW to reduce the number of structures required (20-foot expanded ROW required); and (4) Re-routing the existing 66-kV subtransmission line around the Whittier Narrows Recreation Area along Segment 8A between the San Gabriel Junction at MP 2.2 and S8A MP 3.8 (two routing options are provided in this area) to reduce impacts to least Bell’s vireos, as identified by SCE and the USACE. As with the proposed Project, Alternative 7 would traverse 42 miles of NFS lands in the ANF; however, this alternative would also traverse roughly 7.9 miles of lands that are controlled by the USACE, which is approximately 1.5 miles more USACE controlled lands than the proposed Project or other Project alternatives. In addition, a 3.8-acre helicopter staging area (SCE#9), which would be utilized during construction, would be located on land controlled by the USACE.

### 1.2 Purpose and Need

Under the Council on Environmental Quality (CEQ) regulations for NEPA (40 CFR Section1502.13), an EIS must identify the underlying purpose and need to which the lead agency is responding in proposing the alternatives, including the proposed action.

The purpose of the proposed TRTP is described in the PEA, which was submitted as part of SCE’s applications to the USDA Forest Service and CPUC. As stated by SCE, the purpose of the proposed TRTP is to provide the electrical facilities necessary to integrate levels of new wind generation in excess of 700 MW and up to approximately 4,500 MW in the TWRA (SCE, 2007). Because the proposed TRTP would serve future wind development projects in the TWRA, the potential effects of these future wind projects were addressed in Chapter 6 (Development of the Tehachapi Wind Resource Area) of the Final
EIR. This information was used to determine cumulative impacts of the transmission line, and the wind generation projects are not considered connected actions for purposes of NEPA compliance.

In addition to the purpose of the Project described above, SCE identified the following objectives for the Project in the PEA:

- Construct the project to reliably interconnect new wind generation resources in the TWRA, and enable SCE and other California utilities to comply with California’s Renewables Portfolio Standard (RPS) in an expedited manner.
- Comply with all applicable reliability planning criteria required by the North American Electric Reliability Council (NERC), the Western Electricity Coordinating Council (WECC), and the CAISO.
- Construct facilities in an orderly, rational and cost-effective manner to maintain reliable electric service, by minimizing service interruptions, during construction.
- Address the reliability needs of the CAISO controlled grid due to projected load growth in the Antelope Valley.
- Address the South of Lugo transmission constraints, an ongoing source of concern for the Los Angeles Basin.
- Maximize the use of existing T/L right-of-ways in order to minimize effects on previously undisturbed land and resources.
- Minimize environmental impacts, through selection of routes, tower types and locations, while still meeting project objectives.
- Where existing right-of-way is not available, select the shortest feasible route that minimizes environmental impacts.
- Meet project needs in a cost-effective and timely manner.

The Forest Service and CPUC reviewed the Project objectives presented by SCE to determine which of the objectives represented an underlying purpose of the Project and, therefore, could appropriately be used to develop a range of reasonable Project alternatives for analysis in the Draft EIR/EIS. In addition to the purpose of the Project described by SCE to provide electrical facilities needed to integrate new wind generation, the Lead Agencies determined that the Project would also accomplish two other important objectives related to increasing transmission system reliability in the Antelope Valley and resolving transmission constraints south of Lugo Substation, which is located in Hesperia, California. Therefore, for the purposes of NEPA, the Project’s three primary objectives are to:

- Provide the electrical facilities necessary to reliably interconnect and integrate in excess of 700 MW\(^2\) and up to approximately 4,500 MW of new wind generation in the TWRA currently being planned or expected in the future, thereby enabling SCE and other California utilities to comply with the California RPS goals in an expedited manner (i.e., 20 percent renewable energy by year 2010 per California Senate Bill 107).\(^3\)
- Further address the reliability needs of the CAISO-controlled grid due to projected load growth in the Antelope Valley.
- Address the South of Lugo transmission constraints, an ongoing source of concern for the Los Angeles Basin.

The Forest Service (and the CPUC) determined that the other objectives identified by SCE in the PEA (as listed above) were intended to guide the planning and design of the proposed TRTP and do not represent part of the underlying purpose of the Project.

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\(^2\) The Antelope Transmission Project, which provides 700 MW of transmission capacity, is comprised of three segments: Segment 1 or the Antelope Transmission Project (SCH No. 2005061161) and Segments 2 & 3 of the Antelope Transmission Project (SCH No. 2006041160) were previously analyzed and approved by the Forest Service and CPUC (Segment 1 only).

\(^3\) FERC Order No. 2003 requires all public utilities that own, control, or operate facilities for transmitting electric energy in interstate commerce to provide interconnection service to electric generating facilities having a capacity of more than 20 megawatts.
The Forest Service (and the CPUC) decided it was necessary to assess the purpose and need for the TRTP independent of SCE’s application filings (Bagley, 2008). Relevant documents issued by the CAISO, California Energy Commission (CEC), and Federal Energy Regulatory Commission (FERC) were reviewed to assess whether sufficient documentation exists to support the need for the TRTP. Based upon the information contained in these documents, it was determined that there is ample support to justify the need for the TRTP. It was determined that a high probability exists that sufficient generation will be sited in the TWRA to justify the network upgrades proposed. The TRTP is expected to provide the capacity to connect the resources listed in the Tehachapi Generation Queue (totalling 19 projects equaling 4,350 MW as of April 2006) as well as provide additional system reliability to the CAISO-controlled grid. Furthermore, FERC’s approval of the CAISO’s proposed process of aggregating the interconnection requests of the projects in the Tehachapi Generation Queue for the purpose of establishing the necessary network system upgrades to accommodate all projects in the queue (19 in total) lends regulatory support for development of the TRTP. (Bagley, 2008)

Finally, it was determined that the TRTP will help alleviate concerns that have been raised by the CEC that the present transmission infrastructure is insufficient to permit utilities to meet their RPS requirements. It was independently concluded by the Forest Service (and the CPUC) that the TRTP would help to address several concerns presently facing California’s electric industry including the following needs: (1) expand California’s existing transmission infrastructure; (2) accommodate large quantities of renewable generation in order to meet the State’s RPS goals; and (3) enhance system reliability in the Los Angeles area. As such, the purpose and need for the TRTP, as defined above by the Forest Service (and the CPUC), has been confirmed independent of SCE’s application filings.

Section 1.2.1, below, provides background information regarding the purpose and need of the TRTP. In addition, Section 1.2.2 presents information on the Project purpose for the Forest Service in responding to SCE’s application for a Special Use authorization.

### 1.2.1 Background

As noted above, the purpose of the proposed TRTP is to provide the electrical facilities that are needed to integrate new wind generation in the TWRA. The Project has also been designed to satisfy the following objectives: (1) accommodate the potential renewable power generation that has been identified in the TWRA, thereby enabling SCE and other California utilities to comply with the California RPS; (2) further address projected load growth in the Antelope Valley; and (3) address South of Lugo transmission constraints. To allow for a better understanding of the purpose and objectives of the TRTP, the following discussion provides additional information regarding the RPS requirements that are currently driving renewable energy development, SCE’s obligation to provide transmission capacity to the TWRA, needed improvements to SCE’s transmission system, and the role of the USDA Forest Service as the NEPA Lead Agency.

#### Renewables Portfolio Standard (RPS) Requirements

While the TRTP is proposed to integrate new wind generation in the TWRA, the need for this Project arose from the mandates of the California RPS. The California RPS was established in 2002 by Senate

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4 The Tehachapi Generation Queue is consistently changing and has been updated since Ken Bagley’s Memorandum Re: Need for the Tehachapi Transmission Project was provided as a reference for this Purpose and Need discussion. For the most recent reflection of projects in the queue, please see Table 2.9-2 (California Independent System Operator - Kern County Wind Generation Queue), which is provided at the end of Chapter 2 (Description of Alternatives, Including the Proposed Project). The queue is also addressed in Chapter 6 of the Draft EIR/EIS.
Bill 1078, and requires investor-owned utilities, including retail sellers of electricity such as SCE, to increase their sale of electricity produced by renewable energy sources (such as wind) by at least one percent per year, achieving 20 percent by 2017. These requirements were accelerated by the passage of Senate Bill 107 to be consistent with the Energy Action Plan (EAP) adopted in 2003 (CEC, 2003). The EAP, adopted by the CPUC, CEC, and the now defunct California Power Authority, pledged that the agencies will accelerate RPS implementation to meet the 20 percent goal by 2010 instead of 2017 (CEC, 2007).

The Public Resources Code (Section 25740) and the Public Utilities Code (Section 399.15) have been amended to include the most recent RPS target requiring investor-owned utilities to procure 20 percent of their total retail sales from renewable energy resources by 2010. The Draft EIR/EIS described that a more aggressive RPS goal of 33 percent renewable energy by the year 2020 had been proposed by the State. In support of that 33 percent target, the California Renewable Energy Transmission Initiative (RETI) and Executive Order S-14-08 (issued November 17, 2008) include goals to identify transmission requirements necessary to achieve a renewable energy supply of 33 percent by the year 2020.

The initiation of the proposed TRTP pre-dates the initiation of the RETI process; however, because the RETI effort is directly relevant to the purposes of TRTP and is supervised in part by the CPUC, a description of the RETI is provided here with regards to the State of California’s renewable energy goals. RETI is a state-wide initiative supervised by several collaborating entities, including the CPUC, CEC, CAISO, and Publicly-Owned Utilities. As described by the CEC, primary functions of RETI include: operate as a stakeholder planning collaborative and involving a broad range of participants to build support for renewable energy and related transmission development; work within CAISO planning processes, including development of modifications to that planning process in compliance with Order No. 890 of the Federal Energy Regulatory Commission; support CEC policy development, transmission planning, transmission corridor designation, and power plant siting in support of renewable energy; and work with the publicly-owned utilities (POUs), investor-owned utilities (IOUs), and developers (CEC, 2008; RETI Coordinating Initiative, 2009).

Executive Order S-21-09, which was issued on September 15, 2009, further builds on the commitment to accelerate the State’s renewable energy standard by directing the California Air Resources Board (CARB) to adopt a regulation consistent with the 33 percent renewable energy target established in Executive Order S-14-08 by July 31, 2010 (Office of the Governor, 2009). In developing the regulation, CARB may consider different approaches that would achieve the objectives of the Executive Order and may increase the target and accelerate and expand the time frame based on a thorough assessment of such factors as technical feasibility, system reliability, cost, greenhouse gas emissions, environmental protection or other relevant factors.

**Tehachapi Wind Resource Area (TWRA)**

As a crucial step in meeting the California RPS goals, the CPUC must explore possibilities for the removal of constraints on the transmission of electricity from its point of generation to its point of use, referred to as the “load center”. In order for SCE and other investor-owned utilities to satisfy the target goal of procuring 20 percent renewable energy by 2010, new transmission facilities are required to interconnect remote areas of high renewable power generation, such as the TWRA, to areas of high load, including portions of the Los Angeles and San Bernardino metropolitan areas that are within the SCE service area.
The TRTP would provide the necessary transmission network to interconnect proposed wind generation in the TWRA, which is considered one of the largest resources for wind energy in California (TCSG, 2005). The CEC has estimated that there is approximately 4,500 MW of potential wind development in the Tehachapi and Antelope Valley region (TCSG, 2006). In order to assess the ability of this region to contribute toward meeting the State’s mandated RPS goals, the CPUC issued Decision 04-06-010 which ordered the formation of a collaborative study group to develop a comprehensive transmission development plan for wind energy in the Tehachapi area (CPUC, 2004). This decision also required SCE to prepare and file a CPCN application for Tehachapi transmission upgrades in coordination with the recommendations of the collaborative study group (CPUC, 2004).

In conjunction with the Tehachapi Collaborative Study Group (TCSG), SCE identified a phased development plan for transmission infrastructure in the TWRA (TCSG, 2006). The purpose of this phased transmission plan, called the Tehachapi Transmission Project (TTP), is to accommodate the generation of renewable wind energy in the Tehachapi region. The TTP is being implemented in separate phases, where the proposed TRTP is Phase 3. The approved Antelope-Pardee 500-kV Transmission Project or Antelope Transmission Project Segment 1 represents Phase 1 of the TTP, while the approved Antelope Transmission Project Segments 2 & 3 represents Phase 2 of the TTP. The CPCN applications for each of these three phases of the TTP were submitted separately for consideration by the CPUC over a period of several years and, as such, separate environmental analyses have been prepared to analyze and disclose the potential environmental effects of constructing, operating, and maintaining each of the three phases.

According to the CEC’s 2005 Integrated Energy Policy Report (IEPR), “California needs major investments in new transmission infrastructure to interconnect with remote renewable resources in the Tehachapi and Imperial Valley areas, without which it will not be able to meet its RPS targets” (CEC, 2005). California RPS targets are required by Public Utilities Code Section 399.14. The IEPR further explains that the “Tehachapi area transmission projects” proposed by SCE, which include the proposed TRTP, are critical in order to facilitate the development of renewable energy resources required by the State RPS targets and recommends that these phases of the TTP should move forward “expeditiously.”

**Projected Load Growth and Transmission Constraints**

In addition to contributing toward RPS compliance, the TRTP would satisfy the Project objectives of improving SCE’s transmission system reliability and mitigating existing transmission constraints. The Antelope Valley area has experienced above-average electrical demand growth and is forecast to continue above-average growth of about five percent per year. SCE currently forecasts that the bulk transmission system facilities in this area will experience reliability problems by 2011. Currently, operating procedures that are used to mitigate reliability problems during heavy load conditions are not considered sufficient to mitigate thermal overload on the existing Antelope-Mesa and Antelope-Vincent 220-kV T/Ls. As part of SCE’s development plan for the Tehachapi area, the proposed TRTP would include transmission upgrades north of Vincent Substation that would reliably serve the load requirements in the Antelope Valley as well as interconnect and transmit the electrical power from new generation resources to Vincent Substation.

The Project would also improve the reliability of the CAISO-controlled transmission network within the South of Lugo transmission corridor, which is an existing transmission path between the northern portion of SCE’s service territory and the Los Angeles Basin. The current network configuration transports power
flowing from northern California and southern Nevada to Lugo Substation. The power is then transported to load centers in the Los Angeles Basin via three 500-kV T/Ls that run south from Lugo Substation through the Cajon Pass along the I-15 freeway and terminate at Mira Loma Substation. The Cajon Pass is subject to annual forest fires that affect collocated transmission lines, as demonstrated in 2002 when all three of the existing 500-kV T/Ls were lost due to a forest fire. SCE also anticipates that the South of Lugo transmission corridor will exceed its current transfer capability limitation, creating a bottleneck within the CAISO transmission network. To relieve this bottleneck and to mitigate the loss of transmission from future forest fires, the proposed TRTP would provide additional transmission paths into Mira Loma Substation and would increase the substation’s total import capability from 6,400 MW to 7,400 MW.

Executive Order 13212

In response to a clearly identified need to improve energy transmission infrastructure throughout the country, President George W. Bush issued Executive Order 13212 on May, 18, 2001, in order to encourage the expedited and environmentally responsible development of transmission infrastructure. This Executive Order consists of four sections as follows: Section 1 (Policy); Section 2 (Actions to Expedite Energy-Related Projects); Section 3 (Interagency Task Force); and Section 4 (Judicial Review). With regard to the expedited agency review of permits and other relevant documents (including environmental analyses) Section 2 states the following:

For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate. (CEQ, 2001)

In observance of this Executive Order and to the greatest extent feasible, the Forest Service has worked in coordination with the Project proponent (SCE) to fully analyze the proposed Project and alternatives in compliance with NEPA and to expedite the environmental review process.

1.2.2 USDA Forest Service

SCE filed an application for a Special Use authorization with the USDA Forest Service on June 29, 2007, seeking permission for construction, operation, and maintenance of the proposed transmission facilities across NFS lands managed by the ANF. As the federal Lead Agency, the Forest Service must respond to SCE’s Special Use application by providing a decision regarding issuance of a Special Use authorization. The Forest Service is responsible for compliance with the requirements of NEPA, Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), the Forest Land Management Plan, and the Forest Service Handbooks. The Forest Service Handbook Section 2709.11, Chapter 10, defines the Forest Service’s role in authorizing Special Use authorizations across NFS lands. Upon receipt of a Special Use application, the authorized officer of the Forest Service will determine whether the proposal meets screening criteria requirements. A proposal that satisfies the initial and second-level screening criteria can be accepted as a formal written application which is subject to an environmental analysis pursuant to NEPA. A Special Use authorization may be issued once all NEPA prerequisites have been met and the administrative appeal process has expired without an appeal being filed, or if an appeal has been filed, it has been resolved through all levels (FSH 2709.11, Chapter 10, Sections 12 through 14).

The Forest Service will review SCE’s Special Use application for consistency with the governing 2005 Forest Plan and with other policies and regulations relevant to the management of NFS lands. The intent
and purpose of the Forest Service in reviewing SCE’s application is to implement the policies and objectives of the Forest Plan and to ensure that any action on NFS lands, as authorized by a Special Use authorization, is in compliance with the Forest Plan. The Forest Service may deny authorization for Special Uses for a number of different reasons, such as if “the proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed, or with other uses,” or the proposed use “would not be in the public interest” (36 CFR 251.5).

The Forest Service is required to balance multidisciplinary objectives in the decision-making process for Special Use authorizations. An amendment to the 2005 Forest Plan is required for any action that is included under the Special Use authorization but would otherwise be incompatible with the Forest Plan (per 36 CFR 219.10(e)). Therefore, in evaluation of the proposed Project, the Forest Service must identify all Forest Plan amendments that would occur in conjunction with approval of the proposed Project’s Special Use authorization. Project-specific Forest Plan amendments that are expected to be required under the proposed Project or an alternative to the Project are described in the following section.

**USDA Forest Service Purposes in Analyzing the Proposed Action**

As the federal Lead Agency, the USDA Forest Service has identified the following agency-specific purposes (objectives) in analyzing the proposed Project and alternatives. This agency-specific definition better identifies the context in which the agency may authorize this type of project.

- Minimize adverse environmental effects to NFS lands, such as impacts to the following resources: visual, biological, cultural, recreation, air, soil, and water, among others as applicable
- Minimize the effects of urbanization, or negative effects to open space and natural settings, on the Angeles National Forest
- Ensure that future Forest management activities such as wildland fire fighting, among others, are not detrimentally affected by the location and/or design of the proposed action
- Ensure that the location of the transmission line on NFS lands maximizes the accommodation of future utility needs

Pursuant to the Federal Land Policy and Management Act (FLPMA) of 1976 (as amended), the Forest Service’s need for action is to respond to applications from SCE for a Special Use authorization to construct, maintain, and use transmission lines (and ancillary improvements) through the ANF. The Forest Service will consider the application for use of NFS lands to ensure that the proposed action is in the public interest and is appropriate based on the governing land management plan. In addition, in compliance with Executive Order 13212, which is described above in Section 1.2.1 (Background), the USDA Forest Service has worked in coordination with the CPUC and SCE to assess the proposed Project in an expeditious manner, to the maximum extent feasible without jeopardizing the integrity of this analysis, thereby ensuring that transmission needs are met with minimal environmental impacts.

**1.3 Agency Use of this Document**

**USDA Forest Service**

The USDA Forest Service is responsible for issuing a decision to approve or deny the Special Use authorizations and Forest Plan amendments that are required in order to construct and operate/maintain the proposed Project on NFS lands in the ANF. Using the Final EIS as a basis for decision-making, the Regional Forester of the Pacific Southwest Region, USDA Forest Service, will make a decision on whether to authorize the required 50-year term Special Use authorization for the construction, operation,
and maintenance of the proposed 500-kV transmission lines and ancillary improvements on NFS lands before any Project construction activities would be permitted to begin on NFS lands.

Following completion of the Final EIS, the Forest Service will review the document for consistency with NEPA and will issue a Record of Decision (ROD) to document the decision to either approve or deny the required 50-year term Special Use authorization for the Project. The ROD will also include the Forest Service’s decision on any Project-specific amendments that will be required to the governing 2005 Forest Plan in order for Project construction, operation, and maintenance to occur. The following Project-specific FLMP amendments are expected to be necessary prior to implementation of the proposed Project or an alternative to the Project:

- A Project-specific amendment to Standard S10 along the existing or proposed utility corridor would be made where applicable; and
- The Forest Standard addressing Riparian Conservation Areas (RCAs) would be modified, as the construction and/or improvement to new spur roads and existing access roads on NFS lands would adversely affect these areas.

The details of these amendments to the Forest Plan are provided as part of the description of each alternative in Section 2 of this EIS. The ROD is subject to administrative review and may be appealed under 36 CFR 215.

**Other Approvals Required**

In addition to the USDA Forest Service, other federal agencies will also use the Final EIS in their decision-making processes, particularly as relevant to the issuance of permits and/or easements for Project construction, operation, and maintenance. Various permits are also required from State and regional agencies. Table 1-1 provides a list of the anticipated federal and State permits and approvals that would be required for the proposed Project and alternatives, including those that would be issued by the Forest Service and CPUC as the NEPA and CEQA Lead Agencies, respectively. Please note that the CPUC has already approved those components of the Project located on non-federal lands in Decision 09-12-044 (December 24, 2009).

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<thead>
<tr>
<th><strong>Table 1-1. Required Federal and State Permits and Approvals</strong></th>
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<tr>
<td><strong>Agency</strong></td>
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<td><strong>FEDERAL</strong></td>
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<td>USDA Forest Service</td>
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<td>US Army Corps of Engineers (USACE)</td>
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<td>US Fish and Wildlife Service</td>
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<td>Federal Communications Commission</td>
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<td>Federal Aviation Administration</td>
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1. INTRODUCTION
Tehachapi Renewable Transmission Project

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<th>Table 1-1. Required Federal and State Permits and Approvals</th>
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<tr>
<td>Agency</td>
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<tr>
<td><strong>STATE/REGIONAL</strong></td>
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<tr>
<td>California Department of Parks and Recreation</td>
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<td>California State Park and Recreation Commission</td>
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<td>California Department of Toxic Substances Control</td>
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<td>California Department of Fish and Game</td>
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<td>California Air Resources Board</td>
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<td>Antelope Valley Air Quality Management District</td>
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<td>South Coast Air Quality Management District</td>
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<td>Kern County Air Pollution Control District</td>
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<td>State Water Resources Control Board</td>
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<td>California Department of Water Resources</td>
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<td>California Department of Parks and Recreation, State Historic Preservation Officer</td>
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<td>California Department of Transportation, State and Local Project Development</td>
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<td>Division of Occupational Safety and Health (formerly CAL OSHA)</td>
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No local discretionary approvals (e.g., use permits) are required of SCE because the CPUC has preemptive jurisdiction over the construction, operation, and maintenance of SCE facilities in California. This CPUC authority does not preempt the authority of special districts, such as local air pollution control districts, or other State agencies or the federal government. Although local use approvals are not required, SCE would still be required to obtain all ministerial building and encroachment permits from local jurisdictions per the CPUC’s General Order 131-D, which requires SCE to comply with local building, design, and safety standards to the greatest degree feasible to minimize Project conflicts with local conditions. County jurisdictions from which SCE may be required to obtain ministerial building and encroachment permits for the proposed Project or a Project alternative include the following: Kern County, Los Angeles County, San Bernardino County, and Orange County. In addition, city jurisdictions from which SCE may be required to obtain permits for the proposed Project or a Project alternative include the following:
The county and city jurisdictions listed above would be traversed by the proposed Project or a Project alternative. SCE may be required to obtain different types of ministerial and/or encroachment permits from various county and/or city agencies. For instance, the County of Los Angeles Public Works Department would likely require that SCE obtain permits for road use, excavation activities (for the cutting of public roadways), encroachment (of the public ROW), and construction activities. Similarly, the City of Los Angeles Department of Water and Power (LADWP) is expected to require a permit for the crossing of LADWP transmission lines and aqueducts. Other city jurisdictions, including those listed above, are expected to require encroachment permits, or similar authorization(s) for work conducted in the public ROW.

1.4 Overview of the Environmental Review Process

When a proposed project requires compliance with both NEPA and CEQA, the Lead Agencies may decide to collaborate in the preparation of a joint EIR/EIS document, as was the case with the Draft EIR/EIS for the proposed TRTP. In accordance with NEPA requirements, the Final EIS must be completed before a decision to approve or deny the project can be made by the NEPA Lead Agency (USDA Forest Service); similarly, in accordance with CEQA requirements, the Final EIR must be completed before a decision to approve or deny the project can be made by the CEQA Lead Agency (CPUC).

An EIS must provide the following information: disclosure of the Project’s expected impacts on the environment; identification of measures to reduce or avoid adverse impacts; and analysis of a range of reasonable alternatives. The purpose of this process is to inform the public about the impacts of the Project and to provide agency decision-makers with vital Project information to aid in their decision(s) regarding the Project. The basic content of an EIS includes:

- A description of the proposed Project/Action;
- A statement of the Purpose and Need for the action;
- A description of existing conditions in the Project area;
- An analysis of the potential environmental impacts of the proposed Project and alternatives;
- Recommendations of mitigation measures that would reduce or avoid adverse impacts (for impacts identified under the proposed Project as well as alternatives to the Project); and
- A discussion of other required environmental topics, including adverse environmental effects that cannot be avoided, irreversible and irretrievable commitment of resources, growth-inducing effects, and the relationship between short-term use and long-term productivity of the environment.

Under NEPA, the EIS process is initiated by publishing a Notice of Intent (NOI) to prepare an EIS in the Federal Register. This notice initiates a 30-day period during which public and agency input is solicited on the scope of issues and concerns that should be addressed in the EIS. As part of this scoping process, public meetings are conducted to present information on the proposed Project and to receive public input on the Project.
When the Draft EIS is completed, it is distributed for public review and comment in accordance with the requirements of NEPA (NEPA Regulations 40 CFR 1506.6). Copies of the Draft EIS are also submitted to the U.S. Environmental Protection Agency (USEPA) (40 CFR 1506.9), as well as affected and cooperating agencies as defined by NEPA. A Notice of Availability (NOA) of the Draft EIS is published in the Federal Register by the USEPA (40 CFR 1506.10). The NOA is also published in local newspapers. Publishing the NOA initiates a public review and comment period for the Draft EIS that is at least 45 days in length. All comments and concerns regarding the Draft EIS must be received by the Lead Agency before the end of the public review period in order to be considered in the Final EIS. During the public review period following publication of the NOA, a public hearing may be conducted to obtain public comment on environmental issues addressed in the Draft EIS. The date, time, and location of any public hearings, should they occur, are typically announced in local newspapers.

Responses to substantive comments received on the Draft EIS will be prepared by the Lead Agency and published in the Final EIS in accordance with NEPA Regulations 40 CFR 1503.4 and, in this case, Forest Service guidelines FSH 1909.15-2008-1.24.1. The Final EIS may present additional information in response to comments made on the Draft EIS and may include minor corrections to the Draft EIS that were discovered during the comment period, which may include the following: modification to the proposed Project or Project alternatives; development and evaluation of alternatives not previously considered by the agency; improvement or modification of the Project analysis as needed; factual corrections; and/or explanation as to why certain comments do not warrant further agency response. If the changes are minor and do not rise to a level requiring preparation of a Supplemental EIS (NEPA 1502.9(c)(1)), a Final EIS is prepared. Once the Final EIS is complete, another NOA is published in the Federal Register by the USEPA.

After the Final EIS has been completed and published, the federal Lead Agency prepares a Record of Decision (ROD) in accordance with NEPA requirements (40 CFR 1505.2). The ROD provides a public record explaining why the federal Lead Agency chose a particular course of action. Although the ROD typically cannot be approved until at least 30 days after the NOA for the Final EIS is published in the Federal Register, 40 CFR 1506.10(b)(2) provides an exception for Lead Agencies which have a formal appeal process, including the USDA Forest Service. Therefore, in this case the deciding officer may sign the ROD at the same time the NOA for the Final EIS is published in the Federal Register. The federal Lead Agency’s approval decision, as documented in the ROD, cannot be implemented any sooner than 50 days after the date the legal notice is published in the newspaper of record publicizing the decision of the Lead Agency (36 CFR 215.7; 36 CFR 215.9 (a)).

The proposed Project or approved alternative to the Project cannot be initiated before the EIS is finalized and the ROD is signed and approved. In addition, various other agencies may need to provide approvals prior to Project initiation, as discussed above in Section 1.3 (Agency Use of this Document). To various degrees, these agencies will utilize the information contained in this Final EIS in making their decisions regarding permits and approvals required for the Project.

1.5 Reader’s Guide to this Document

This Reader’s Guide section includes a description of documents that are incorporated by reference in the EIS (Section 1.5.1), as well as a discussion of how information available in the EIS is presented and how to locate specific types of information in the document (Section 1.5.2).

The entire content of the Draft EIR/EIS has not been reproduced in this Final EIS. Information and analysis that has not changed substantively from the Draft EIR/EIS has not been reproduced in this Final
EIS, particularly information about conditions and impacts on non-federal lands. For this information, the reader is referred to the Final EIR, which represents the most current information, and is included with this Final EIS on compact disc (CD). The Final EIR presents the content of the Draft EIR/EIS along with revisions that were made to produce the Final EIR and is incorporated by reference as per CFR 1502.21. The Final EIR is also available on the Project website at:

http://docs.cpuc.ca.gov/environ/tehachapi_renewables/finalEIR.htm

Forest Service decision makers are aware of all information assembled for the proposed Project as part of the NEPA record, including information about impacts on non-federal lands, and will consider this information in rendering a decision on SCE’s application for the TRTP.

1.5.1 Incorporation by Reference

The Proponent’s Environmental Assessment (PEA) for the proposed TRTP, as prepared by SCE and submitted as part of Application No. A.07-06-031, contains Project information that is incorporated by reference in the EIS as appropriate, depending upon the specific environmental issue area. The full PEA is available on the Project website at:


Also incorporated by reference into this EIS is a series of Specialist Reports, which include detailed technical environmental analyses prepared for certain resource/issue areas during the EIS analysis process. Due to the nature of certain resource/issue areas that are less technical than others, Specialist Reports were not required for all sections. As such, Specialist Reports were prepared for the following resource/issue areas: Air Quality; Biological Resources (including noxious weed and avian risk analyses); Riparian Conservation Areas; Cultural Resources; Geology, Soils, and Paleontology; Hydrology and Water Quality; and Visual Resources. These Specialist Reports, with the exception of Cultural Resources, are available for review on the Project website:


These reports are also available upon request through the Lead Agencies (USDA Forest Service and CPUC). Some information contained in the Cultural Resources Specialist Report is protected by law from public disclosure; therefore, it is not posted on the website. A version with protected information redacted will be provided upon request.

The environmental resource/issue area analyses presented in the EIS draw upon technical analyses provided in the Specialist Reports as necessary. In addition, each issue area analysis presents information required by NEPA which, as previously described, includes the following: disclosure of expected impacts on the particular Issue Area; recommended mitigation measures to reduce or avoid impacts to the degree feasible; and analysis of a range of reasonable alternatives to the proposed Project. Documents and reports which are incorporated by reference in the EIS include the following:


As noted above, SCE’s PEA for the proposed Project is incorporated by reference in this EIS. It is important to note that the PEA was used extensively to develop the proposed Project description presented in Chapter 2 (Description of Alternatives) of this EIS. In addition, information that was presented in the PEA for the proposed Project but was also applicable to Project alternatives, such as setting descriptions and construction methodologies, was also used in the development of Project alternatives.

1.5.2 Final EIS Organization

As described in the introduction to Section 1.5 above, the entire content of the Draft EIS/EIS has not been reproduced in this Final EIS. One chapter (Chapter 6), various sections and subsections, and certain appendices from the Draft EIR/EIS are not reproduced in this Final EIS. Table 1-2 lists the chapters and appendices included in this Final EIS and provides a brief description of each.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
<th>Changes from the Draft EIR/EIS</th>
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<tbody>
<tr>
<td>Executive Summary</td>
<td>A summary description of the proposed Project, the alternatives, and their respective environmental impacts are included. A summary table lists impacts and the associated mitigation measures for each impact identified for the proposed Project and alternatives.</td>
<td>This chapter has been updated for the Final EIS.</td>
</tr>
<tr>
<td>Chapter 1: Introduction</td>
<td>An overview of the proposed Project and alternatives to the Project, purpose of and need for the Project, and the public agency use of the EIR/EIS are described.</td>
<td>This chapter has been modified to describe the Supplemental Draft EIS and the CPUC’s Final EIR. It also reflects that the Final EIS is a NEPA document only, whereas the Draft EIR/EIS was a CEQA and NEPA document.</td>
</tr>
<tr>
<td>Chapter 2: Description of Alternatives, including the and Proposed Project</td>
<td>Detailed descriptions of the proposed Project/Action and alternatives to the proposed Project are presented.</td>
<td>This chapter has been updated and focuses on the alternatives involving federal lands. A decision on alternatives on non-federal lands has already been made by the CPUC (Decision 09-12-044). Detailed descriptions of the other alternatives can be found in the Final EIR.</td>
</tr>
<tr>
<td>Chapter 3: Environmental Analysis</td>
<td>A detailed description of the affected environment and regulatory framework is presented for each technical issue area. Each of the technical issue area sections also provide the detailed analysis of proposed Project impacts and impact of the Project alternatives in equal level of detail. Mitigation measures are presented that would help reduce or minimize any potential impacts identified as resulting from implementation of the Project.</td>
<td>Sections 3.2 (Agricultural Resources), 3.10 (Noise), 3.11 (Public Services and Utilities), and 3.17 (Electrical Interference and Hazards) are not reproduced in this Final EIS as no substantive changes were made after publication of the Draft EIR/EIS. The remaining resource/issue area sections have been edited in length, primarily to remove discussions of alternatives involving only non-federal lands, which have already been</td>
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Table 1-2. Reader’s Guide to Final EIS Chapters and Appendices*

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<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
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<tr>
<td>Chapter 4: Comparison of Alternatives</td>
<td>The process for selection of proposed Project alternatives is described along with the steps and rationale for elimination of certain alternatives from further analysis. Also, a comparison of the proposed Project and alternatives are provided.</td>
<td>This chapter has been updated and focuses on the alternatives involving federal lands. A decision on alternatives on non-federal lands has already been made by the CPUC (Decision 09-12-044).</td>
</tr>
<tr>
<td>Chapter 5: Other Required NEPA Considerations</td>
<td>This section addresses the various permitting and compliance requirements should the Project be implemented. The long-term implications of the action are also discussed. This chapter also discusses concerns related to magnetic fields, terrorism, and energy conservation.</td>
<td>This chapter has been updated for the Final EIS. Certain information that relates only to the CPUC’s CEQA process and non-federal aspects of the Project has not been included in the Final EIS.</td>
</tr>
<tr>
<td>Chapter 6: Development of the Tehachapi Wind Resource Area</td>
<td>This chapter addresses the TWRA through discussion of the following: elements of construction and operation of wind turbines; existing environmental setting; applicable regulations; and potential environmental impacts associated with wind development. This chapter also includes a summary of the expected environmental impacts associated with two proposed wind projects: the Alta-Oak Creek Mojave Project, and the PdV Wind Energy Project, both of which are located in the TWRA.</td>
<td>This chapter is not reproduced in this Final EIS. No substantive changes were made after publication of the Draft EIR/EIS.</td>
</tr>
<tr>
<td>Chapter 7: Consultation and Coordination</td>
<td>A description of the environmental review process and public participation program for the EIS is provided.</td>
<td>This chapter has been updated for the Final EIS.</td>
</tr>
<tr>
<td>Chapter 8: References</td>
<td>This chapter provides a listing of research conducted in preparation of the EIS.</td>
<td>This chapter has been updated for the Final EIS. Only references used in the Final EIS are included.</td>
</tr>
<tr>
<td>Chapter 9: Glossary/Acronyms</td>
<td>Definitions to terms used in the EIS are provided.</td>
<td>This chapter has been updated for the Final EIS.</td>
</tr>
<tr>
<td>Chapter 10: Index</td>
<td>An index of important or useful subjects is provided for ease in locating information in the EIS.</td>
<td>The page numbers in the index have been updated for the Final EIS.</td>
</tr>
<tr>
<td>Appendix A: Air Pollutant Emissions Calculations</td>
<td>A.1 Emissions Calculations A.2 Final General Conformity</td>
<td>Appendix A.1 is an update to Appendix C of the Draft EIR/EIS. Appendix A.2 is a new appendix that did not appear in the Draft EIR/EIS.</td>
</tr>
<tr>
<td>Appendix B: Biological Resources</td>
<td>B.1 Biological Assessment B.2 Biological Evaluation B.3 Biological Opinion</td>
<td>This is a new appendix that did not appear in the Draft EIR/EIS.</td>
</tr>
<tr>
<td>Appendix C: Management Indicator Species Report</td>
<td>This appendix includes the Management Indicator Species Report.</td>
<td>This appendix was included in the Draft EIR/EIS as Appendix F and is included in this Final EIS as Appendix C.</td>
</tr>
<tr>
<td>Appendix D: Final Programmatic Agreement with State Historic Preservation Officer</td>
<td>This appendix includes the signed Final Programmatic Agreement with the State Historic Preservation Officer.</td>
<td>This is a new appendix that did not appear in the Draft EIR/EIS.</td>
</tr>
<tr>
<td>Appendix E: Supplemental Draft EIS Comments and Responses</td>
<td>This appendix presents comments received on the Supplemental Draft EIS during the public review period, along with responses to those comments.</td>
<td>This is a new appendix that did not appear in the Draft EIR/EIS.</td>
</tr>
<tr>
<td>Appendix F: Draft EIR/EIS Comments and Responses</td>
<td>This appendix presents comments received on the Draft EIR/EIS during the public review period, along with responses to those comments.</td>
<td>This is a new appendix that did not appear in the Draft EIR/EIS. The responses to comments may reference those presented in the CPUC’s Final EIR.</td>
</tr>
</tbody>
</table>

* The following appendices included in the Draft EIR/EIS are not reproduced in this Final EIS: Appendix A – Alternatives Screening Report; Appendix B – Notices and Angeles National Forest Contact List; Appendix D – Project Road Crossings; and Appendix E – Summary of the PdV Wind Energy Project EIR. These appendices are all available upon request to the lead agencies and are available on the Project website at: ftp://ftp.cpuc.ca.gov/gopher-data/environ/tehachapi_renewables/TRTP.htm.