Executive Summary

ES.1 Introduction

On June 29, 2007, Southern California Edison (SCE) submitted Application No. A.07-06-031 to the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN), as required for the construction and operation of the proposed Tehachapi Renewable Transmission Project (TRTP or "proposed Project"). With the CPCN application, SCE also submitted its Proponent's Environmental Assessment (PEA) for the proposed Project. Because the proposed transmission line (T/L) would traverse approximately 42 miles of National Forest System (NFS) lands, SCE also 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 Angeles National Forest (ANF). Because the proposed Project also crosses lands owned 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. In addition, portions of Alternative 4 (see Section ES.3 below) cross land owned by the California Department of Parks and Recreation (CDPR), which would require discretionary approvals from both the California State Parks and Recreation Commission and CDPR.

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 are addressed in Chapter 6 (Development of the Tehachapi Wind Resource Area) of this Environmental Impact Report/Statement (EIR/EIS). For the purposes of California Environmental Quality Act (CEQA) and National Environmental Policy Act (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).
- 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 EIR/EIS.

The CPUC is the State Lead Agency responsible for compliance with CEQA and the USDA Forest Service is the Federal Lead Agency responsible for compliance with NEPA. A joint document has been prepared by the Lead Agencies that consists of a Draft EIR prepared in compliance with State CEQA Guidelines and a Draft EIS prepared in compliance with NEPA guidance. The EIR/EIS discloses the environmental impacts expected to result from the construction and operation of SCE's proposed Project and mitigation measures, which if adopted by the Lead Agencies, could avoid or minimize significant

environmental effects. In accordance with CEQA/NEPA guidance, the EIR/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 owned 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). A summary of the components of the proposed Project and alternatives is presented in Table ES-1.

A wide range of potential alternatives were considered in the preparation of this Draft EIR/EIS and a screening process was used to identify alternatives that:

- Were feasible;
- Fulfilled the Project's purpose and need; and
- Addressed significant issues associated with SCE's proposed Project.

The process used to identify, evaluate, and screen potential alternatives is described in the Alternatives Screening Report in Appendix A of this EIR/EIS. The alternatives that met the CEQA/NEPA criteria and were carried forward for detailed analysis are fully described in Chapter 2 (Description of Alternatives) of this EIR/EIS. The alternatives, including SCE's proposed Project, are analyzed across 16 environmental issue areas in Chapter 3 (Affected Environment and Environmental Consequences) of this EIR/EIS. The EIR/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/CEQA by stressing: areas of controversy; issues raised by agencies and the public; issues to be resolved; choices among alternatives; and major conclusions.

Table ES-1. Summary Comparison of Components of the Proposed Project and Alternatives

	Alternative 2 (SCE's Proposed Project)	Alternative 3 (West Lancaster)	Alternative 4 (Chino Hills Routes)	Alternative 5 (Partial Underground)	Alternative 6 (Max. Helicopter in ANF)	Alternative 7 (66-kV Subtransmission)
Overall Project Construction						
Total length of 500-kV and 220-kV T/L (miles)	172.9	173.3	Route A: 157.2 Route B: 160.8 Route C: 162.8 Route D: 160.8	172.9	172.9	172.9
Total number of new transmission structures (not including 66-kV sub-T/Ls)	853	852	Route A: 762 Route B: 781 Route C: 802 Route D: 791	838	853	853
Total land disturbance (acres, ±15%) (Construction / Permanent)	~1,538 / ~277	~1,538 / ~277	Route A: ~1,512 / ~291 Route B: ~1,539 / ~281 Route C: ~1,567 / ~287 Route D: ~1,549 / ~290	~1,563 / ~280	~1,456 / ~230	~1,538* / ~277*
On NFS lands	~272 / ~109	~272 / 109	~272 / ~109	~272 / ~109	~203 / ~62	~272 / ~109
Segment 10: New Whirlwind – Windhub 500-kV T/L						
Segment Length (miles)	16.8	16.8	16.8	16.8	16.8	16.8
New transmission structures	96	96	96	96	96	96
Segment 4: Whirlwind 500/220 kV T/L Elements						
Segment Length (miles)	19.6	20.0	19.6	19.6	19.6	19.6
New transmission structures	165	164	165	165	165	165
Segment 5: Antelope – Vincent No. 2 500-kV T/L						
Segment Length (miles)	17.8	17.8	17.8	17.8	17.8	17.8
New transmission structures	67	67	67	67	67	67
Segment 11: New Mesa – Vincent (via Gould) 500/220-kV T/L						
Segment Length (miles)	36.2	36.2	36.2	36.2	36.2	36.2
Distance on NFS lands (miles)	20.4	20.4	20.4	20.4	20.4	20.4
New transmission structures**	76	76	76	76	76	76
No. on NFS lands[1]	59	59	59	59	59	59
No. constructed by helicopter	16	16	16	16	56	16
Helicopter staging areas	7	7	7	7	4	7
No. on NFS lands	4	4	4	4	3	4
Total new/improved roads (±15%)	~40.05 miles	~40.05 miles	~40.05 miles	~40.05 miles	~23.13 miles	~40.05 miles
On NFS lands (±15%)	~32.83 miles	~32.83 miles	~32.83 miles	~32.83 miles	~16.01 miles	~32.83 miles
Newly constructed roads on NFS lands (±15%)	~1.35 miles	~1.35 miles	~1.35 miles	~1.35 miles	~0.36 miles	~1.35 miles
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						
Segment Length (miles)	26.9	26.9	26.9	26.9	26.9	26.9
Distance on NFS lands (miles)	21.85	21.85	21.85	21.85	21.85	21.85

[1] There are a total of 68 structures on NFS lands in Segment 11; where 59 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

	Alternative 2 (SCE's Proposed Project)	Alternative 3 (West Lancaster)	Alternative 4 (Chino Hills Routes)	Alternative 5 (Partial Underground)	Alternative 6 (Max. Helicopter in ANF)	Alternative 7 (66-kV Subtransmission)
New transmission structures	138	138	138	138	138	138
No. on NFS lands	105	105	105	105	105	105
No. constructed by helicopter	17	17	17	17	87	17
Helicopter staging areas	5	5	5	5	7	5
No. on NFS lands	4	4	4	4	7	4
Total new/improved roads (±15%)	~60.79 miles	~60.79 miles	~60.79 miles	~60.79 miles	~35.22 miles	~60.79 miles
On NFS lands (±15%)	~58.13 miles	~58.13 miles	~58.13 miles	~58.13 miles	~32.55 miles	~58.13 miles
Newly constructed roads on NFS lands (±15%)	~2.85 miles	~2.85 miles	~2.85 miles	~2.85 miles	~0.30 mile	~2.85 miles
Segment 7: 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						
Segment Length (miles)	15.8	15.8	15.8	15.8	15.8	15.8
New transmission structures	85	85	85	85	85	85
New subtransmission structures	150	150	150	150	150	128
Segment 8: Section of New Mira Loma – Vincent 500-kV T/L						
Segment Length (miles) Segment 8A/8C	33.0	33.0	Route A: 23.2 Route B: 26.7 Route C: 22.7 Route D: 26.8	33.0	33.0	33.0
Segment 8B	6.8	6.8	None	6.8	6.8	6.8
New transmission / subtransmission structures	226 / 55	226 / 55	Route A: 135 / 0 Route B: 154 / 0 Route C: 175 / 0 Route D: 164 / 0	211 / 55	226 / 55	226 / 45
Components within Chino Hills State Park	None	None	Route A: 2.3-mile T/L; Switching station. Route B: 4.9-mile T/L. Route C: 3.1-mile T/L; Remove 25 structures. Route D: 1.4-mile T/L.	None	None	None
Segment 9: Substation Facilities						
New Whirlwind Substation (area)	65 acres	65 acres	65 acres	65 acres	65 acres	65 acres
Antelope & Vincent Substations	Expand/upgrade (500-kV & 220-kV equipment)	Expand/upgrade (500-kV & 220-kV equipment)	Expand/upgrade (500-kV & 220-kV equipment)	Expand/upgrade (500-kV & 220-kV equipment)	Expand/upgrade (500-kV & 220-kV equipment)	Expand/upgrade (500-kV & 220-kV equipment)
Mesa & Gould Substations	Upgrade (220-kV)	Upgrade (220-kVt)	Upgrade (220-kV)	Upgrade (220-kV)	Upgrade (220-kV)	Upgrade (220-kV)
Mira Loma Substation	Upgrade (500-kV)	Upgrade (500-kV)	No upgrades	Upgrade (500-kV)	Upgrade (500-kV)	Upgrade (500-kV)

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

* Alternative 7 would have some additional temporary disturbance associated with underground construction of the 66-kV subtransmission lines in Segment 7 through 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 also be required for the new approximately 1,200 foot ROW for the San Gabriel River crossing within Segment 8A associated with the Whittier Narrows Overhead Re-Route.

** 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.

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

The CPUC and Forest Service determined that the proposed Project could cause a significant adverse effect on the environment and, therefore, initiated the preparation of an EIR/EIS. The CPUC filed a Notice of Preparation (NOP) with the State Clearinghouse and the Forest Service published a Notice of Intent (NOI) in the *Federal Register*. 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 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) has expressed opposition to 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 feasible 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) has 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 is concerned that the replacement and relocation of transmission structures across the River Commons site will 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 detail in Sections 3.2 through 3.17 of this EIR/EIS.

Table ES-2. Environmental Resource/Issue Areas Identified During the Scoping Process

Issue/Resource Area	Topics Addressed in the Analysis	
Agricultural Resources	• Conversion of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance	• Interference with agricultural operations • Conflicts with Williamson Act contracts
Air Quality	• Generation of air pollutant emissions during construction and operation • Objectionable odors	• Compliance with applicable air quality management plans
Biological Resources	• Riparian habitat and other sensitive natural communities • Endangered and threatened species and critical habitat for such species • Federally protected wetlands as defined by Section 404 of the Clean Water Act	• Candidate, sensitive, and special-status species • Wildlife corridors • Conflicts with any local policies or ordinances protecting biological resources • Conflicts with an adopted Habitat Conservation Plan or Natural Communities Conservation Plan
Cultural Resources	• Historic properties or Traditional Cultural Properties • Historical resources or unique archaeological sites	• Cultural resources included in a local register of historical resources • Native American human remains

Table ES-2. Environmental Resource/Issue Areas Identified During the Scoping Process

Issue/Resource Area	Topics Addressed in the Analysis	
Environmental Contamination and Hazards	• Soil contamination, including flammable or toxic gases • Mobilization of contaminants currently existing in the soil	• Exposure of workers or the public to contaminated or hazardous materials
Geology, Soils, and Paleontology	• Unique geologic features or geologic features of unusual scientific value • Known mineral and energy resources • Triggering or acceleration of geologic processes, such as landslides or soil erosion • Earthquake-related ground rupture in the vicinity of major fault crossings	• Seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and surface cracking • Corrosive soils and other unsuitable soils • Potential for future slope failures on existing unstable slopes • Scientifically important paleontological resources
Hydrology and Water Quality	• Degradation of water quality • Depletion of groundwater supplies or interference with groundwater recharge	• Flood hazards • Erosion, siltation, and flood-related damage • Inundation by mudflow
Land Use	• Preclusion of permitted land uses	• Conflicts applicable federal, State or local land use plans, goals, or policies
Noise	• Temporary or periodic increases in ambient noise levels during construction	• Permanent increases in ambient noise levels in the vicinity of sensitive receptors
Public Services and Utilities	• Demand for public services • Interference with existing emergency access • Interruption of existing utility systems	• Effects on water treatment, wastewater treatment, or solid waste facilities • Water entitlements and resources
Socioeconomics	• Population, housing, and employment • Quality of life • Private property values	• Agricultural revenues • Public agency revenue
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 EIR/EIS. This section also summarizes each potential alternative that was eliminated from further consideration and, therefore, was not analyzed in detail in the EIR/EIS.

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 CPUC and Forest Service

in conjunction with the team preparing the EIR/EIS. Alternatives were also suggested by public agencies and the members of the public during the scoping period for the EIR/EIS (August-October 2007).

To determine the alternatives that would be analyzed in detail in this 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. 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 verses 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 (Appendix A), other ideas for potential alternatives were suggested by agencies and the public during the scoping period for the EIR/EIS (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 (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). A final alternative, 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. These seven alternatives are discussed below.

Overview of the Proposed Project and Alternatives

Below is an overview of the alternatives considered as part of this EIR/EIS. Pursuant to CEQA (Section 15126.6(a)) and 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, and (3) the alternative's ability to avoid or lessen adverse effects of SCE's proposed Project. As required under CEQA Section 15126.6(e) and 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 (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 the EIR/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. 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).

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. Four 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, and eliminate construction in Segments 8B and 8C between Chino Substation and Mira Loma Substation.

- **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 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 significant 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. 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 143 new 500-kV towers would be constructed by helicopter under this alternative: 87 along Segment 6 and 56 along Segment 11.

Alternative 7: 66-kV Subtransmission Alternative. This alternative is comprised of three 66-kV subtransmission line elements, including the following: (1) Undergrounding the existing 66-kV subtransmission line on Segment 7 through the River Commons Project as requested by the Board of Supervisors County of Los Angeles to minimize the Project's effects to passive recreation opportunities in the planned project area; (2) Re-routing and undergrounding the existing 66-kV subtransmission line around the Whittier Narrows Recreation area along Segment 7 to provide habitat enhancement for least Bell's vireos as identified by SCE; and (3) Re-routing the existing 66-kV subtransmission line around the Whittier Narrows Recreation Area along Segment 8A to provide habitat enhancement for least Bell's vireos as identified by SCE.

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; 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 the EIR/EIS, these impacts would be less than significant without mitigation (Class III) or would be reduced to less than significant with mitigation (Class II).

Significant and unavoidable impacts (Class I) associated with Project construction, operation, and maintenance are summarized in Section ES.4.1, below. Significant impacts that can be reduced to less-than-significant levels with mitigation (Class II) are summarized in Section ES.4.2. For descriptions of less-than-significant impacts that do not require mitigation (Class III), see Sections 3.2 through 3.17 of the EIR/EIS.

ES.4.1 Significant and Unavoidable Impacts (Class I)

Significant impacts (Class I) resulting from the proposed Project and alternatives are summarized below. Refer to Sections 3.2 through 3.17 of the EIR/EIS for a complete description of these impacts.

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), 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 significance thresholds. In addition, the NOx and PM10 emissions from the proposed Project and alternatives would remain above the Antelope Valley Air Quality Management District (AVAQMD) daily significance threshold values. Therefore, the daily regional emissions from the proposed Project and alternatives would cause significant and unavoidable temporary impacts to air quality in these two 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 a significant and unavoidable temporary impact on local sensitive receptors.

ES.4.1.2 Biological Resources

As described in Section 3.4 (Biological Resources), impacts to vegetation and wildlife may occur in a variety of ways. Clearing and grading associated with the placement of transmission structures, construction of helicopter staging areas, and the construction and widening of access and spur roads may result in the alteration of soil conditions, including the loss of native seed banks and changes to the topography and drainage of a site such that the capability of the habitat to support native vegetation would be impaired. Construction would affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns, causing animals to temporarily avoid areas adjacent to the construction zone.

Due to the narrow area of disturbance along the Project route and the short duration of disturbance, many common wildlife species occurring along the transmission line corridors are expected to quickly re-colonize the area after construction activities have been completed. However, re-colonization rates depend on the rate of revegetation at each disturbed site, with slower wildlife re-colonization in vegetation communities that are difficult to restore and slow to recover from disturbance. The use of access roads would also result in the temporary decline of species in the immediate vicinity of the road; however, the effects of traffic are typically short term in duration and vehicle speeds would be limited. Project-related effects would be minimized through the implementation of mitigation measures described in Section 3.4 (Biological Resources) that are designed to educate workers of the presence and sensitivity of wildlife that may occur in the Project area; limit the work that may occur in Riparian Conservation Areas (RCAs); reduce the effect of fugitive dust on adjacent areas through dust control and reduced vehicle traffic; restore habitat at the conclusion of construction; and control for noxious weeds.

ES.4.1.3 Cultural Resources

As described in Section 3.5 (Cultural Resources), direct impacts from the proposed Project and alternatives may be avoided through minor design modifications, and Project effects would be reduced to a less-than-significant level by avoidance and protection measures. However, it is important to note that if

direct impacts to National Register of Historic Places (NRHP) properties eligible under Criterion d (significant data potential) are unavoidable, mitigation through data recovery would reduce impacts, but, under the National Historic Preservation Act (NHPA) regulations, effects would still be considered adverse (Class I). Likewise, if properties eligible for the NRHP under Criteria a, b, or c data recovery could not reduce impacts to a less-than-significant level, then effects would be considered adverse (Class I). In addition, exposure of unanticipated Native American human remains or sacred features during construction of the proposed Project and alternatives would be a significant and unavoidable impact to the remains and an adverse effect under the regulations in the NHPA. Implementation of mitigation measures would reduce the severity of impacts to the extent feasible, but would not reduce impacts to a less-than-significant level.

ES.4.1.4 Land Use

As described in Section 3.9 (Land Use), construction of the proposed Project and all alternatives except Alternatives 4 and 5 would result in impacts that either would not be significant and would not require mitigation (Class III) or would be reduced to a less-than-significant level with implementation of recommended mitigation measures (Class II).

Alternative 4

As described in Section 3.9 (Land Use), Routes A, B, C 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. The implementation of Land Use mitigation measures, in conjunction with the mitigation measures provided in the following resource/issue areas: Air Quality, Noise, Traffic and Transportation, Biological Resources, and Wilderness and Recreation, would lessen construction-related impacts within the Park, but it is not anticipated that these mitigation measures would reduce impacts to a less-than-significant level and, as a result, impacts would be significant and unavoidable.

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 significant 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 considered a significant and unavoidable 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 considered a significant and unavoidable impact.

ES.4.1.5 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, significant construction-related noise impacts cannot be reduced to a less-than-significant level.

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 a significant and unavoidable impact.

ES.4.1.6 Visual Resources

Section 3.16 (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 significant and unavoidable. There are no mitigation measures available to make vehicles, heavy equipment, helicopters, and other related components less visible during construction.

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. 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 a significant and 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 may still be considered significant due to the increase in structure size compared to the existing structures.

ES.4.1.7 Wildfire Prevention and Suppression

As described in Section 3.15 (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 space would not guarantee structure protection during severe fire

weather, and the potential for the Project to ignite a wildfire would remain significant overall. 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 remain significant and unavoidable.

The major findings of the EIR/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, along with a summary of the significant impacts that would be expected from the construction and operation of the proposed Project and alternatives.

ES.4.2 Less than Significant Impacts with Mitigation (Class II)

Impacts of the proposed Project and alternatives that would be less than significant after implementation of recommended mitigation measures (Class II) are summarized below. The mitigation measures that would be required to reduce impacts to less-than-significant levels are identified and described in Sections 3.2 through 3.17 of the EIR/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.

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.

Air Quality. The significant and unavoidable (Class I) 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, the air quality provisions of the Angeles National Forest Strategy, and other applicable air quality management plans in the Project area.

Biological Resources. The significant and unavoidable (Class I) Biological Resources impacts are summarized above in Section ES.4.1. 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 and critical habitat for the coastal California gnatcatcher; potential loss of California red-legged frog, 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; disturbance to nesting Swainson's hawks and/or loss of foraging habitat for Swainson's hawks; and electrocution of State and/or federally protected birds. Additionally, effects on candidate, sensitive, or special-status species would include the following: loss of plant species; mortality or injury of and loss of nesting habitat for southwestern pond turtles, two-striped garter snakes, south coast garter snakes, Coast Range newts, terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species; disturbance of wintering mountain plovers; loss of occupied burrowing owl habitat and California spotted owl habitat; disturbance of nesting California spotted owls and other avian species of concern and special-status bat species (including as a result of transmission line strikes); mortality and loss of habitat of San Diego desert woodrats, ringtails, and American badgers. Project effects on federally protected

wetlands would include loss of wetlands. Finally, Project interference with native fish or wildlife movements, corridors, or nursery sites would include impedance of desert tortoise movement as a result of habitat modification, as well as potential impacts to Management Indicator Species.

Cultural Resources. The significant and unavoidable (Class I) Cultural Resources impacts are summarized above in Section ES.4.1. Construction of the proposed Project or an alternative would affect historic properties by diminishing the integrity of properties eligible for inclusion in the National Register of Historic Places (NRHP). 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).

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.

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.

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 only). 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.

Land Use. The significant and unavoidable (Class I) 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 (Alternatives 2 through 7), and non-residential land uses (Class I for Alternatives 4 and 5). Operation and maintenance would result in long-term disruption of existing and planned non-residential land uses (Class I for Alternatives 4 and 5), and would conflict with relevant federal, State, or local land use plans, goals, and/or policies (Class I for Alternative 4).

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. Additionally, the amount of waste material generated during construction may not be recycled in compliance with all federal, State, and/or local laws, regulations, and standards relating to solid waste.

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).

Visual Resources. The significant and unavoidable (Class I) 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 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 scenic trail viewshed as a result of installing permanent features including transmission structures.

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. 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.

Wildfire Prevention and Suppression. The significant and unavoidable (Class I) impacts related to Wildfire Prevention and Suppression, specifically related to 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.

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.

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Agricultural Resources					
Convert Farmland to non-agricultural use (Criterion AG1)	Construction activities would result in temporary and permanent impacts to Farmland. (Impact AG-1)	Class II	This impact is considered cumulatively considerable.	Class I	AG-1: Coordinate construction activities with agricultural landowners
	Operation would permanently convert Farmland to non-agricultural use. (Impact AG-2)	Class III	This impact is considered cumulatively considerable.	Class I	Not Available
Interfere with agricultural operations (Criterion AG2)	Construction activities would interfere with agricultural operations. (Impact AG-3)	Class II	This impact is considered cumulatively considerable.	Class I	AG-1
	Operation would interfere with agricultural operations. (Impact AG-4)	Class II	This impact is considered cumulatively considerable.	Class I	AG-1
Air Quality					
Emissions of air pollutants would exceed any SCAQMD, AVAQMD, or KCAPCD regional air quality standard (Criterion AIR1)	Construction emissions would exceed the SCAQMD, AVAQMD, and/or KCAPCD regional emission thresholds. (Impact AQ-1)	Class I	In the event that any currently unknown projects, would be constructed concurrently with TRTP in the SCAQMD, KCAPCD, and AVAQMD jurisdictions then the proposed Project would have cumulatively significant impacts in those jurisdictions.	Class I	AQ-1a: Implement Construction Fugitive Dust Control Plan. AQ-1b: Off-road Diesel-fueled Equipment Standards. AQ-1c: Limit Vehicle Traffic and Equipment Use. AQ-1d: Heavy Duty Diesel Haul Vehicle On-road Equipment Standards. AQ-1e: On-road Vehicles Standards. AQ-1f: Properly Maintain Mechanical Equipment. AQ-1g: Restrict Engine Idling to 5 Minutes. AQ-1h: Schedule Deliveries Outside of Peak Traffic Hours. AQ-1i: Off-road Gasoline-fueled Equipment Standards. AQ-1j: Reduction of Helicopter Emissions.
	Operating emissions would exceed the SCAQMD, AVAQMD, and KCAPCD regional emission thresholds. (Impact AQ-2)	Class IV	The proposed Project's operation will have a net emission decrease, so it will not contribute to regional emissions and would have a less-than-significant cumulative regional impact.	Class III	None recommended
SCAQMD Localized Significance Thresholds (Criterion AIR2)	Construction of the Project would expose sensitive receptors to substantial pollutant concentrations. (Impact AQ-3)	Class I	Would result in cumulatively significant impacts to sensitive receptors after mitigation.	Class I	AQ-1a to AQ-1j
	Operation of the Project would expose sensitive receptors to substantial pollutant concentrations. (Impact AQ-4)	Class III	Less-than-significant cumulative localized impact to sensitive receptors.	Class III	None recommended
Toxic air contaminant emissions would exceed SCAQMD risk thresholds. (Criterion AIR3)	Construction or operation of the Project would generate toxic air contaminant emissions that would exceed SCAQMD risk thresholds. (Impact AQ-5)	Class III	Less-than-significant cumulative health risk.	Class III	None recommended
Result in non-compliance with the Federal General Conformity Rule (40 CFR Parts 6, 51, and 93) requirements. (Criterion AIR 4)	The Project would not conform to Federal General Conformity Rules. (Impact AQ-6)	Class II	This impact is strictly applicable to single project evaluation.	No Impact	AQ-6: General Conformity Emission Offset Mitigation
Expose a substantial number of people to objectionable odors. (Criterion AIR5)	The Project would create objectionable odors. (Impact AQ-7)	Class III	Odor impacts Would not be cumulatively significant	Class III	None recommended
Conflict with air quality provisions of the Angeles National Forest Strategy. (Criterion AIR 6)	The Project would not conform to Angeles National Forest air quality strategies. (Impact AQ-8)	Class II	This impact is strictly applicable to single project evaluation.	No Impact	AQ-1a to AQ-1j
Inconsistent with the current approved Air Quality Management Plans. (Criterion AIR 7)	The Project would not conform with Applicable Air Quality Management Plans. (Impact AQ-9)	Class II	This impact is strictly applicable to single project evaluation.	No Impact	AQ-1a, AQ-1b, and AQ-1d
Greenhouse gas emissions (Criterion AIR 8)	Emissions would contribute to climate change. (Impact AQ-10)	Class IV	The Project will allow a reduction in GHG emissions from electricity generation resulting in beneficial impacts and would not result in impacts that would be cumulatively considerable.	No Impact	None recommended

[2] Unless otherwise indicated, significance determinations are applicable to all alternatives.
[3] Unless otherwise indicated, cumulative significance determinations are applicable to all alternatives except the No Project/Action Alternative (Alternative 1).

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Biological Resources					
Impacts to riparian or sensitive natural communities (Criterion BIO1)	Construction activities would result in temporary and permanent losses of native vegetation. (Impact B-1)	Class II	The impacts to native vegetation would be considered cumulatively significant and unavoidable.	Class I	B-1a: Provide restoration/compensation for impacts to native vegetation communities B-1b: Implement a Worker Environmental Awareness Program B-1c: Treat cut tree stumps with Sporax AQ-1a: Implement Construction Fugitive Dust Control Plan H-1a: Implementation of an Erosion Control Plan and demonstrate compliance with water quality permits
	Loss of sensitive desert wash or riparian habitat. (Impact B-2)	Class II	The impacts to sensitive desert wash and riparian habitat types would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, AQ-1a, H-1a B-2: Implement RCA Treatment Plan
	Establishment and spread of noxious weeds. (Impact B-3)	Class II	The introduction and spread of noxious weeds would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-2 B-3a: Prepare and implement a Weed Control Plan B-3b: Remove weed seed sources from construction routes B-3c: Remove weed seed sources from assembly yards/staging areas
	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)	Class II	Would be potentially adverse and cumulatively considerable.	Class I	B-1a, B-1b, B-2, B-3a, AQ-1a, H-1a
	Construction activities conducted during the breeding season would result in the loss of nesting birds or raptors. (Impact B-5)	Class II	Significant because the impact substantially reduces the acreage of several habitat types that are important for nesting birds and limited in distribution in Southern California, such as riparian habitats.	Class I	B-1a, B-1b, B-3a, AQ-1a B-5: Conduct pre-construction surveys and monitoring for breeding birds
	Loss of foraging habitat for wildlife. (Impact B-6)	Class II	Would be significant, because the impact substantially reduces the acreage of several habitat types that are important for wildlife and limited in distribution in southern California.	Class I	B-1a, B-1b, B-2, B-3a, AQ-1a, H-1a
Impacts to endangered or threatened species, or proposed or critical habitat (Criterion BIO2)	Disturbance of endangered, threatened, or proposed plant species or their habitat. (Impact B-7)	Class II	Would be significant, because the impact substantially reduces the acreage of suitable habitat for multiple candidate, sensitive, and special-status plants in the region.	Class I	B-1a, B-1b, B-3a, AQ-1a, H-1a B-7: Conduct protocol surveys for rare plants and avoid populations of listed plants
	Loss of California red-legged frogs and mountain yellow-legged frogs. (Impact B-8)	Class II	Impacts would be cumulatively considerable 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 extirpation in Southern California.	Class I	B-1a, B-1b, B-2, B-3a, AQ-1a, H-1a B-8a: Conduct protocol surveys for California red-legged frogs and implement avoidance measures B-8b: Conduct biological monitoring H-1b: Dry weather construction
	Loss of arroyo toads. (Impact B-9)	Class II	Would be cumulatively considerable.	Class I	B-1a, B-1b, B-2, B-3a, B-8b, AQ-1a, H-1a, H-1b B-9: Conduct protocol surveys for arroyo toads and implement avoidance measures
	Loss of desert tortoises. (Impact B-10)	Class II	Impacts would be cumulatively considerable.	Class I	B-1a, B-1b, B-3a, AQ-1a B-10: Conduct protocol surveys for desert tortoise and implement avoidance measures
	Mortality of desert tortoises as a result of increased predation by common ravens. (Impact B-11)	Class III	A significant increase in cumulative predation of the desert tortoise, if present, by common ravens is not expected.	Class III	None recommended
	Loss of special-status fish. (Impact B-12)	Class II	Impacts to special-status fish species or their habitat would be cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-2, B-3a, B-8b, H-1a, H-1b B-12: Implement avoidance and minimization measures for fish and aquatic organisms
	Loss of critical habitat for the Santa Ana sucker. (Impact B-13)	Class II	Impacts to Santa Ana sucker would be cumulatively significant.	Class I	B-1a, B-1b, B-2, B-3a, B-8b, H-1a, H-1b, B-12
	Loss of California condors. (Impact B-14)	Class II	Impacts to California condors would be cumulatively significant.	Class I	B-1a, B-1b, B-2, B-3a, B-8b B-14: Remove trash and micro-trash from the work area daily
	Disturbance of nesting southwestern willow flycatchers, least Bell's vireos, yellow-billed cuckoos, or their habitat. (Impact B-15)	Class II	The combined effect of the proposed Project with other past projects and future projects would be significant, because their impact increases the level of disturbance to least Bell's vireos within the project area. Disturbance to southwestern willow flycatchers and yellow-billed cuckoos, if present, would also occur in riparian areas of the proposed Project and would combine with the effects of other projects in the area.	Class I	B-1a, B-1b, B-2, B-3a, B-5, AQ-1a, H-1a B-15: Conduct protocol surveys for listed riparian birds and avoid occupied habitat

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
	Loss of coastal California gnatcatchers. (Impact B-16)	Class II	The impacts to coastal California gnatcatchers would be considered cumulatively significant and unavoidable.	Class I	B-1b, AQ-1a B-16: Conduct focused surveys for coastal California gnatcatcher and implement avoidance measures
	Loss of critical and/or occupied habitat of the coastal California gnatcatcher. (Impact B-17)	Class II	The impacts to coastal California gnatcatcher habitat would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-3a, B-16, AQ-1a B-17: Preserve off-site habitat and/or habitat restoration for the coastal California gnatcatcher
	Disturbance to nesting Swainson's hawks. (Impact B-18)	Class II	Impacts of the Project to nesting Swainson's hawks have the potential to combine with similar impacts of other projects and would be considered cumulatively significant and unavoidable.	Class I	B-1b, AQ-1a B-18a: Conduct pre-construction surveys for Swainson's hawks B-18b: Removal of nest trees for Swainson's hawks
	Loss of foraging habitat for Swainson's hawks. (Impact B-19)	Class II	Impacts of the Project to Swainson's hawk foraging habitat have the potential to combine with similar impacts of other projects and would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-3a, B-18a, AQ-1a B-19: Compensate for loss of foraging habitat for Swainson's hawks
	Electrocution of State and/or federally protected birds. (Impact B-20)	Class III	Impacts of transmission lines on State and federally protected birds would be cumulatively significant and unavoidable.	Class I	None recommended
	Collision with overhead wires by State and/or federally protected birds. (Impact B-21)	Class III	As the flight paths become more constrictive and larger numbers of transmission lines, towers, structures, and vehicles occur in the region the numbers of birds subject to collision will continue to rise; therefore, impacts would be cumulatively significant and unavoidable.	Class I	None recommended
	Disturbance to Mohave ground squirrels. (Impact B-22)	Class II	Impacts of the Project to Mohave ground squirrels (if present) have the potential to combine with similar impacts of other projects and would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a B-22a: Conduct protocol surveys for Mohave ground squirrels B-22b: Implement construction monitoring for Mohave ground squirrels B-22c: Preserve off-site habitat for the Mohave ground squirrel
Effects on a candidate, sensitive, or special-status species (Criterion BIO3)	Loss of candidate, Forest Service Sensitive, or special-status plant species. (Impact B-23)	Class II	The impacts to special-status plants would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, B-7, AQ-1a, H-1a B-23: Preserve offsite habitat/management of existing populations of special-status plants
	Mortality or injury of, and loss of nesting habitat for southwestern pond turtles. (Impact B-24)	Class II	Mortality, injury, and loss of nesting habitat for southwestern pond turtles would be cumulatively considerable.	Class I	B-1a, B-1b, B-3a, B-12, AQ-1a, H-1a, H-1b B-24: Conduct focused presence/absence surveys for southwestern pond turtle and implement monitoring, avoidance, and minimization measures
	Injury or mortality of, and loss of habitat for, two-striped garter snakes and south coast garter snakes. (Impact B-25)	Class II	The impacts to two-striped garter snakes and south coast garter snakes would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, B-12, AQ-1a, H-1a, H-1b B-25: Conduct focused surveys for the two-striped garter snakes and south coast garter snakes and implement monitoring, avoidance, and minimization measures
	Injury or mortality of, and loss of habitat for, Coast Range newts. (Impact B-26)	Class II	The impacts to coast range newts, would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a, H-1a, H-1b B-26: Conduct focused surveys for coast range newt and implement monitoring, avoidance, and minimization measures
	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)	Class II	The impacts to special-status terrestrial herpetofauna would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a B-27: Monitoring, avoidance and minimization measures for special status terrestrial herpetofauna
	Disturbance of wintering mountain plovers. (Impact B-28)	Class III	The impacts to wintering mountain plovers would be considered cumulatively significant and unavoidable.	Class I	None recommended
	Loss of occupied burrowing owl habitat. (Impact B-29)	Class II	Construction-related impacts to occupied burrowing owl habitat would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a B-29: Implement CDFG protocol for burrowing owls
	Loss of occupied California spotted owl habitat. (Impact B-30)	Class II	Construction-related impacts to occupied California spotted owl habitat would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-3a, AQ-1a B-30: Conduct pre- and during construction nest surveys for spotted owl
	Disturbance of nesting California spotted owls. (Impact B-31)	Class II	Construction-related disturbance to nesting California spotted owls would be considered cumulatively significant and unavoidable.	Class I	B-1b, B-30, AQ-1a
	Disturbance of nesting avian "species of special concern". (Impact B-32)	Class II	Construction-related impacts to nesting avian species of special concern would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-2, B-3a, B-5, AQ-1a

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
	Mortality of, and loss of habitat for, special-status bat species. (Impact B-33)	Class II	Impact would be significant, because the impact substantially reduces the acreage of suitable roosting habitat in the region.	Class I	B-1a, B-1b, B-2, B-3a, AQ-1a B-33a: Maternity colony or hibernaculum surveys for roosting bats B-33b: Provision of substitute roosting bat habitat B-33c: Exclude bats prior to demolition of roosts
	Transmission line strikes by special-status bat species. (Impact B-34)	Class III	The frequency of transmission line strikes by special-status bat 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 will be less than significant.	Class III	None recommended
	Mortality of, and loss of habitat for, special-status mammals. (Impact B-35)	Class II	Construction-related impacts to special-status mammals would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-2, B-3a, AQ-1a
	Mortality of San Diego desert woodrats. (Impact B-36)	Class II	The impacts to San Diego desert woodrats would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a B-36: Conduct focused surveys for San Diego desert woodrat and passively relocate
	Mortality of, and loss of habitat for, the ringtail. (Impact B-37)	Class II	The impacts to the ringtail would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-3a, AQ-1a, H-1a B-37: Conduct focused surveys for ringtail and passively relocate ringtails during the non-breeding season
	Mortality of American badgers. (Impact B-38)	Class II	Would be significant, because the impact substantially reduces the acreage of suitable habitat in these two regions.	Class I	B-1a, B-1b, B-3a, AQ-1a B-38: Conduct focused surveys for American badgers and passively relocate during the non-breeding season
Effects on federally protected wetlands (Criterion BIO4)	Loss of wetland habitats. (Impact B-39)	Class II	Impacts to wetland habitats would be considered cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-2, B-3a, B-12, AQ-1a, H-1a
Interference with native fish or wildlife movements, corridors, or nursery sites (Criterion BIO5)	Interference with established bird and bat migratory corridors. (Impact B-40)	Class III (Alts. 2, 3, 5) Class II (Alts. 4, 6, 7)	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 less than significant.	Class III	None recommended
	Corona noise would result in disturbance to wildlife. (Impact B-41)	Class III	Corona noise from past, present, and future projects (including the proposed Project) is not expected to combine with noise from other projects in a cumulatively significant manner.	Class III	None recommended
	Effects to Management Indicator Species. (Impact B-42)	Class II	The cumulative impacts on Management Indicator Species resulting from the Project and other past, present, and reasonably foreseeable projects will be cumulatively significant and unavoidable.	Class I	B-1a, B-1b, B-1c, B-2, B-3a, B-3b, B-3c, B-5, B-8b, B-9, B-30, AQ-1a, H-1a, H-1b
Cultural Resources					
Adverse effect on historic properties (Criterion CR1)	Construction may diminish the integrity of properties eligible for inclusion in the National Register of Historic Places. (Impact C-1).	Class II	Preparation of regional cultural resources overviews and research designs, synthetic analysis and interpretation of cultural resources in regional perspective, and expanded public interpretation of resources might lessen the proposed Project's contribution to cumulative degradation of the regional resource base. If more than a few sites are impacted significantly, if the impacts are extensive, and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region, then the combination of those impacts with similar impacts of other projects would be cumulatively considerable.	Class I	C-1a: Development and Execution of a Programmatic Agreement C-1b: Inventory cultural resources in the APE C-1c: Avoid and protect resources C-1d: Evaluate the significance of cultural resources that cannot be avoided C-1e: Develop and implement a Historic Properties Treatment Plan C-1f: Conduct data recovery excavation or other actions to reduce adverse effects C-1g: Conduct cultural resources monitoring C-1h: Train construction personnel to identify cultural resources C-1i: Protect and monitor NRHP-eligible properties
Expose and/or damage to Native American human remains (Criterion CR3)	Native American human remains could be uncovered, exposed, and/or damaged during Construction. (Impact C-2)	Class I	Exposure of unanticipated Native American human remains or sacred features during construction would be a significant and unavoidable impact to the remains and an adverse effect under the regulations in the National Historic Preservation Act. Implementation of Mitigation Measures would reduce the severity of impacts to the extent feasible but would not reduce impacts to a level of less than significant. This impact is considered cumulatively considerable.	Class I	C-3: Treatment of human remains discovered during construction

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Environmental Contamination and Hazards					
Soil contamination, including flammable or toxic gases, during construction (Criterion ECH1)	Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities. (Impact E-1)	Class III	This impact is not considered cumulatively considerable.	Class III	None recommended
Mobilization of contaminants currently existing in the soil, creating potential pathways of exposure to humans or other sensitive receptors (Criterion ECH2)	Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites. (Impact E-2)	Class II	Impact is not considered cumulatively considerable.	Class III	E-2a: Perform Phase I ESAs along existing transmission line ROWs E-2b: Perform Phase II Investigations for potentially contaminated sites
	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)	Class II	No concurrent projects located immediately adjacent to the portions of the route located near landfills or oil wells have been identified. Therefore, this impact would not be cumulatively considerable.	Class III	E-3a: Determine if landfill gases are present E-3b: Implement Personnel Safety and Monitoring Measures E-3c: Verify location and status of abandoned oil and natural gas wells
	Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading. (Impact E-4)	Class II	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, this impact is not considered cumulatively considerable.	Class III	E-4a: Appoint individuals with correct training for sampling, data review, and regulatory coordination E-4b: Document compliance with APM HAZ-3
	Excavation or grading could result in mobilization of existing soil contamination or encountering ordnance from known munitions testing and disposal sites. (Impact E-6)	Class II (Alts 4C & 4D Only)	Impact is not considered cumulatively considerable.	Class III (Alts 4C & 4D Only)	E-6a: Provide ordinance recognition training E-6b: Detect and remove MEC from access roads
Contamination of soils or groundwater during operation of the Project, resulting in exposure of workers and/or the public to contaminated or hazardous materials (Criterion ECH3)	Soil or groundwater contamination could result from an accidental spill during operation. (Impact E-5)	Class III	Impact is not considered cumulatively considerable.	Class III	None recommended
Geology, Soils, and Paleontology					
Known mineral and/or energy resources (Criterion GEO2)	Project activities could interfere with access to known energy resources. (Impact G-1)	Class II	The proposed Project impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.	No Impact	G-1: Coordination with oil field operations
Triggering or acceleration of geologic processes, such as landslides, soil erosion, or loss of topsoil, during construction (Criterion GEO3)	Erosion could be triggered or accelerated due to construction activities. (Impact G-2)	Class II	The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented in the same area 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 cumulatively considerable.	No Impact	H-1a: Implement an Erosion Control Plan and demonstrate compliance with water quality permits
	Excavation and grading during construction activities could cause slope instability or trigger landslides. (Impact G-3)	Class II	Same as for Impact G-2.	No Impact	G-3: Conduct geological surveys for landslides and protect against slope instability
Exposure to potential risk of loss or injury due to earthquake-related ground rupture (Criterion GEO4)	Project structures could be damaged by surface fault rupture at crossings of active faults exposing people or structures to hazards. (Impact G-4)	Class II	Collapse of Project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people located adjacent to the Project route along Segments 5, 7, 8 and the southern portion of Segment 11. However, due to similar policies regarding construction within active fault zones that have been imposed on past projects and that will likely be imposed on reasonably foreseeable projects, this cumulative impact would be less than significant.	Class III	G-4a: Minimize Project structures within active fault zones G-4b: Prepare fault rupture contingency plans to minimize repair time for damaged transmission lines
Exposure to potential risk of loss or injury due to seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and/or surface cracking (Criterion GEO5)	Project structures could be damaged by seismically induced groundshaking and/or ground failure exposing people or structures to hazards. (Impact G-5)	Class II	Collapse of Project structures and adjacent structures due to seismically induced ground shaking and ground failure would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as other parallel and crossing transmission lines and substations, and residential and commercial developments located adjacent to the Project route along Segments 5, 7, 8 and the southern portion of Segment 11. However, due to similar policies regarding construction within areas of potential significant seismic shaking and seismically induced ground failures that have been imposed on past projects and that will likely be imposed on reasonably foreseeable projects, this cumulative impact would be less than significant.	Class III	G-3 G-5a: Reduce effects of groundshaking G-5b: Conduct geotechnical investigation for liquefaction
	Existing structures could be damaged by ground settlement along the tunnel exposing people or structures to hazards. (Impact G-9)	Class II (Alt 5 Only)	Impact would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects.	Class III (Alt 5 Only)	G-9: Conduct geotechnical analysis of settlement potential during design and implement a Subsidence Monitoring Program during construction to protect against ground settlement

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Exposure to potential risk of loss or injury where corrosive soils or other unsuitable soils are present (Criterion GEO6)	Project structures could be damaged by problematic soils exposing people or structures to hazards. (Impact G-6)	Class II	Same as Impact G-5.	Class III	G-6: Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design
Damage to Project structures due to slope failure (Criterion GEO7)	Transmission line structures could be damaged by landslides, earth flows, or debris slides, during operation. (Impact G-7)	Class II	Same as Impact G-5.	Class III	G-3
Destruction of unique paleontological resources (Criterion GEO8)	Grading and excavation could destroy paleontologic resources. (Impact G-8)	Class III	Should resources be discovered during construction of current and future projects, they would be subject to legal requirements designed to protect them, thereby reducing the effect of impacts to a less-than-significant level.	Class III	None recommended
Hydrology and Water Quality					
Water Quality Violations, Waste Discharges, or Polluted Runoff (Criterion HYD1)	Construction activities would degrade surface water quality through erosion and sedimentation. (Impact H-1)	Class II	Would produce a combined effect that would degrade surface water quality through erosion and sedimentation. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.	Class I	H-1a: Implement an Erosion Control Plan and demonstrate compliance with water quality permits H-1b: Dry weather construction B-2: Implement RCA Treatment Plan
	Construction activities would degrade water quality through the accidental release of potentially harmful or hazardous materials. (Impact H-2)	Class II	Would produce a combined effect that would degrade surface water quality through the accidental release of potentially harmful or hazardous materials. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.	Class I	H-1b
	Operation and maintenance activities would degrade water quality through the accidental release of potentially harmful or hazardous materials. (Impact H-3)	Class III	Would produce a combined effect that would degrade surface water quality through the accidental release of potentially harmful or hazardous materials. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.	Class III	None recommended
	Discharge of contaminated groundwater during dewatering operations would degrade surface water quality. (Impact H-6)	Class II (Alts 5 & 7 Only)	Would not likely produce a combined effect that would degrade surface water quality through discharge of contaminated groundwater.	No Impact (Alts 5 & 7 Only)	H-1a
Siltation, Erosion, or Other Flood-related Damage from Impeding or Redirecting Flood Flows through Placement of a Structure in a Stream or Flood Hazard Area (Criterion HYD3)	Project structures would cause erosion, sedimentation, or other flood-related damage by impeding flood flows. (Impact H-4)	Class II	For the Project this impact would be reduced to a less-than-significant level with implementation of mitigation measures, as would be required for present and foreseeable residential development projects. Therefore, the cumulative impact would be less than significant.	Class III	H-1a
Damage from Inundation by Mudflow (Criterion HYD5)	Project structures would be inundated by mudflow. (Impact H-5)	Class II	Would produce a combined effect that would increase the potential for Project structures to be inundated by mudflow. The contribution of the proposed Project to this impact is small and does not contribute considerably to cumulative effects.	Class III	G-3: Conduct geological surveys for landslides and protect against slope instability
Land Use					
Preclude a permitted land use, or create a disturbance that would diminish the function of a particular land use (Criterion LU1)	Construction of the Project would temporarily disrupt, displace, or preclude existing residential land uses. (Impact L-1)	Class II	No projects would be constructed at the same time as the proposed Project that would affect the residential land uses within 1,000 feet of the proposed Project's construction-related activities.	No Impact	L-1a: Construction liaison – Property owners L-1b: Advance notification of construction – Property owners L-1c: Quarterly construction updates – Property owners
	Construction of the Project would temporarily disrupt, displace, or preclude existing non-residential land uses. (Impact L-2)	Class II (Alts 2, 3, 6, 7) Class I (Alts 4 & 5)	Could produce a combined effect that would preclude the use of, disturb, or diminish the function of a particular land use within the study area. However, no projects would be constructed at the same time as the proposed Project that would affect the non-residential land uses within 1,000 feet of the proposed Project's construction-related activities. The construction of Alternative 4, Routes A through D, in combination with other proposed energy projects, would result in a significant 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 of this alternative, it would result in a significant and unavoidable cumulative impact to non-residential uses.	No Impact (Alts 2,3,6,7) Class I (Alt 4) Class I (Alt 5)	L-2a: Construction plan provisions – Non-residential property owners L-2b: Aircraft flight path and safety provisions and consultations
	Operation and maintenance of the Project would cause long-term disruption of existing and planned residential land uses. (Impact L-3)	Class III	Prior to construction of the proposed Project, regulatory approvals would be acquired for new and expanded ROWs and substation sites, as well as the rights to construct and operate the proposed Project with affected private property owners. Given that SCE would purchase or lease new and expanded substation sites and ROWs in full agreement with existing property owners, the Project's incremental contribution to the cumulative impact would be less than significant.	Class III	None recommended

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
	Operation and maintenance of the Project would cause long-term disruption of existing and planned non-residential land uses. (Impact L-4)	Class II (Alts 2, 3, 6, 7) Class I (Alts 4 & 5)	Could produce a combined effect that would preclude the use of, disturb, or diminish the function of a particular land use within the study area. However, mitigation measures would allow affected agencies to address and reconcile any future potential conflicts that the proposed Project may pose to the management and use of non-residential lands. The Project's incremental contribution to the cumulative impact would be less than significant. The construction, operation and maintenance of Alternative 4, Routes A through D, in combination with other proposed energy projects, would result in a significant 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 a significant and unavoidable cumulative impact to non-residential uses.	Class II (Alts 2,3,6,7) Class I (Alt 4) Class I (Alt 5)	L-4: Consult with federal, State and local agencies
Conflict with any applicable federal, State, or local land use plans, goals, or policies (Criterion LU2)	Construction, operation or maintenance of the Project would conflict with relevant federal, State, or local land use plans, goals, or policies. (Impact L-5)	Class II (All Except Alt 4) Class I (Alt 4 Only)	The proposed Project would be consistent with USDA Forest Service land use policies and local land use plans and policies 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 that would be cumulatively considerable. Routes A through D of Alternative 4 would conflict with the Chino Hills State Park (CHSP) General Plan, and the expansion of existing ROW or the creation of new ROW within the CHSP may facilitate the siting of future transmission lines within the Park, which would further conflict with the goals and guidelines of the CHSP General Plan. The contribution of the Alternative 4 to this impact would be significant.	Class III (All Except Alt 4) Class I (Alt 4 Only)	L-2b, L-4
Noise					
Substantial temporary or periodic increase in ambient noise levels during construction in the vicinity of sensitive receptors above existing levels (Criterion NOI1)	Construction noise would be substantially higher than ambient noise and would disturb sensitive receptors located within 200 feet of construction activities resulting in a significant and unavoidable impact. (Impact N-1)	Class I	Could produce a combined effect that would potentially disturb sensitive receptors. The contribution of the proposed Project to this impact would be significant.	Class I	N-1a: Implement Best Management Practices for construction noise N-1b: Avoid sensitive receptors during mobile construction equipment use L-2b: Aircraft flight path and safety provisions and consultations)
	Construction noise levels would violate local standards. (Impact N-2)	Class I	Could produce a combined effect that would potentially violate local standards. The contribution of the proposed Project to this impact would be significant.	Class I	N-1a, N-1b, L-2b
Permanent and substantially higher levels of ambient noise source in the vicinity of sensitive receptors (Criterion NOI2)	Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines and substations. (Impact N-3)	Class I	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 significant.	Class I	None available
	Operational noise levels would violate local standards. (Impact N-4)	Class I	Could produce a combined effect that would potentially increase permanent noise levels that would violate local standards. The contribution of the proposed Project to this impact would be significant.	Class I	None available
Public Services and Utilities					
Increased demand for public services that cannot be readily met by existing public service providers and facilities (Criterion PSU1)	Emergency services would be needed if an accident or other emergency incident occurs at a construction site. (Impact PSU-1)	Class II	Could produce a combined effect that would potentially require emergency response services. The contribution of the proposed Project to this impact is not significant.	Class III	PSU-1a: Revise SCE's Fire Management Plan PSU-1b: Review of construction methods by county fire departments PSU-1c: Practice safe welding procedures PSU-1d: Fire preventive construction equipment requirements
Impede or interfere with existing public services emergency access (Criterion PSU2)	Temporary lane closures during the construction period would interfere with emergency response vehicles. (Impact PSU-2)	Class II	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 not significant.	Class III	T-1a: Prepare Traffic Control Plan
	Construction and operation would impede emergency aircraft response services. However, Project helicopters would be restricted by FAA rules on temporary flight restrictions from flying in designated areas, therefore eliminating any potential interference with aerial firefighting operations during a wildfire event in the areas surrounding the Project. (Impact PSU-3)	Class III	Interference with aerial operations; Project's contribution would be cumulatively considerable but less than significant, as all flight operations would be restricted by FAA rules.	Class III	None recommended

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Major reduction or interruption of existing utility systems or cause a collocation accident (Criterion PSU3)	Utility systems would be temporarily disrupted during the construction period. (Impact PSU-4)	Class II	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 provider/s in order to avoid multiple or extended disruptions, in accordance with Mitigation Measure PSU-4. Therefore, Impact PSU-4 would be cumulatively considerable but less than significant.	Class III	PSU-4: Notification of utility service interruption
	Public Works maintenance yards would be disrupted during the construction period. (Impact PSU-5)	Class II	Could produce a combined effect that would cause multiple disruptions and restrict access to Public Works maintenance yards; however, it is unlikely that the maintenance yards in the vicinity would be disrupted by activities from multiple construction sites. If a disruption is known to be unavoidable, SCE would coordinate with the appropriate Public Works Department/s in order to avoid multiple or extended disruptions. Therefore, Impact PSU-5 would be cumulatively considerable but less than significant.	Class III	PSU-5: Notification of public service interruption
Substantially change the ability of water treatment, wastewater treatment, or solid waste facilities to adequately supply water and accommodate solid waste and wastewater (Criterion PSU4)	Project construction would temporarily increase water use and Project operation would contribute to increased long-term water consumption. However, water requirements of the Project would not change the ability of the water suppliers to serve existing customers. (Impact PSU-6)	Class III	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.	Class III	None recommended
	Additional wastewater would be generated during Project construction and operation. However, the proposed Project would not place a significant burden on wastewater facilities serving the area and would not necessitate expansion of wastewater collection or treatment facilities serving the area. (Impact PSU-7)	Class III	Not expected to produce a combined effect that would exceed the capabilities of the wastewater facilities.	Class III	None recommended
	Additional solid waste would be generated during Project construction and operation. (Impact PSU-8)	Class III	Not expected to produce a combined effect that would generate waste and exceed the capacity of active disposal sites.	Class III	None recommended
Conflict with or be unable to adhere to federal, State, and/or local laws, regulations, or standards relating to solid waste (Criterion PSU6)	The amount of waste material recycled during construction activities would not adhere to State standards. (Impact PSU-9)	Class II	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 and would not be cumulatively considerable.	Not Cumulatively Considerable	PSU-9: Recycle construction waste
Socioeconomics [4]					
Private property values	Operation and maintenance activities would affect property values along the Project alignment. (Impact S-1)	Not Significant	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.	Not Significant	None recommended
Revenue decrease for agricultural landowners	Construction activities would cause a temporary decrease in revenues for agricultural landowners. (Impact S-2)	Not Significant	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 continuation of present usage.	Not Cumulatively Considerable	AG-1: Coordinate construction activities with agricultural landowners
Public agency revenue	Project activities would affect public agency revenue. (Impact S-3)	Not Significant	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.	Not Cumulatively Considerable	R-1e: SCE shall assist in the completion of backlogged maintenance activities in the ANF

[4] In accordance with State CEQA Guidelines §15131, economic and social effects are not be treated as significant effects on the environment.

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Traffic and Transportation					
Closure of roads or reduction of travel lanes (Criterion TRA1)	Closure of roads to through traffic or reduction of travel lanes would result in substantial congestion. (Impact T-1)	Class II	All projects requiring work within ROWs 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 significant impact.	Class III	T-1a: Prepare Traffic Control Plans T-1b: Restrict lane closures
Unacceptable level of service reduction to vicinity roads (Criterion TRA2)	Construction traffic would result in congestion on area roadways. (Impact T-2)	Class II	Mitigation Measures would effectively reduce the proposed Project's contribution to a cumulative impact by minimizing the amount of construction traffic on area roadways.	Class III	T-2: Prepare Construction Transportation Plan
Restricted access to properties (Criterion TRA3)	Underground construction activities would temporarily restrict access to properties. (Impact T-11)	Class II (Alt 7 Only)	If other projects required the use of the same public ROW at the same time as the proposed Project, the regulatory agency responsible for issuing the encroachment permit would ensure that work within a public road would not occur simultaneously with the proposed Project to avoid significant cumulative impacts.	Class III (Alt 7 Only)	T-11: Provide continuous access to properties
Restrict the movements of emergency vehicles (Criterion TRA4)	Construction activities could temporarily interfere with emergency response. (Impact T-3)	Class II	Mitigation Measures effectively 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.	Class III	T-1a, T-1b
Disruption to transit service (Criterion TRA5)	Construction activities could temporarily disrupt transit routes. (Impact T-4)	Class II	Mitigation Measures would 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.	Class III	T-4: Avoid disruption of bus service
Disruption to rail traffic (Criterion TRA6)	Construction activities would cause a temporary disruption to rail traffic or operations. (Impact T-5)	Class II	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.	No Impact	T-5: Obtain and comply with railroad permits
Impediment of pedestrian movements or bike paths (Criterion TRA7)	Construction activities could temporarily interfere with the use of pedestrian/bicycle paths. (Impact T-6)	Class II	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 safe passage as well as temporary detours for trail users.	Class III	T-6: Ensure pedestrian and bicycle circulation and safety
Reduction in the supply of parking spaces (Criterion TRA8)	Construction would result in localized shortages of public parking along the Project ROW. (Impact T-7)	Class II	This impact would occur in residential areas during daytime hours when street parking is most ample. Therefore, 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.	No Impact	T-2
Construction would be inconsistent with transportation plans (Criterion TRA9)	Construction would conflict with planned transportation projects. (Impact T-8)	Class II	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.	No Impact	T-8: Avoid conflicts with planned improvements to SR14
Noticeable deterioration of road surfaces (Criterion TRA10)	Construction vehicles and equipment could damage road ROWs. (Impact T-9)	Class III	Deterioration caused by Project construction traffic would be repaired and would not have the potential to combine with deterioration or damage from other projects.	No Impact	None recommended
Adverse effects to aviation activities (Criterion TRA11)	Project transmission structures could present an aviation hazard. (Impact T-10)	Class II	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.	Class III	T-10: Notify US Air Force

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Visual Resources					
Substantial adverse effects on the existing landscape character and visual quality of the site and its surroundings (Criterion VIS1)	Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of landscape views. (Impact V-1)	Class I	Ongoing development throughout the cumulative effects area for visual resources would be readily visible throughout the Project area, and would be cumulatively adverse and significant.	Class I	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
	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)	Class I	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.	Class I	V-1 V-2a: Use tubular steel poles instead of lattice steel towers in designated areas V-2b: Treat surfaces with appropriate colors, textures, and finishes V-2c: Establish permanent screen V-2d: At road crossings, structures should be offset so that they are equidistant on each side of the road where feasible *[Alternatives 3, 4, 7]*
	For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects. (Impact V-3)	Class I	Increased structure size and new materials of these future transmission lines would result in similar adverse visual effects.	Class I	V-1, V-2a, V-2b, V-2c, V-2d *[V-2d applies only to Alts 3, 4, 7]* V-3a: Match spans of existing transmission structures V-3b: On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality V-4b and V-4d (See Impact V-4)
	Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality. (Impact V-4)	Class I	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 significant.	Class I	V-4a: Construct, operate, and maintain the Project with existing access and spur roads where feasible V-4b: Slope-round and re-contour in areas as prescribed V-4c: Avoid locating new roads in bedrock on NFS lands V-4d: Dispose of excavated materials as prescribed
Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. (Criterion VIS2)	New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glare in certain lighting conditions. (Impact V-5)	Class II	New materials used in construction of existing and future projects (including the proposed Project) within the Project area viewshed have created and have the potential to produce, respectively, daytime glare and new sources of nighttime light and glare leading to cumulatively adverse and significant visual impacts.	Class I	V-2b
Damage scenic resources within a scenic highway viewshed or a national scenic trail viewshed (including, but not limited to, trees, rock outcroppings, and historic buildings. (Criterion VIS3)	The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or scenic trail viewshed. (Impact V-6)	Class II	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 8 in the South Area would create a persistent adverse visual effect on scenic highway and scenic trail viewsheds.	Class I	V-3b
	The Project would conflict with established visual resource management plans or landscape conservation plans. (Impact V-7)	Class I	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 significant impacts.	Class I	None recommended
Wilderness and Recreation					
Directly or indirectly disrupt or preclude activities in established federal, State, or local recreation areas or wilderness areas. (Criterion REC1)	Construction activities would restrict access to or disrupt activities within established recreational areas. (Impact R-1)	Class II	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 significant and unavoidable.	Class I	R-1a: Coordinate construction schedule with managing officer/s for affected recreation areas R-1b: Identify and provide noticing of alternative recreation areas R-1c: Notification of temporary closure of OHV routes R-1d: Notification of temporary closure and reroute of the Pacific Crest National Scenic Trail R-1e: SCE shall design informational brochures and provide at recreation agencies' offices and assist in the completion of backlogged maintenance activities in the ANF
	Operation and maintenance activities would restrict access to or disrupt activities within established recreational areas. (Impact R-2)	Class II	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 be cumulatively considerable regarding the preclusion of recreational or wilderness areas.	Class III	R-1a through R-1d

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

Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
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 (Criterion REC2)	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. (Impact R-3)	Class III (All Except Alt 6) Class II (Alt 6 Only)	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 significant.	Class I	L-2b: Aircraft flight path and safety provisions and consultation
	The Project would cause or contribute to degradation of the Pacific Crest National Scenic Trail (PCT). (Impact R-4)	Class II	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 significant.	Class I	R-1a, R-1d, R-1e
	The Project would contribute to degradation of Off-Highway Vehicle (OHV) trails or Open Riding Areas, or would result in a loss of recreational opportunity for OHV users. (Impact R-5)	Class II	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. Project contribution to this cumulative impact is not significant.	Class III	R-5: Avoid permanent upgrades to Forest System roads
	The Project would facilitate unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational opportunities. (Impact R-6)	Class II	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 within 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.	Class I	R-5
Wildfire Prevention and Suppression					
Adverse effects on fire prevention and suppression activities (Criterion FIRE1)	Construction and/or maintenance activities would reduce the effectiveness of firefighting. (Impact F-1)	Class II	The contribution of the proposed Project to this impact would not be cumulatively considerable.	Class III	F-1: Prepare wildland traffic control plans
	The presence of new or higher overhead transmission line would reduce the effectiveness of firefighting. (Impact F-2)	Class III (All Except Alt 4) Class I (Alt 4 Only)	This impact would be cumulatively significant and unavoidable.	Class I	None recommended
Exposure of communities, firefighters, and/or natural resources to an increased risk of wildfire (Criterion FIRE2)	Construction and/or maintenance activities would increase the risk of wildfire. (Impact F-3)	Class II	The contribution of the proposed Project to this impact would be cumulatively significant and unavoidable.	Class I	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 PHLNHPA lands F-3f: Share costs for ANF fuelbreak maintenance F-3g: Provide transmission line safety training to ANF staff
	Construction and/or maintenance activities would increase the risk of personnel injury or death in the event of fire. (Impact F-4)	Class II	The contribution of the proposed Project would not combine with other past, present, nor reasonably foreseeable projects to result in a cumulative impact to personnel. Therefore this impact would not be cumulatively significant.	No Impact	F-3b F-4: Prepare and implement Emergency Evacuation Plan
	Presence of the overhead transmission line would increase the risk of wildfire and compromise firefighter safety. (Impact F-5)	Class III (All Except Alt 4) Class I (Alt. 4 only)	The contribution of the proposed Project to this impact would be cumulatively considerable resulting in a significant and unavoidable cumulative impact.	Class I	None recommended for all alternatives, except Alt 4. F-5: Share costs fuelbreak maintenance (Alt 4 Only)
Activities associated with Project construction or maintenance result in a fuel vegetation matrix with an increased ignition potential and rate of fire spread (Criterion FIRE3)	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread. (Impact F-6)	Class II	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 significant and unavoidable	Class I	B-3a: Prepare and implement a Weed Control Plan

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Type of Effect	Direct or Indirect Project Effects	Significance of Direct and Indirect Effects[2]	Potential Cumulative Effect	Cumulative Significance per Alternative[3]	Mitigation Measures
Electrical Interference and Hazards					
Harmful interference with radio/television/communications/electronic equipment (Criterion EIH1)	The Project would cause radio, television, communications, or electronic equipment interference. (Impact EIH-1)	Class II	The contribution of the proposed Project to this impact would not be additive or cumulatively considerable.	No Impact	EIH-1a: Limit conductor surface electric gradient EIH-1b: Document and resolve electronic interference complaints
Induced currents or shock hazards to the public (Criterion EIH2)	The Project would cause induced currents and shock hazards in joint use corridors. (Impact EIH-2)	Class II	The contribution of the proposed Project to this impact would not be additive or cumulatively considerable.	No Impact	EIH-2: Implement grounding measures
Interference with cardiac pacemakers (Criterion EIH3)	Project operation would result in electric fields that would affect cardiac pacemakers. (Impact EIH-3)	Class III	The contribution of the proposed Project to this impact would not be additive or cumulatively considerable.	No Impact	None recommended
Introduction of hazards related to wind or earthquakes (Criterion EIH4)	Project structures would be affected by wind and earthquakes. The risk that high winds or an earthquake would cause transmission line structures to threaten public safety is not significant. (Impact EIH-4)	Class III	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 cumulatively considerable.	No Impact	None recommended