Executive Summary

ES.1 Introduction/Background

ES.1.1 Overview of the Proposed Project

On December 9, 2004, Southern California Edison (SCE) submitted to the California Public Utilities Commission (CPUC) application A.04-12-007 for a Certificate of Public Convenience and Necessity (CPCN). SCE also submitted its Proponent's Environmental Assessment (PEA) for the construction and operation of the Antelope Transmission Project, Segment 1, referred to as the Antelope-Pardee 500-kilovolt (kV) Transmission Project (proposed Project) proposed in northern Los Angeles County, California. On January 11, 2005, SCE submitted a Special Use Application (SF 299) to the U.S. Department of Agriculture Forest Service (USDA Forest Service) because the proposed transmission line would cross approximately 12.6 miles of National Forest System (NFS) lands located on the Santa Clara-Mojave Rivers Ranger District, Angeles National Forest (ANF).Note that non-federal land in-holdings located within the ANF along the Project alignment, which include land surrounding Bouquet Reservoir and adjacent to the southern boundary of the ANF, are not NFS lands.

The CPUC and the United States Department of Agriculture (USDA) Forest Service, ANF, have prepared this joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS), referred to as an EIR/EIS, for the Antelope-Pardee 500-kV Transmission Project proposed by SCE (or "the Applicant"). For the environmental review process, the CPUC is the lead agency under the California Environmental Quality Act (CEQA), and the USDA Forest Service is the lead agency under the National Environmental Policy Act (NEPA).

This EIR/EIS evaluates and presents the environmental impacts that are expected to result from construction and operation of SCE's proposed Project and presents recommended mitigation measures that, if adopted, would avoid or minimize the significant environmental impacts identified. In accordance with both CEQA and NEPA requirements, this EIR/EIS identifies alternatives to the proposed Project that could avoid or minimize significant environmental impacts associated with the proposed Project, including the No Project/Action Alternative. This EIR/EIS also evaluates the environmental impacts associated with each identified alternative to the proposed Project.

The intent of this joint EIR/EIS is to inform the public and meet the needs of local, State, and federal permitting agencies that are considering the proposed Project. The proposed Project is described briefly below and in detail in Section B (Project Description) of this EIR/EIS. This EIR/EIS does not make a recommendation regarding the approval or denial of the proposed Project; it is purely informational in content and will be used by the CPUC and the USDA Forest Service in considering whether or not to approve the proposed Project or an alternative.

The content of this EIR/EIS reflects relevant input received from government officials, agencies, nongovernmental organizations, and concerned members of the public during the EIR/EIS scoping period following the CPUC's publication of the Notice of Preparation (NOP) of an EIR (June 24, 2005), and the USDA Forest Service's publication of the Notice of Intent (NOI) to prepare an EIS (June 28, 2005). Please see Section ES.1.4 of this Executive Summary for a more detailed description of public involvement activities.

ES.1.2 Statement of Objectives/Purpose and Need

The lead agencies for this proposed Project each have a unique jurisdiction and subsequently unique objectives (CEQA), or purpose and need (NEPA). Therefore, the statement of objectives or purpose and need for the CPUC and the USDA Forest Service are described in detail separately in Section A.3 (Introduction) of this EIR/EIS, and are summarized below.

Southern California Edison (SCE)

Per CPUC Decision 04-06-010, Ordering Paragraph No. 8, SCE is required to "…file an application seeking a certificate authorizing construction of the first phase of…transmission upgrades consistent with its 2002 [2003] conceptual study and the [Tehachapi Collaborative] study group's recommendation…" These transmission upgrades include the proposed Antelope-Pardee 500-kV Transmission Project. Additionally, SCE's purpose and need for the approval and implementation of the proposed Project has two primary aspects, as follows:

1) Prevent overloading of the existing Antelope-Mesa transmission line by adding capacity between Antelope Substation and Pardee Substation.
   - Increased capacity is necessary to allow for the transmission of renewable wind power generated in the Antelope Valley and Tehachapi areas.
   - Wind power is being developed in the Antelope Valley and Tehachapi areas to increase the amount of energy delivered in California from renewable resources.
   - The amount of wind power generated by renewable resources is being increased in response to the California Renewables Portfolio Standard Program (SB 1078), which requires utilities to increase the amount of power generated from renewable sources.
2) Increase reliability of the SCE transmission grid by providing a new pathway to deliver power to load south of Antelope Substation from generation facilities located north of Antelope Substation. Existing transmission lines originating at PG&E's Big Creek hydroelectric generation facilities in Madera and Fresno Counties deliver power to Antelope Substation in Los Angeles County by connecting through SCE's Magunden Substation in Kern County. Currently, there is only one transmission corridor available to deliver power from Antelope Substation to areas of demand (load) to the south, including the Los Angeles metropolitan area. The proposed Project would increase system reliability by providing an additional pathway for power transmission south of Antelope Substation from power generated north of the substation, including future wind power delivered from the Tehachapi area.
   - Use of a common utility ROW triggers reliability planning criteria implemented by the California Independent System Operator (CA ISO), the Western Electricity Coordinating Council (WECC), and the North American Electric Reliability Council (NERC) which require the potential loss of transmission lines (proposed and existing) to be analyzed.
   - Instead of undertaking extensive modifications to the already-complex Special Protection Scheme (SPS)[1], SCE is planning a series of system upgrades, including the proposed Project, which would increase overall reliability of the grid and ensure compliance with the reliability planning criteria mentioned above.

California Public Utilities Commission (CPUC)

The CPUC's primary purpose and objective in approving the proposed Project is to facilitate the distribution of renewable energy within the State of California.

- The Tehachapi area is considered the largest wind resource area in the State and, therefore, both federally-regulated and State-regulated utilities have focused on the development of wind projects in this area.

[1] An SPS is a plan that automatically initiates one or more actions designed to protect the transmission system. Such plans are usually designed to decrease or increase generation at pre-specified locations or decrease pre-identified loads.

- Per the State of California Energy Action Plan, the State's RPS goal is to achieve power transmission of 20 percent renewable energy by 2010. As a crucial step in fulfilling this purpose, the CPUC must explore possibilities for the removal of constraints on the transmission of electricity from its point of generation to its point of use.
- The CPUC must attempt to further the implementation of other State policies and programs related to power generation and transmission, with specific regard to the potential wind energy available in the Antelope Valley-Tehachapi Region.

USDA Forest Service, Angeles National Forest (Forest Service)

The purpose and need for action by the USDA Forest Service is to respond to SCE's request for a Special Use authorization to construct the proposed Project on NFS lands through the ANF and ensure the Project is in compliance with the 2005 ANF Land Management Plan (Forest Plan) per 36 CFR 219.10(e). The purposes (objectives) are to minimize adverse impacts on NFS lands and minimize adverse impacts to forest management activities.

ES.1.3 CEQA and NEPA Process

A joint Draft EIR/EIS has been prepared by the CPUC and USDA Forest Service in compliance with CEQA and NEPA requirements. The CPUC is the State lead agency responsible for compliance with the California Environmental Quality Act (CEQA) for the CPCN application.

Because the proposed transmission line would cross approximately 12.6 miles of federal NFS lands managed by the ANF, the project would also require an authorization (i.e., 50-year term Special Use Easement) from the Forest Service for the portion of the project within a 160-foot-wide easement across NFS land. The Forest Service proposed action is to respond to the special use application through the issuance of a Special Use Easement. This action triggers the National Environmental Policy Act (NEPA) process. In addition, the proposed action (discussed in this document as the proposed Project) would include issuing one or more temporary Special Use Permits for any ground disturbing activities on NFS lands that would occur during construction activities and would be located outside the proposed 160-foot ROW width and amending the Forest Plan to ensure the proposed Project is in compliance. Therefore, the Forest Service is the federal Lead Agency for the preparation of this EIS/EIR in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508), and the Forest Service Handbooks. NEPA mandates that federal agencies consider the environmental consequences of a wide variety of proposed actions. Specifically, NEPA requires federal agencies to prepare an EIS for "proposals for legislation and other major federal actions significantly affecting the quality of the human environment." When the federal agency determines that a proposed action may "significantly affect the quality of human environment," an EIS is required (42 U.S.C 4332 (2)(c)). According to the Council on Environmental Quality's (CEQ) NEPA Regulations (40 C.F.R. 1502.14), an EIR/EIS must present the environmental impacts of the proposed action and alternatives in comparative form, defining the issues and providing a clear basis for choice by decision-makers and the public.

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 CPUC or other responsible agencies, could avoid or minimize significant environmental effects. In accordance with CEQA guidelines, the EIR/EIS also evaluates alternatives to the proposed Project that could avoid or minimize the significant environmental effects. The EIR/EIS provides a comparison of the environmental effects of the proposed Project and the alternatives, and identifies the Environmentally Superior Alternative per CEQA requirements.

The EIR/EIS is an information document only; and does not make a recommendation regarding the approval or denial of the project. The purpose of the EIR/EIS is to inform the public and deciding officials on the environmental setting and impacts of the proposed Project and alternatives. The EIR/EIS will be used by the CPUC in conducting the proceeding to determine whether to grant SCE's requested CPCN and by the Forest Service to determine whether or not to issue a Special Use Easement on NFS lands. Finally, there are several other federal and State agencies with potential reviewing and/or permitting authority related to the construction or operation of the proposed Project or alternatives that will rely on information in the EIR/EIS to inform them in their reviewing or approval processes. This Executive Summary (ES) provides an overview of the proposed Project and alternatives considered, and the environmental findings and mitigation measures of the EIR/EIS.

ES.1.4 Summary of Public Involvement Activities

To date, there have been extensive public participation efforts on the Antelope-Pardee Project. These activities are summarized below:

- The CEQA 30-day scoping process for the Antelope-Pardee 500-kV Transmission Line Project began with the CPUC's issuance of the Notice of Preparation (NOP) of an EIR on June 24, 2005. The NEPA scoping process began with the USDA Forest Service publication of the Notice of Intent (NOI) to prepare an EIS in the Federal Register on June 28, 2005. Copies of the NOP and NOI were available at 10 local repositories.
- The NOP was mailed on June 24, 2005, to 77 federal, State, regional, and local agencies and elected officials.
- A Notice of Public Scoping Meetings was mailed to 3,423 addresses, including community organizations, interest groups, and property owners in the vicinity of the proposed Project route.
- Notice of the two scoping meetings appeared on the CPUC project website. One newspaper advertisement appeared in five regional and local newspapers on Sunday June 26, 2005, and Saturday July 9, 2005.
- On June 29 and July 14, 2005, the CPUC and USDA Forest Service held two public scoping meetings to collect input for the scope and content of the EIR/EIS, as well as to provide an opportunity for the public to provide input on alternatives to the project and potential mitigation measures.
- An estimated 29 members of the public and representatives from organizations and government agencies attended the public scoping meetings.
- Thirteen written comments were received. Oral comments were presented by nine individuals at the public scoping meetings and 21 comments were received on the project phone line regarding the proposed Project. Comments were received from members of the public, government and public agencies, and organizations and private companies. A comprehensive Scoping Report was prepared in August 2005 to document the public scoping effort and assemble comments made on the scope and content of the proposed Project EIR/EIS. Copies of the Scoping Report are available for the public to review upon request.

An EIR/EIS e-mail address was created along with a telephone and fax hotline for project information, as well as an Internet site that is used to post all the public environmental documents (including this Draft EIR/EIS) and to announce upcoming public meetings.

ES.1.5 Areas of Controversy and Issues to be Resolved

CEQA (Guidelines Section 15123) and NEPA (40 CFR 1502.12) require that an EIR/EIS include a summary of the document (the Executive Summary), which must include a discussion of areas of controversy known to the lead agencies, as well as identification of issues that need to be resolved. These may include issues raised by other agencies and the public during the public scoping process, as well as issues realized during the environmental analysis process. Various issues of concern were expressed at public scoping meetings for the proposed Project, as well as through responses to the Notice of Preparation and Notice of Intent (Appendix 2). Some areas of controversy that were raised during the public scoping process include the following:

- Development occurring within the ANF;

- Potential impacts to private property, including general aesthetics and property value;
- Potential health impacts due to the generation of new electric and magnetic fields (EMFs);
- Construction-related concerns such as land disturbance, noise, and air quality impacts;
- Biological resources, including wildlife corridors and sensitive species;
- Geology and soil conditions such as potential erosion and compaction;
- Potential conflicts with recreation, including the Pacific Crest National Scenic Trail (PCT); and
- Various other concerns related to environmental issue areas including traffic, public services, and utilities.

Many of the areas of controversy and issues identified in the list above would be resolved through the implementation of applicable mitigation measures, which are summarized in Table ES-3 at the end of this section, and discussed in detail in Section C (Environmental Analysis) of this EIR/EIS.

ES.2 Summary Description of Proposed Project and Project Alternatives

This summary provides a physical description of the proposed Project and alternatives. A more detailed description is provided in Section B of this document.

ES.2.1 Proposed Project

The proposed Antelope-Pardee 500-kV Transmission Project would involve the construction of a new 25.6-mile 500-kV transmission line between SCE's existing Antelope Substation and Pardee Substation. The Antelope Substation is located in the City of Lancaster and the Pardee Substation is located in the City of Santa Clarita, both of which are situated in northern Los Angeles County (see Section B, Project Description). Table ES-1 provides a detailed summary of the proposed Project's major components (along with the Project alternatives).

Location/Proposed Route

The proposed Project, which extends southwesterly from the Antelope Substation in the City of Lancaster to the Pardee Substation in the City of Santa Clarita, is situated in northern Los Angeles County as shown Figure ES-1. The proposed route departs the Antelope Substation on tubular steel poles within a new 180-foot-wide ROW. At Mile 1.1 the proposed Project turns southwest and enters the existing Saugus-Del Sur Utility Corridor, within which it remains until Mile 18.6 and replaces the existing Antelope-Pole Switch 74 66-kV line. From Mile 1.1 to Mile 5.7 within the Saugus-Del Sur Utility Corridor, the ROW width would be expanded from 50 feet to 180 feet and approximately 3.5 miles of a new 12-kV distribution wood pole line would be installed.

At Mile 5.7, the line enters the ANF on NFS lands and remains within NFS boundaries for the next 12.9 miles until Mile 18.6, except between Mile 9.2 and Mile 9.5 where the proposed Project crosses private land in-holdings at Bouquet Reservoir. This portion of the ROW through the ANF would be widened from 100 feet to 160 feet. At Mile 18.6, the proposed route turns south into a new ROW for 1.7 miles, crossing private land in-holdings within ANF (non-NFS lands) before exiting the ANF at Mile 19.3. At Mile 20.3, the proposed route turns west and enters the Pardee-Vincent 500-kV ROW, in which it would remain and traverse residential areas of Santa Clarita until its termination at Pardee Substation at Mile 25.6. Within the first portion of this ROW (from Mile 20.3 to Mile 22.3), the proposed Project would replace the existing Pardee Vincent 500-kV single-circuit towers with double-circuit towers, and from Mile 22.3 to Mile 25.6, the proposed transmission line would be constructed on double-circuit 500-kV towers in the vacant position of the ROW.

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

Component	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Total linear distance (miles)	25.6	26.2	26.7	25.6	25.9	37.2
Distance overhead T/L (miles)	25.6	18.7	26.7	25.6	25.9	37.2
Distance underground T/L (miles)	0.0	7.5	0.0	0.0	0.0	0.0
Distance existing ROW (miles)	5.3	2.4	5.3	5.3	5.9	18.4
Distance expanded ROW (miles)	17.5	17.5	5.7	17.5	16.4	0.0
Distance new ROW (miles)	2.8	6.3	15.7	2.8	3.6	18.8
Distance on NFS lands (miles)						
Overhead	12.6	8.6	13.2 (12.2 new)	12.6	12.5 (1.0 new)	1.5 (1.5 new)
Underground	0	4.0	0	0	0	0
Existing 66-kV line removed	Mile 1.1 to 18.6	Mile 1.1 to 18.6	Mile 1.1 to 18.6	Mile 1.1 to 18.6	Mile 1.1 to 18.6	Mile 1.1 to 18.6
No. towers removed: NFS lands	86 (19 non-overlap)	86 (41 non-overlap)	86 (83 non-overlap)	86 (19 non-overlap)	86 (22 non-overlap)	86 (all non-overlap)
non-NFS lands	33 (17 non-overlap)	33 (17 non-overlap)	33 (17 non-overlap)	33 (17 non-overlap)	33 (17 non-overlap)	33 (all non-overlap)
Total towers removed	119	119	119	119	119	119
2- to 3-acre transition station	None	4 total	None	None	None	None
No. of double-circuit 220-kV TSPs	3	3	3	3	3	3
No. of single-circuit 500-kV LSTs	93	86	101	114	94	94
No. of double-circuit 500-kV LSTs	21 + 1 existing	1 existing	21 + 1 existing	1 existing	21 + 1 existing	76 + 1 existing
Total No. of NEW towers	117	89	125	117	118	173
No. of towers on NFS lands (s-c 500-kV 113-178' tall)	58	40	66 (56 mid-slope)	58	58	7
No. of towers off NFS lands	59	49	59	59	60	166
No. of towers constructed by helicopter (all on NFS lands) (without Mitigation Measure V-4a)	1	1	37	1	1	0
No. towers constructed by helicopter (with Mitigation Measure V-4a)	41 (on NFS lands) 0 (off NFS lands)	23 (on NFS lands) 0 (off NFS lands)	37 (on NFS lands) 0 (off NFS lands)	41 (on NFS lands) 0 (off NFS lands)	41 (on NFS lands) 0 (off NFS lands)	9 (on NFS lands) 33 (off NFS lands)
Pulling and Splicing Locations						
New Pulling Locations Installed	24 (10 on NFS lands)	19 (7 on NFS lands)	25 (11 on NFS lands)	24 (10 on NFS lands)	26 (10 on NFS lands)	28 (0 on NFS lands)
New Splicing Locations Installed	15 (11 on NFS lands)	11 (7 on NFS lands)	16 (12 on NFS lands)	15 (11 on NFS lands)	15 (11 on NFS lands)	22 (0 on NFS lands)

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

Component	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Substation Modifications						
Antelope Substation	220-kV substation improvements plus 500-kV substation expansion resulting in the addition of 33 acres	Expanded by 33 acres to increase rating from 220 kV to 500 kV, which includes 220-kV improvements (300 feet x 205 feet) and future 500-kV substation	Expanded by 33 acres to increase rating from 220 kV to 500 kV, which includes 220-kV improvements (300 feet x 205 feet) and future 500-kV substation	Expanded by 33 acres to increase rating from 220 kV to 500 kV, which includes 220-kV improvements (300 feet x 205 feet) and future 500-kV substation	Expanded by 33 acres to increase rating from 220 kV to 500 kV, which includes 220-kV improvements (300 feet x 205 feet) and future 500-kV substation	Expanded by 33 acres to increase rating from 220 kV to 500 kV, which includes 220-kV improvements (300 feet x 205 feet) and future 500-kV substation
Pardee Substation	220-kV Line Position 5 modified	220-kV Line Position 5 modified	220-kV Line Position 5 modified	220-kV Line Position 5 modified	220-kV Line Position 5 modified	220-kV Line Position 5 modified
Transition Stations	None	4 total (2 along Del Sur Ridge + 1 at San Francisquito Canyon Road + 1 at Pardee Substation)	None	None	None	None
Information Technology	Optical Ground Wire installed as part of new transmission lines on towers	Optical Ground Wire installed as part of new transmission line on towers and in ducts placed underground	Optical Ground Wire installed as part of new transmission lines on towers	Optical Ground Wire installed as part of new transmission lines on towers	Optical Ground Wire installed as part of new transmission lines on towers	Optical Ground Wire installed as part of new transmission lines on towers
Duration of Construction (months)	13	10 (overhead) 29 (underground)	14	13	13	16
Maintenance	• Periodic inspections (once per year) on an as-needed basis. • Preventative maintenance every six months.	• System failures more difficult to identify in underground portions. Failures may result in re-excavation to replace buried cables.	• Periodic inspections (once per year) on an as-needed basis. • Preventative maintenance every six months.	• Periodic inspections (once per year) on an as-needed basis. • Preventative maintenance every six months.	• Periodic inspections (once per year) on an as-needed basis. • Preventative maintenance every six months.	• Periodic inspections (once per year) on an as-needed basis. • Preventative maintenance every six months.

Land Disturbance and Construction

During construction of the proposed Project, roughly 122 acres of land would be disturbed, of which an estimated 63 acres would be restored. Permanent land disturbance would occur on approximately 59 acres, resulting from the following: 1) lattice steel tower grading, 2) the construction of lattice steel tower footing holds and new spur roads, 3) the turning radius from access roads to spur roads, and 4) the expansion of the Antelope Substation (SCE, 2004). Prior to construction, SCE would conduct pre-construction clearance surveys in areas of potentially suitable habitat to help ensure that no special-status plant species or wildlife species are negatively impacted by the Project.

Construction activities for the proposed Project are anticipated to begin in March 2008 and to be completed in April 2009. A more detailed construction schedule is located in Section B (Table B.2-1). SCE proposes that crews would work Monday through Saturday, 6:30 a.m. to 5:00 p.m., on all SCE-owned properties and approved ROWs (SCE, 2004). All construction work would be performed with conventional construction techniques in accordance with an SCE construction specification, which includes regional environmental and Forest Service criteria; CPUC General Order 95; Institute of Electrical and Electronic Engineers; American Concrete Institute; and other industry-specific standards. The workforce necessary for construction of the proposed Project is anticipated to range from 20 to 120 personnel, with an estimated average daily workforce of 50 personnel.

ES.2.2 Project Alternatives

Initially, 15 alternatives to the proposed Project were considered for evaluation in this document. These alternatives were identified by SCE in its PEA; suggested by the general public, and federal, State and local agencies during the scoping period (June 28, 2005 – July 29, 2005); identified by the Tehachapi Collaborative Study Group (TCSG); requested by the NEPA Lead Agency (USDA Forest Service); or developed by the EIR/EIS team.

A comprehensive screening analysis, which is summarized in Section B.3 and described in detail in the Alternatives Screening Report (Appendix 1), was employed to focus on alternatives that would be capable of meeting most of the Project objectives/purpose and need, considered feasible, and would avoid or substantially lessen any significant effects of the proposed Project. Five alternatives were selected based on the screening analysis and are fully considered in this EIR/EIS, as well as the No Project/Action Alternative as required by CEQA and NEPA (State CEQA Guidelines §15126.6(e)(1) and 40 CFR Section 1502.14(d)). Following is a brief description of each of these alternatives.

Alternative 1: Partial Undergrounding of Antelope-Pardee Transmission Line. This alternative includes the installation of the 500-kV transmission line underground in specific high-impact segments of the proposed route, including along Del Sur Ridge on NFS lands within the ANF (approximately Mile 11.0 to Mile 15.0) and within the City of Santa Clarita (Mile 22.7 to Mile 26.2). Underground construction was considered due to the visual impacts of overhead lines, as well as impacts to biological resources and Forest Management activities such as wildland fire suppression. Alternative 1 is identical to the proposed Project, except in those areas where underground construction and associated surface structures, such as transition stations, would be built, and between Mile 20.3 and 22.3, where the existing single-circuit 500-kV towers located in the Pardee-Vincent 500-kV ROW would not be replaced with double-circuit towers. Instead, new single-circuit 500-kV towers would be placed in the vacant position within this existing ROW. The technology that would be used for the underground portions of this alternative would consist of Solid Dielectric Cables (XLPE) installed in concrete-encased ductbanks.

Figure ES-1. Regional Location Map
CLICK HERE TO VIEW

Figure ES-2. Proposed and Alternative Routes

CLICK HERE TO VIEW

Alternative 2: Antelope-Pardee East Mid-Slope. This alternative would follow a similar route to the proposed Project, but would relocate most of the towers further east, off the top of the Del Sur Ridge and closer to Bouquet Canyon. The alignment of Alternative 2 would help reduce the visibility of the transmission towers from various key observation points. Alternative 2 is identical to the proposed Project, except between proposed Project Mile 5.7 and Mile 17.5 (Alternative 2 Mile 18.6), where the alignment deviates from the existing utility corridor in order keep towers off the Del Sur Ridge.

Alternative 3: Antelope-Pardee Single-Circuit 500-kV Towers between Haskell Canyon and Pardee Substation. This alternative includes constructing single-circuit 500-kV towers between Haskell Canyon and the Pardee Substation in the vacant position within the Pardee-Vincent 500-kV ROW, which is situated near the center of the ROW. Alternative 3 is identical to the proposed Project, except between Mile 20.3 and Mile 25.6 (on non-NFS lands), where single-circuit 500-kV towers would be constructed instead of constructing double-circuit 500-kV towers and removing the existing single-circuit 500-kV towers.

Alternative 4: Antelope-Pardee Re-Routing of New Right-of-Way along Haskell Canyon. This alternative re-routes the proposed Project around the Veluzat Motion Picture Ranch and the proposed Meadow Peak development near Santa Clarita. Alternative 4 is identical to the proposed Project, except between Mile 17.5 and Mile 20.3, where the transmission line would remain east of the proposed Project route to avoid the Veluzat Motion Picture Ranch and planned development near Haskell Canyon.

Alternative 5: Antelope-Pardee Sierra Pelona Re-Route. Alternative 5 deviates from the proposed Project from the Antelope Substation (Mile 0.0) to Mile 20.3, where it would rejoin the proposed Project route until the termination at Pardee Substation. Alternative 5 would be 45 percent longer than the proposed Project and would generally avoid the ANF. Alternative 5 would proceed south from the Antelope Substation, crossing over the California Aqueduct and the Portal Ridge mountain range, and then continue in a southwest direction crossing over Elizabeth Lake Road in Leona Valley. At this point, Alternative 5 would turn south, entering the ANF for approximately 0.5 miles, and continue south through the western portion of the Ritter Ranch Development area. After crossing Sierra Highway and Antelope Valley Freeway (SR-14), the transmission line would traverse two NFS land properties (1.0 mile) in Soledad Canyon and then enter the existing Pardee-Vincent corridor where it would continue west to the Pardee Substation. Within the Pardee-Vincent corridor, the existing single-circuit 500-kV towers would be replaced with double-circuit 500-kV towers.

No Project/Action Alternative. With the No Project/Action Alternative, the Antelope-Pardee 500-kV Transmission Project, as proposed, would not be implemented and the Forest Service would deny the Special Use Application. No amendments to the Forest Plan would occur through this Project. As such, none of the associated Project activities would occur and the environmental impacts associated with the Project would not occur. For example, SCE's existing Antelope-Pole Switch 74 66-kV line along the Saugus-Del Sur Utility Corridor would remain in place, as removal of the 66-kV line is specifically linked to the construction of the Project (It should be noted that the USDA Forest Service's Special Use Permit for the 66-kV line has expired). As such, the environmental impacts associated with the Project, as described in Section C, would not occur. SCE's and CPUC's objectives, purpose, and need for the Project would remain unfulfilled under the No Project/Action Alternative. For example, the 350 MW of initial transmission capability when energized to 220 kV would not be added between the Antelope and Pardee Substations, and the improved system reliability and operating flexibility associated with the Project would not occur.

As discussed in Section A.3.1 (SCE: Purpose and Need), in the absence of the proposed Project, SCE would still 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. According to SCE, several wind generation projects either have applications pending

before Kern County or are in the advanced planning stage and expected to submit applications in the near future. Due to their locations, these upcoming wind generation projects will need to interconnect to the SCE transmission system via Antelope Substation or some other new substation located in the vicinity to allow power to be delivered to load in the Los Angeles area. However, these wind generation projects cannot be interconnected to the SCE transmission system without an increase in transmission capacity south of Antelope Substation. Transmission of wind power from the Tehachapi and Antelope Valley areas is currently constrained by the existing Antelope-Mesa 220-kV transmission line, which would be overloaded by the addition of new wind generation. Therefore, without upgrades to the existing system, as new facilities are added to meet the power needs of southern California, SCE's system would experience system-wide power flow and reliability problems due to overloading of the existing system, such as curtailed generation, thermal overload, and blackouts. It should be noted that connection to the transmission systems of other power utilities (such as PG&E or LADWP) is possible, but would not meet SCE's objectives for the Project and would not fulfill the goals of the Tehachapi Collaborative Study Group (see Sections A.3.1 and A.3.2).

Under the No Project/Action Alternative, the following events or actions (scenarios) related to the electricity generation and transmission are reasonably expected to occur in the foreseeable future:

- Initial wind projects in the Antelope Valley and Tehachapi areas would be postponed or cancelled, as additional transmission capacity would not be available, or these proposed wind projects would have to find alternate means to connect to SCE's transmission system without compromising system reliability.
- The requirement of the Renewables Portfolio Standard (RPS), which requires retail sellers of electricity such as SCE and PG&E to increase their sale of electricity produced by renewable energy sources to 20 percent by 2010 (updated from 2017 to 2010 per the Energy Action Plan), may not be achieved as access to renewable energy from the Antelope Valley-Tehachapi region would either not be provided or would be delayed.
- Other renewable energy resources would need to be identified and transmission studies conducted to connect these newly identified sources to the transmission grid, which would likely further limit achievement of the RPS goal by the 2010 deadline.
- The conceptual plan recommended by the TCSG would not be fully implemented. This plan is intended to collect power from Tehachapi area wind projects, interconnect facilities into the State's backbone grid, and upgrade the network to reliably deliver that power to load centers. The conceptual plan, which would allow for the transmission of over 4,000 MW of wind power, would not be fully achieved because the initial capacity that would have been provided by the proposed Project for transmitting 350 MW would not be achieved.
- Transmission providers such as SCE, PG&E, or LADWP would need to accommodate the power load by upgrading existing transmission infrastructure or building new transmission facilities along a different alignment and/or developers of wind generation facilities would build their own transmission facilities to connect to the transmission grid.

ES.2.3 Proposed Project and Alternatives on National Forest System Lands

Portions of the proposed Project and all of its alternatives (excluding the No Project/Action Alternative) traverse NFS lands. NFS lands fall under the jurisdictional authority of, and are managed by, the USDA Forest Service. The proposed Project and Alternatives 1 through 5 fall within the geographic boundaries of the ANF. In addition, Alternative 5 crosses two properties in the Soledad Canyon area that are under the jurisdiction of the USDA Forest Service and managed by the ANF. These two properties are located in Township 5 North, Range 13 West, Section 31, between Alternative 5 Miles 17 and 19. The proposed Project and Project alternatives include the need to issue an authorization (i.e., Special Use Easement) to SCE to construct and maintain the improvements on NFS lands. Along with issuing the authorization, all alternatives include the need to amend the Forest Plan (e.g., modify Scenic Integrity Objectives, amend the Forest Standard related to the Pacific Crest Trail, and re-route the Saugus Del Sur Utility Corridor). Sections A.5.2 and B in this document provide more detailed information.

On NFS lands, the physical breadth of the proposed Project and Alternatives 1 through 5 differs in response to each alternative's ROW length, location, design parameters, and construction and maintenance methods. A summary of these differences are outlined in Table ES-2. As demonstrated in Table ES-2, the total linear distance of NFS lands traversed by the proposed Project and its alternatives ranges between 1.5 miles (Alternative 5) and 13.2 miles (Alternative 2), and includes the placement of between seven and 66 lattice steel transmission towers (LSTs). Alternative 1 additionally includes underground transmission line construction along four miles of its ROW, and the placement of two stations for the line's underground to overhead transitions. All of the alternatives, including the proposed Project, would involve the removal of the Antelope-Pole Switch 74 (66-kV) transmission line, which also traverses NFS lands.

Section ES.3.2 provides discussion of the impacts of the proposed Project and alternatives as they relate to NFS lands. In addition, Table ES-4 provides a summary of the key environmental issues and attributes of the proposed Project and alternatives that are applicable to NFS lands.

ES.3 Summary of Impacts and Mitigation Measures

This section summarizes the environmental impacts and mitigation measures for the proposed Project and the five Project alternatives fully analyzed in this EIR/EIS. The impacts and mitigation measures discussed in this section are described in full detail in Section C (Environmental Analysis) of this EIR/EIS. In accordance with both CEQA and NEPA, the impact assessment methodology considers the existing regulatory setting, direct and indirect effects of the Project, any potential growth-inducing impacts, and cumulative impacts.

This section presents a summary of the environmental impacts and applicable mitigation measures for the proposed Project and alternatives in Section ES.3.1 (Table ES-3); a comparison of environmental issues for the proposed Project and alternatives for NFS lands in Section ES.3.2 (Table ES-4); a summary of significant and unavoidable impacts in Section ES.3.3 (Table ES-5); a summary of cumulative impacts for the proposed Project and alternatives (Table ES-6) and for those occurring on NFS lands (Table ES-7) in Section ES.3.4; and a summary of indirect effects of the proposed Project and alternatives (Table ES-8) and of the PdV Wind Energy Project (Table ES-9) in Section ES.3.5. Tables ES-3, ES-4 and ES-6 through ES-9 are located at the end of this section. Table ES-5 is located within Section ES.3.3.

ES.3.1 Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

The EIR/EIS describes feasible mitigation measures that could minimize adverse impacts (CEQA Guidelines Section 15126.4 and 40 CFR 1508.20). In addition, within each issue area described in Section C (Environmental Analysis) of this EIR/EIS, mitigation measures are recommended where environmental effects could be substantially minimized for all classes of impacts (except beneficial impacts) as some reviewing agencies require a demonstration of reduction of impacts to the maximum extent possible.

The major findings of the EIR/EIS analysis are summarized below according to resource issue area. Impact findings and mitigation measures from the construction and operation of the proposed Project and all alternatives are summarized in Table ES-3, located at the end of this section.

Table ES-2. Summary Comparison Components of the Proposed Project and Alternatives on National Forest System Lands*

Component	Proposed Project	Alternatives				
		1	2	3	4	5
Total Linear Distance (Miles)	12.6	12.6	13.2	12.6	12.5	1.5
Distance Overhead (Miles)	12.6	8.6	13.2	12.6	12.5	1.5
Distance Underground (Miles)	0	4.0	0	0	0	0
Distance New ROW (Miles)	0	0	12.2	0	1.0	1.5
Underground Construction:						
Temporary Land Disturbance (Trenching) (Acres)	0	41.2	0	0	0	0
Number of Transition Sites	0	2	0	0	0	0
Permanent Land Disturbance (Transition Sites) (3 Acres Each)	0	6	0	0	0	0
Number of New (LST) Transmission Towers	58	40	66	58	58	7
Transmission Tower Construction/Placement (without Mitigation Measure V-4a):						
Permanent Land Disturbance: Footings (Acres)	0.015	0.010	0.017	0.015	0.015	0.002
Temporary Land Disturbance: Truck Damage (tire tracks), Laydown and Assembly Areas, Crane Pads, Guard Poles (Acres) (This does NOT including towers constructed by helicopter)	17.21	11.78	8.76	17.21	17.21	2.11
Temporary Land Disturbance: Guard Poles and Truck Damage (Number / Acres)	10 / 0.043	8 / 0.034	8 / 0.034	10 / 0.043	9 / 0.039	0 / 0
Number of Towers Constructed By Helicopter (without Mitigation Measure V-4a)	1	1	37	1	1	0
Number of Towers Constructed By Helicopter (with Mitigation Measure V-4a)	41	23	37	41	41	9
Spur Roads (without Mitigation Measure V-4a):						
Miles New or Improved	1.05	3.14	0.32	1.05	1.52	0.12
Acres of Permanent Land Disturbance	2.04	6.09	0.62	2.04	2.95	0.23
Acres of Permanent Land Disturbance From 50-Foot Radius Access	1.25	1.32	0.39	1.25	1.24	0.15
Acres of Temporary Land Disturbance	0.49	0.52	0.15	0.49	0.49	0.06
Access Roads:						
Miles New or Improved	9.70	10.24	10.39	9.70	9.62	1.15
Acres of Permanent Land Disturbance	18.80	19.87	20.16	18.80	18.66	2.23
Antelope-Pole Switch 74 (66-kV line) Removal:						
Number of Poles Removed (Stand-alone towers only; towers that overlap where new towers would be placed are not counted)	19	41	83	19	22	86
Acres of Temporary Land Disturbance: Truck damage (tire tracks), crane pad	1.13	2.45	4.96	1.13	1.31	5.14
Construction Areas:						
Marshalling Yards and Staging Areas	0	0	0	0	0	0
Number of Pulling Sites	10	7	11	10	10	0
Acres of Temporary Land Disturbance: Pulling Sites	2.30	1.61	2.53	2.30	2.30	0
Number of Splicing Sites	11	7	12	11	11	0
Acres of Temporary Land Disturbance: Splicing Sites	0.25	0.16	0.28	0.25	0.25	0
Total Acres of Land Disturbance	43.5	91.0	37.9	43.5	44.5	9.9
Total Acres of Permanent Land Disturbance	22.1	33.4	21.2	22.1	22.9	2.6

* Note: The information presented in this table represents estimates derived from preliminary design information available at the time of preparation of the Draft EIR/EIS. This information would be subject to change when more detailed engineering plans are developed for the Project or alternatives prior to construction.

ES.3.2 Summary of Impacts to National Forest System Lands

Implementation of either the proposed Project or any of its action alternatives would involve both temporary and permanent land disturbances on NFS lands. As noted in Table ES-2, permanent land disturbances due to the placement of tower footings and transition stations (in the case with Alternative 1) range between an estimated 0.002 acres (Alternative 5) and 6.01 acres (Alternative 1). Permanent land disturbances due to new or improved access and spur roads range between 2.6 acres (Alternative 5) and 27.3 (Alternative 1). Total land disturbance on NFS lands due to construction range between 9.9 acres (Alternative 5) and 91.0 acres (Alternative 1).

Table ES-4, located at the end of this section, provides a summary of the primary environmental issues and attributes associated with the proposed Project and Alternatives 1 through 5 as they relate to NFS lands. No key issues or differences between the alternatives have been identified for public services, socioeconomics, and utilities and service systems; consequently, they are not addressed in Table ES-4.

The environmental issues and attributes associated with the proposed Project and Alternatives 3 and 4 are generally the same. The proposed Project and Alternatives 3 and 4 when compared with the other Project alternatives would have greater adverse impacts to (1) scenic values (on NFS lands); (2) long-term fire suppression and prevention activities (on NFS lands); (3) potential for avian collisions; and, (4) result in the highest number of overhead crossings of major water bodies. In comparison to Alternatives 1 and 2, implementation of either the proposed Project or Alternatives 3 or 4 would not result in the short- and long-term impacts associated with underground or mid-slope construction and maintenance activities. In comparison to Alternative 5, the proposed Project and Alternatives 3 and 4 traverse substantially greater distances of NFS lands and therefore have the potential to affect a greater number of environmental resources.

Implementation of Alternative 1 would involve construction and operation of a four-mile underground segment of the transmission line along Saugus Del Sur Ridge. In comparison to the proposed Project and Alternatives 2 through 5, the underground segment of Alternative 1 would have potentially greater adverse effects to: (1) scenic values at transition station locations (on NFS lands); (2) construction-related air emissions; (3) construction-related fire potential; (4) temporary and permanent land disturbances; (5) construction-related impacts on Management Indicator Species and the potential to introduce invasive plant species; and, (6) exposure to Electric and Magnetic Fields. In comparison to the proposed Project and Alternatives 2, 3 and 4, Alternative 1 would reduce the potential for avian collisions along its underground segment and partially address concerns to wildland fire suppression and prevention activities within the Project area. However, potential adverse effects on the other environmental issues and attributes outlined in Table ES-4, located at the end of this section, would not be appreciably reduced under Alternative 1.

Implementation of Alternative 2 would include relocation of the proposed Project's ROW between Miles 5.7 and 18.1, and helicopter construction of 37 towers. In comparison to the proposed Project and Alternatives 1, 3, 4, and 5, Alternative 2 would have potentially greater adverse effects to (or due to): (1) aerial fire fighting activities during construction; (2) the greatest distance of ROW required on NFS lands; (3) the number of minor water body crossings traversed; and, (4) construction-related noise levels due to helicopter construction (only when compared to other alternatives without mitigation incorporated). In comparison to the proposed Project and Alternatives 3 and 4, Alternative 2 would slightly increase the potential to affect Management Indicator Species and introduce invasive plant species. However, in comparison to the proposed Project and other alternatives, Alternative 2 would avoid the Saugus Del Sur Ridge Fuelbreak and reduce: (1) visual effects along Saugus Del Sur Ridge; (2) potential conflicts with aerial and ground-based fire fighting activities in the vicinity of Saugus Del Sur Ridge and Bouquet Reservoir, and, (3) the number of overhead crossings of major water

bodies. An added benefit from Alternative 2 (and Alternative 5) would be having no transmission line (proposed 500-kV or existing 66-kV line) on Del Sur Ridge, which is an important wildland fire suppression strategic site.

As noted above, Alternative 5 would traverse approximately 1.5 miles of NFS lands; however, the temporary disturbances associated with removal of the existing Antelope-Pole Switch 74 transmission line would still occur on NFS lands. In comparison to the proposed Project and Alternatives 1 through 4, Alternative 5 would substantially reduce all of the environmental issues and attributes affected on NFS lands. An added benefit from Alternative 5 (and Alternative 2) would be having no transmission line (proposed 500-kV or existing 66-kV line) on Del Sur Ridge, which is an important wildland fire suppression strategic site.

ES.3.3 Summary of Significant and Unavoidable Impacts

Table ES-5 shows a summary of the significant and unavoidable impacts (Class I) of the proposed Project and alternatives. Detailed analyses of these impacts are discussed in Sections C.2 through C.15.

Table ES-5. Summary of Significant and Unavoidable Impacts for the Proposed Project and Alternatives

Impacts	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Air Quality						
A-1: Construction emissions would exceed the SCAQMD and AVAQMD regional emission thresholds.	X	X	X	X	X	X
A-2: Construction of the Project would expose sensitive receptors to substantial pollutant concentrations.		X				
Forest Management Activities						
F-4: Project operation could adversely impact aggressive fire suppression activities.	X	X		X	X	X
F-9: Project operation could adversely affect community safety.	X	X	X	X	X	X
Land Use and Public Recreation						
L-3: Operation of the Project would cause long-term disruption of existing residential land uses.	X	X	X	X	X	X
L-4: Operation of the Project would cause long-term disruption of existing commercial land uses.	X	X	X	X		
R-2: The siting of Project components would contribute to the long-term loss or degradation of recreational trails.						X
R-3: The Project would contribute to the long-term loss or degradation of OHV routes.		X				
Noise						
N-1: Construction noise levels would violate local standards.	X	X	X	X	X	X
N-2: Operational corona noise levels at Veluzat Motion Picture Ranch would violate Los Angeles County standards.	X	X	X	X		
N-4: Noise level increases related to routine inspection and maintenance would violate local standards.	X	X	X	X	X	X
N-5: The Project would result in a permanent increase in ambient noise levels at Veluzat Motion Picture Ranch.	X	X	X	X		
N-7: Temporary increases in ambient noise levels would severely disrupt operations at Veluzat Motion Picture Ranch.	X	X	X	X		
N-8: Temporary increases in ambient noise levels would disturb recreational users within Angeles National Forest.	X	X	X	X	X	X
Socioeconomics						
S-2: Operational activities could cause a decrease in revenues for Veluzat Motion Picture Ranch.	X	X	X	X		
S-7: Construction activities would require the removal of existing housing.						X
Visual Resources						
V-3: Project infrastructure would alter the visual quality of landscape views as seen from Lake Elizabeth Road (KOP 3).	X	X	X	X	X	

Table ES-5. Summary of Significant and Unavoidable Impacts for the Proposed Project and Alternatives

Impacts	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
V-4: Project infrastructure would alter the scenic integrity and character of landscapes seen from the Pacific Crest National Scenic Trail (KOP 4).	X	X	X	X	X	
V-5: Project infrastructure would alter the scenic integrity and character of landscapes seen from San Francisquito Canyon Road (KOP 5).	X	X		X	X	
V-6: Project infrastructure would alter the scenic integrity and character of landscapes seen from Bouquet Reservoir (KOP6).	X	X	X	X	X	
V-7: Project infrastructure would alter the scenic integrity and character of landscapes seen from Bouquet Canyon Road (KOP 7).	X		X	X	X	
V-8: Project infrastructure would alter the scenic integrity and character of landscapes seen from Vasquez Canyon Road (KOP 8).	X	X		X	X	
V-9: The Project would alter the visual quality of landscape views as seen from Veluzat Motion Picture Ranch (KOP 9).	X	X	X	X		
V-10: Project infrastructure would alter the visual quality of landscape views as seen from North High Ridge Drive (KOP 10).	X	X	X		X	X
V-11: Project infrastructure would alter the visual quality of landscape views as seen from Mountain View Park (KOP 11).	X	X	X		X	X
V-12: Project infrastructure would alter the visual quality of landscape views as seen from Rio Norte Junior High School (KOP 12).	X	X (overhead line only)	X		X	X
V-13: Project infrastructure would alter the visual quality of landscape views as seen from North Park Elementary School and Chesebrough Park (KOP 13).	X		X		X	X
V-14: Project infrastructure would alter the visual quality of landscape views as seen from Copper Hill Road (KOP 14).	X		X		X	X
V-15: The temporary visibility of construction activities and equipment involved with the Project would alter the visual quality of landscape views as seen from various vantage points throughout the Project area.	X	X	X	X	X	X
V-18: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Copper Hill Road above Agajanian Drive (KOP 4-1).					X	X
V-19: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Avenue K(KOP 5-1).						X
V-20: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lake Elizabeth Road (KOP 5-2).						X
V-21: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Leona Valley Road (KOP 5-3).						X
V-22: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lost Valley Ranch Road (KOP 5-4).						X
V-23: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Upper Bouquet Canyon Road (KOP 5-5).						X
V-24: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Sierra Highway at Anthony Road (KOP 5-6).						X
V-25: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Vasquez Rocks County Park (KOP 5-7).						X
V-26: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Escondido Canyon Road at Antelope Valley Freeway (KOP 5-8).						X
V-27: Project infrastructure would substantially degrade the visual quality of landscape views as seen from the Pacific Crest National Scenic Trail (KOP 5-9).						X
V-28: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Antelope Valley Freeway Eastbound (KOP 5-10).						X
V-29: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Antelope Valley Freeway Westbound at Agua Dulce Interchange (KOP 5-11).						X

Table ES-5. Summary of Significant and Unavoidable Impacts for the Proposed Project and Alternatives

Impacts	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
V-30: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lily of the Valley Mobile Home Village (KOP 5-12).						X
V-31: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Shadow Valley Lane (KOP 5-13).						X

ES.3.4 Summary of Cumulative Impacts

Table ES-6, located at the end of this section, is a summary of the cumulative impact analysis of the proposed Project and alternatives presented in Sections C.2 through C.15. This analysis describes the potential for impacts of the proposed Project and alternatives to combine with the effects of other projects within the geographic scope of the cumulative analysis. Also included within this section is a summary of those cumulative impacts as they apply specifically to NFS lands (see Table ES-7 located at the end of this section).

Summary of Cumulative Impacts on National Forest System Lands

Table ES-7, located at the end of this section, is a summary of the cumulative impacts of the proposed Project and alternatives that would occur specifically on NFS lands. Table ES-6, located at the end of this section includes a summary of cumulative impacts for the proposed Project and alternatives across the entire project area.

ES.3.5 Summary of Indirect Effects

In accordance with NEPA (CEQ Regulations § 15008.8(b) and CEQA (State CEQA Guidelines § 15358(a)(2), "indirect effects" may include any effects that would be caused by the proposed action but which occur later in time or farther in distance from the action. Analysis of the direct and indirect effects of the proposed Project and alternatives is provided for each environmental issue area in Section C (Environmental Analysis) and indirect effects are summarized in Table ES-8 at the end of this section. As indicated in Table ES-8, the proposed Project and alternatives are expected to cause indirect effects in the following environmental issue areas:

- Hydrology and Water Quality
- Land Use and Public Recreation
- Socioeconomics
- Utilities

The proposed Project and alternatives would result primarily in direct effects to the other environmental issue areas, including Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Paleontology; Noise; Public Health and Safety; Public Services; Traffic and Transportation; and Visual Resources. To the degree that the transmission project inhibits aggressive fire fighting, greater impacts could result from wildland fires, such as larger fires potentially causing destruction of biological resources and cultural resources, and leading to greater soil erosion after fire events.

Indirect effects may be represented by a variety of potential impacts, projects, or actions, including growth-inducing effects such as residential and commercial development, and infrastructure and public works projects, among others. Growth-inducing effects of the proposed Project and alternatives are discussed in Section E.1.4 (Growth-inducing Effects), which includes discussion of potential growth caused by direct and indirect employment (Section E.1.4.1), additional development of wind generation in the Tehachapi area (Section E.1.4.2), and potential growth related to the provision of additional electric power (Section E.1.4.3). Section

E.1.4 includes analysis of community development or expansion that may occur as an indirect effect of the proposed Project or an alternative.

One wind energy project has been identified as an indirect effect of the proposed Project and was analyzed in full detail for the purposes of this EIR/EIS. Analysis of this project, the PdV Wind Energy Project, is found in Section E.3 and a summary of impacts anticipated to occur as a result of the PdV Wind Energy Project is provided in Table ES-9 at the end of this section. The PdV Wind Energy Project is the only project that was analyzed in full detail as an indirect effect of the proposed Project because at the time of the onset of this EIR/EIS analysis, the PdV Wind Energy Project was the only reasonably foreseeable project that may occur as a consequence of the proposed Project. The PdV Wind Energy Project has an active application under consideration by Kern County, which provides basic describing the project and its location. As discussed in Section E.3, the same analytical methodologies were applied to the PdV Wind Energy Project as were applied to the proposed Project and each alternative, including significance criteria for each environmental issue area.

ES.4 Summary Comparison of Alternatives

ES.4.1 Methodology for Alternatives Comparison

This section provides a comparison of the proposed Project and alternatives based on the analysis completed in Section C (Environmental Analysis) of this EIR/EIS. The comparative analysis presented in Section D (Comparison of Alternatives) of this EIR/EIS, which is summarized below, focuses on the differences in impacts among the various alternatives for each environmental issue area. Consistent with State CEQA Guidelines (Section 15126.6(e)(2)), the environmentally superior alternative identified by the CEQA Lead Agency is also presented below and in Section D.5 (CEQA Environmentally Superior Alternative) of this EIR/EIS. The USDA Forest Service, as the NEPA Lead Agency, has not identified a preferred alternative among the alternatives analyzed in this EIR/EIS, but such an alternative will be identified in the Final EIR/EIS (40 CFR 1502.14).

The following methodology was used to compare alternatives in this EIR/EIS:

- **Step 1: Identification of Alternatives.** An alternative screening process was used to identify a number of alternatives to the proposed Project.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the proposed Project and alternatives to the proposed Project, including the No Project/Action alternative, were identified in Sections C.2 through C.15. This includes the potential impacts of the construction and operation of the transmission line and other components.
- **Step 3: Comparison of Proposed Project with Alternatives.** The environmental impacts of the proposed Project were compared to those of each alternative to determine the environmentally superior alternative as required by CEQA.

Determining an environmentally superior alternative requires balancing many environmental factors. In order to identify the environmentally superior alternative, the most important impacts in each issue area were identified and compared. Although this EIR/EIS identifies an environmentally superior alternative, it is possible that the ultimate decision-makers could balance the importance of each impact area differently and reach a different conclusion.

ES.4.2 Impacts Comparison

As explained previously in Section ES.2, and in full detail in Section B of this EIR/EIS, after conducting an alternatives screening analysis (see Appendix 1), five alternatives were selected for full analysis in this

EIR/EIS, as well as the No Project/Action Alternative. Table ES-10, located at the end of this section, presents a summary matrix of the environmental issues and impacts associated with the proposed Project and the alternatives, as described in Section C (Environmental Analysis) of this EIR/EIS. The No Project/Action Alternative would likely have impacts; however, the future transmission upgrades carried out under the No Project/Action Alternative are unknown at this time. As such, the No Project/Action Alternative is not included in Table ES-10.

The matrix provided in Table ES-10 at then end of this section is organized by environmental issue area and impact parameter. As discussed in Section C.1.3 (Significance Categories), a classification system was applied to the impacts of the proposed Project and alternatives in order to provide for a comprehensive and systematic evaluation of potential environmental impacts for each issue area. The following classifications were uniformly applied to each identified impact:

- **Class I: Significant impact; cannot be mitigated to a level that is not significant.** Class I impacts are significant adverse effects that cannot be mitigated below a level of significance through the application of feasible mitigation measures. Class I impacts are significant and unavoidable.
- **Class II: Significant impact; can be mitigated to a level that is not significant.** A Class II impact is a significant adverse effect that can be reduced to a less than significant level through the application of feasible mitigation measures presented in this EIR/EIS.
- **Class III: Adverse, less than significant.** A Class III impact is a minor change or effect on the environment that does not meet or exceed the criteria established to gauge significance.
- **Class IV: Beneficial impact.** Class IV impacts represent beneficial effects that would result from project implementation.

In cases where there is a potential for a certain type of impact, but no such impact would occur for the proposed Project or an alternative, a "no impact" classification was assigned.

Comparison of Alternatives

For the comparison analysis provided below, the proposed Project and alternatives are compared by environmental issue area, based on the analyses completed in Sections C.2 to C.15 of this EIR/EIS. Noteworthy differences between the alternatives, and the alternative(s) which would have the least environmental impact, are identified on an issue-by-issue basis. This analysis is provided to support the conclusion of the CEQA environmentally superior alternative (Section ES.3.3). The No Project/Action Alternative has not been included in the discussion below, as it was determined for all issue areas that no impacts would occur. Based on an initial evaluation, this would make the No Project/Action Alternative the environmentally superior alternative; although, the No Project/Action Alternative would likely have indirect impacts, but the future transmission upgrades carried out under the No Project/Action Alternative are unknown at this time. CEQA (Section 15126.6(e)(2)) requires an EIR to identify an environmentally superior alternative from among the other alternatives when the environmentally superior alternative is the No Project Alternative; therefore, the discussion below does not include the No Project/Action Alternative.

Air Quality

The alternative that is preferred from an air quality perspective is Alternative 3. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 3*. This alternative has marginally lower annual and overall project construction emissions than the proposed Project due to less existing tower demolition (i.e., wreckout). The worst-case daily emissions are assumed to be the same as those for the proposed Project due to similar construction scheduling and construction

requirements. The inspection and maintenance operating emissions would essentially be the same as that for proposed Project.

- *Proposed Project*. After Alternative 3, the proposed Project has the lowest annual and total construction emission totals (with the exception of the fugitive dust emission for Alternative 2 that are discussed below), and the proposed Project's emissions within the SCAB are only marginally higher (less than two percent higher) than those for Alternative 3, while the emissions within the MDAB would be identical. The worst-case daily emissions are essentially identical to Alternatives 3, 4, and 5 due to the identical assumptions regarding the worst-case daily construction activity overlap, and lower than the worst-case daily emissions for Alternatives 1 and 2 due to the proposed Project having no underground line construction (Alternative 1) and no additional helicopter construction (Alternative 2). The annual emissions and total emissions are the second lowest due to the proposed Project being comprised of only of overhead transmission line and the short length and relatively low number of towers required for the proposed Project route. The inspection and maintenance operating emissions for the proposed Project would be as low as or lower than the operating emission for all of the alternatives due to the fact that the proposed Project has, tied with Alternative 3, the shortest transmission route.
- *Alternative 4*. This alternative has annual and total construction emissions that are marginally higher than the proposed Project due to a marginally longer route. The worst-case daily emissions are assumed to be the same as those for the proposed Project due to similar construction scheduling and construction requirements. The inspection and maintenance operating emissions would essentially be the same as that for proposed Project.
- *Alternative 2*. This alternative has higher annual and total construction emissions and daily construction emissions due to additional helicopter use. The annual and overall fugitive dust emissions are somewhat lower than all of the other alternatives; however, helicopter prop wash emission formation is not included in the fugitive dust emission totals, and the equipment related PM10/PM2.5 emissions are higher than the preceding alternatives and these emissions are weighted more strongly than the fugitive dust emissions due to the more significant health impacts related with engine exhaust emissions. However, the higher daily emissions from this alternative are due to remote helicopter emissions, so the daily emissions increase does not cause this alternative to be ranked lower than fourth. The inspection and maintenance operating emissions would essentially be the same as that for proposed Project.
- *Alternative 5*. This alternative has the second highest annual and total emissions and increases emissions in both the SCAB and MDAB (not shown in the Table D.3-1 summary) portions of the route due to the increase in transmission line route length in both air basins. The worst-case daily emissions are assumed to be the same as those for the proposed Project due to the longer construction schedule allowing for the same worst-case daily construction activities. The inspection and maintenance operating emissions would be somewhat higher than the preceding four alternatives due to the increase in route length.
- *Alternative 1*. This alternative has significantly higher annual and total construction emissions than all of the other alternatives and has a much longer construction schedule which will cause the significant regional emission impacts to last longer than the other alternatives. Additionally this alternative is the only alternative to have significant localized impacts due to the underground transmission line construction occurring so close to sensitive receptors. The worst-case daily emissions are higher than all of the other alternatives other than Alternative 2, and the effective ground-level impacts of this alternative's maximum daily emissions may be higher those of Alternative 2 as all of the incremental increase in emissions occur at ground level. The inspection and maintenance operating emissions for this alternative would be the highest of all of the alternatives due to the additional inspection and maintenance activities required for the underground transmission line segments.

Biological Resources

The alternative that is preferred from a biological perspective is Alternative 5. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 5*. This alternative would result in greater temporary impacts to habitat compared to the other alternatives and may result in beneficial impacts to the California condor and MIS on NFS lands. In addition, this alternative is located in habitats characterized by greater disturbance than the other Alternatives.
- *Alternative 2*. This alternative would result in a net reduction of habitat loss compared to the other alternatives and would place the transmission line towers down slope from the Del Sur Ridge. This alternative may reduce the potential for line collisions by raptors, including condors by reducing the number of towers located on the top of Del Sur Ridge. Construction in mid-slope areas does introduce some potential risk to MIS and sensitive aquatic

resources that are present in Bouquet Creek; however, these impacts are not expected to result in significant impacts.

- *Proposed Project / Alternative 3 / Alternative 4.* These Alternatives would be considered the same regarding potential impacts to biological resources. With the exception of minor route alignments these alternatives are largely the same and would result in the same types of impacts to biological resources.
- *Alternative 1.* This alternative would result in the longest period of construction disturbance to plant and wildlife communities in both the ANF and the Santa Clarita area compared to that of the proposed Project or any of the alternatives due to activities associated with underground construction (29 months verses 13-16 months). The large area of disturbance and increased level of construction activity would increase the potential for the introduction of exotic weeds and would have the greatest impact to MIS on the ANF. The development of an all weather road along the ridge line would also result in indirect effects to wildlife from increased recreational usage.

Cultural Resources

The alternatives that are preferred from a cultural resources perspective are Alternatives 2 and 4. Below is a summary of the ranking of the proposed Project route and alternatives.

- *Alternative 2 / Alternative 4.* These alternatives are preferred because they have the fewest Class II impacts.
- *Alternative 5.* This alternative has ten Class II impacts.
- *Proposed Project / Alternative 1 / Alternative 3.* The proposed Project route and Alternatives 1 and 3 have twelve Class II impacts.

However, this ranking will change once the resources are evaluated for National Register of Historic Places eligibility. Only impacts to eligible resources are potentially significant. Therefore, the number of Class II impacts by alternative will change.

Geology, Soils, and Paleontology

From a geology, soils, and paleontology perspective, the proposed Project and Alternative 3 are equally preferred. Alternative 3 has identical impacts as the proposed Project due to its identical alignment and thus identical geologic setting. Below is a summary of the ranking of the proposed Project and alternatives.

- *Proposed Project/Alternative 3.* The proposed Project and Alternative 3 result in the least ground disturbance and thus result in the lowest potential for construction related slope instability and erosion.
- *Alternative 4.* Alternative 4 is only slightly less preferred due to a minor increase in potential soil erosion due to a slightly larger amount of ground disturbance than the proposed Project (approximately 125.5 acres vs.121.8 acres).
- *Alternative 2/Alternative 5.* Alternatives 2 and 5 are equally less preferred, although each has differing reasons. Alternative 2 crosses more existing landslides than the other alignments and would have the most susceptibility to Impacts G-1 and G-9. Alternative 5 would be subject to a higher potential for strong groundshaking to damage project structures (Impact G-6) than the proposed Project or other alternatives.
- *Alternative 1.* Alternative 1 is the least preferred alternative due to its increased potential for liquefaction related damage (Impact G-5); slightly greater potential for damage to or destruction of significant fossils (Impact G-10); and additional impacts not found in the other alternatives: impacts resulting from interference with access to known mineral resources (Impact G-11), substantial alteration of topography (Impact G-12); and the potential to damage the underground transmission line as a result of surface fault rupture at the crossing of the active San Gabriel Fault in Santa Clarita (Impact G-13).

Public Health and Safety

The proposed Project and Alternatives 2, 3, 4, and 5 would have fewer impacts than Alternative 1 and would otherwise have generally equivalent impacts and would, therefore, be preferable with regard to Public Health and Safety issues.

- *Proposed Project/Alternative 2/Alternative 3/Alternative 4/Alternative 5.* The proposed Project and Alternatives 2, 3, 4, and 5 have equivalent levels of potential significance related to Impacts PH-1 through PH-4 and would be equally preferable to Alternative 1.
- *Alternative 1.* Alternative 1 has significantly more ground disturbance in the Santa Clarita area resulting in an increased potential for Impacts PH-1 and PH-3. Additionally, repair of the underground facilities for Alternative 1 could result in the need to re-trench and excavate, thereby re-introducing the potential for the accidental release of hazardous materials during the operation and maintenance of Alternative 1 (Impact PH-4).

Forest Management Activities

The alternative that is preferred from a forest management perspective is Alternative 5. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 5*. As Alternative 5 would be largely off of NFS lands, this alternative would result in the fewest impacts to Forest Management Activities and would benefit the aggressive fire suppression and firefighter safety by relocating the transmission line away from Del Sur Ridge.
- *Alternative 2*. Alternative 2 would also benefit aggressive fire suppression and firefighter safety by relocating the transmission line off of Del Sur Ridge, but because the route traverses the NFS lands, more impacts to Forest Management Activities would occur than Alternative 5.
- *Alternative 1*. As with Alternatives 2 and 5, Alternative 1 would benefit firefighter safety by locating four miles of the transmission line underground in Del Sur Ridge and would also benefit fire prevention activities. However, much of the rest of the route would be the same as the proposed Project and so would suffer from many of the same impacts associated with increased tower heights and fire prevention restrictions.
- *Proposed Project/Alternative 3/Alternative 4*. The proposed Project would not result in any benefits to Forest Management Activities and with the overhead transmission line traversing the NFS lands would result in a wide variety of adverse impacts to Forest Management Activities. As the route of the transmission line through the NFS lands would be largely the same as the proposed Project, Alternatives 3 and 4 would have the same impacts as the proposed Project.

Hydrology and Water Quality

The alternative that is preferred from a hydrology and water quality perspective is Alternative 3. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 3.* Alternative 3 is preferable to the proposed Project and other alternatives with regards to hydrology and water quality impacts. This alternative would be the same as the proposed Project with the exception of the segment between Mile 20.3 and Mile 25.6, where Alternative 3 would avoid the demolition of existing transmission towers and therefore avoid the production of associated soil erosion and sedimentation that could degrade local water quality.
- *Proposed Project/Alternative 4.* The proposed Project and Alternative 4 would have the same impacts to hydrology and water quality, as indicated above in Table B.4-7 and discussed in Section C.8. These alternatives would be less preferable to Alternative 3 due to the production of soil erosion and sedimentation associated with the demolition of existing transmission towers between Mile 20.3 and Mile 25.6.
- *Alternative 5.* Alternative 5 would be less preferable than the proposed Project and Alternatives 3 and 4 because it would introduce impacts to hydrology and water quality along the proposed alignment as well as along the alignment of the existing 119 66-kV towers and associated hardware that would be removed from SCE's Saugus-Del Sur utility corridor. As with the proposed Project and Alternatives 3 and 4, Alternative 5 would have five Class II impacts and two Class III impacts.
- *Alternative 1.* In comparison with the proposed Project and preceding alternatives, Alternative 1 would have a greater potential to affect hydrology and water quality due to the more invasive nature of installing underground infrastructure. Alternative 1 is preferable to Alternative 2 because it would not introduce any Class I impacts to hydrology and water quality.
- *Alternative 2.* Alternative 2 is the least preferable alternative with regard to hydrology and water quality because it would introduce short-term and ongoing impacts to water quality due to erosion and sedimentation resulting from

the installation of permanent infrastructure in steep hillside areas along the eastern mid-slope of Del Sur Ridge. Other impacts of Alternative 2 would be the same as the proposed Project, as discussed in Section C.8.

Land Use and Public Recreation

The alternative that is preferred from a land use and public recreation perspective is Alternative 4. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 4.* As Alternative 4 would avoid significant impacts to the Veluzat Motion Picture Ranch, the Bouquet Canyon Stone Company, and recreational trails, it is the preferred alternative regarding land use and public recreation.
- *Proposed Project/Alternative 2/Alternative 3.* The proposed Project, Alternative 2, and Alternative 3 would avoid significant impacts to Bouquet Canyon Stone Company and recreational trails. Approximately 11 miles of new and/or improved access/spur roads would be created, which is less than the miles of roads required for Alternative 1. Although the proposed Project, Alternative 2, and Alternative 3 would permanently preclude private land, it would not require the removal of existing residences.
- *Alternative 5.* Alternative 5 would avoid significant impacts to the Veluzat Motion Picture Ranch and the Bouquet Canyon Stone Company. Alternative 5 would traverse 103 privately owned parcels and possibly remove one or more homes. However, it would result in fewer significant and unavoidable land use and public recreation impacts than Alternative 1.
- *Alternative 1.* Alternative 1 would significantly impact the Veluzat Motion Picture Ranch and would contribute to the permanent loss of OHV routes on Del Sur Ridge. This alternative would require mitigation to reduce the impacts to Bouquet Canyon Stone Company to a less-than-significant level. Undergrounding activities along Del Sur Ridge Road would also require an extended closure of recreational trails. Given the greater number of significant impacts, this alternative is the least preferable among the proposed Project and alternatives.

Noise

The alternative that is preferred from a noise perspective is Alternative 4. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 4.* This alternative would result in only slightly greater noise impacts during construction than some of the alternatives (proposed Project and Alternative 3), as a result of being 0.3 miles longer; however, it would avoid (with mitigation) all noise impacts to the Veluzat Motion Picture Ranch.
- *Alternative 3.* This alternative would avoid construction impacts associated with the removal of the single-circuit 500-kV towers between Mile 20.3 and 25.6. As such, construction noise from onsite construction equipment and haul trucks within this segment of the ROW would be less than the proposed Project or the alternatives listed below. Noise impacts to the ANF and Veluzat Motion Picture Ranch would be significant.
- *Proposed Project.* The proposed Project would traverse 12.6 miles of NFS lands, as well as the Veluzat Motion Picture Ranch, and would include the removal of the single-circuit 500-kV towers between Mile 20.3 and 25.6. No significant noise impacts would be avoided.
- *Alternative 2.* This alternative would traverse 13.2 miles of NFS lands, as well as the Veluzat Motion Picture Ranch. Furthermore, construction (i.e. duration of noise impacts) would increase from 13 to 14 months. No significant noise impacts would be avoided.
- *Alternative 5.* This alternative would have the potential to expose the greatest number of residences to noise associated with construction, operation, and maintenance activities than any of the other alternatives, as it would traverse Lancaster, Leona Valley, Agua Dulce, and the Santa Clarita area. Furthermore, construction (i.e., duration of noise impacts) would increase from 13 to 16 months. Alternative 5, however, would avoid impacts to the Veluzat Motion Picture Ranch.
- *Alternative 1.* This alternative would result in the longest period of construction noise nuisance in both the ANF and the Santa Clarita area compared to that of the proposed Project or any of the alternatives due to activities associated with underground construction (29 months verses 13 to 16 months). Additional inspection and maintenance activities would be required resulting in greater and/or more frequent temporary noise impacts. Furthermore, noise impacts to the Veluzat Motion Picture would not be avoided.

Public Services

The alternative that is preferred from a public services perspective is Alternative 1. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 1*. Although the underground construction activities associated with Alternative 1 would increase fire risks and the potential demand for fire protection services, locating the transmission line underground for portions of the route eliminates the risk of the transmission line starting a fire in these areas and reduces the overall long-term demand on public services.
- *Alternative 3*. Alternative 3 would result in slightly reduced impacts to public service facilities serving the proposed transmission line route as those associated with the proposed Project due to the construction of single circuit towers versus double circuit towers associated with the proposed Project. Smaller transmission line towers would result in a slight decrease in potential fire hazards related to transmission line contact with vegetation.
- *Proposed Project/Alternative 4*. With the entire length of the proposed Project transmission line located overhead and configured as double-circuit towers, the fire risks associated with the proposed Project would result in a greater demand on fire protection services than Alternatives 1 and 3. Alternative 4 would result in the same impacts to Public Services as the proposed Project.
- *Alternative 2*. Alternative 2 would result in similar impacts to Public Services as those associated with the proposed Project, although with the location of 37 of the towers away from access roads, this alternative would increase the demands on aerial firefighting resources in the case of a fire event.
- *Alternative 5*. This alternative would have similar fire risks as the proposed Project, but with more than 10 additional miles of transmission line. Consequently, this alternative would have the greatest demands on Public Services.

Socioeconomics

The alternative that is preferred from a socioeconomic perspective is Alternative 4. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 4*. Alternative 4 would avoid direct revenue impacts to the Veluzat Motion Picture Ranch.
- *Alternative 5*. While Alternative 5 could result in the removal of existing housing (Class I impact), it would avoid direct revenue impacts to the Veluzat Motion Picture Ranch and Bouquet Canyon Stone Quarry.
- *Proposed Project/Alternative 2/Alternative 3*. The proposed Project would avoid the removal of existing housing and Bouquet Canyon Stone Quarry, but result in direct revenue impacts to the Veluzat Motion Picture Ranch. Alternatives 2 and 3 would result in socioeconomic impacts identical to those of the proposed Project.
- *Alternative 1*. Alternative 1 would result in similar socioeconomic impacts as those associated with the proposed Project, but would additionally result in direct revenue impacts to Bouquet Canyon Stone Quarry.

Traffic and Transportation

The alternative that is preferred from a traffic and transportation perspective is Alternative 3. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 3*. Based on the analysis presented in Section C.13 Traffic, Alternative 3 is the preferred alternative to the proposed Project. This alternative would result in slightly decreased effects of Impacts T-1 and T-2 than the proposed Project due to the reduced construction traffic and activities required to complete it.
- *Proposed Project/Alternative 4*. The proposed Project and Alternative 4 would each result in one more impact (Impact T-8) than Alternative 3 (the preferred alternative) as well as slightly increased effects of Impacts T-1 and T-2 than Alternative 3 due to the increased construction traffic and activities required to complete them.
- *Alternative 2*. Impacts of this alternative are similar in type and number to those of the proposed Project, Alternative 3, and Alternative 4. However, the re-routed segment of Alternative 2 would include crossings at Spunky Canyon Road and Bouquet Canyon Road that would be within close proximity to each other. Bouquet Canyon Road provides a north-south route from Palmdale through the ANF to Santa Clarita. Spunky Canyon Road

provides access to residential uses within the northern portion of the ANF. The proximity of these two crossings could result in increased duration and severity of Impacts T-1, T-2, T-4, and T-7.

- *Alternative 5*. Although this alternative would result in no impacts to the ANF, it would result in nine more road crossings than the proposed Project, including two crossings of State Route 14. The increased number of crossings would result in increased duration and severity of Impacts T-1, T-4, and T-7. This alternative could result in the additional Impact T-10 (Conflict with a Transportation Plan).
- *Alternative 1*. The underground construction activities required for implementation of this alternative would result in increased duration and/or magnitude of Impacts T-1, T-3, T-4, T-5, and T-9.

Utilities and Service Systems

The alternative that is preferred from a utilities and service system perspective is Alternative 3. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 3*. While the effects of Alternative 3 on wastewater and stormwater would be the same as for the proposed Project and all the other alternatives, Alternative 3 would require the least water and generate the least waste of the proposed Project and alternatives, requiring only 5.77 acre-feet of water and generating 1,991 tons of waste.
- *Proposed Project*. The proposed Project would require 5.82 acre-feet of water and would generate 2,620 tons of waste, both of which would be less than all of the other alternatives except Alternative 3.
- *Alternative 4*. Alternative 4 would require 6.00 acre-feet of water and generate 2,630 tons of waste, both of which would be less than Alternatives 2, 5, and 1.
- *Alternative 2*. Alternative 2 would require 6.06 acre-feet of water and generate 2,634 tons of waste, which would be less than the water required and waste generated by Alternatives 5 and 1.
- *Alternative 5*. Alternative 5 would require 8.60 acre-feet of water and would generate 4,605 tons of waste, more than the proposed Project or any of the other alternatives except Alternative 1.
- *Alternative 1*. Alternative 1 would generate the most waste and require the most water of any of the alternatives, generating 159,839 tons of waste and require 25.00 acre-feet of water.

Visual Resources

The alternative that is preferred from a visual resources perspective is Alternative 5. Below is a summary of the ranking of the proposed Project and alternatives.

- *Alternative 5*. Based on the analysis of visual resource impacts as explained in Section C.15, Visual Resources, Alternative 5 would have the most beneficial effects and on the visual environment of the ANF by removing existing 66-kV transmission line infrastructure. Alternative 5 would create the least detrimental effects on NFS lands by crossing only three small, scattered tracts, totaling 1.5-miles in length. Alternative 5 would cross the PCT in an environment where three large transmission lines already exist in an existing utility corridor, in a visually disturbed area, where viewer expectations for scenic integrity would be lower. This would lessen the overall visual impact to PCT users. Furthermore, Alternative 5 would avoid the Veluzat Motion Picture Ranch.

- *Alternative 2*. Alternative 2 would remove existing transmission line infrastructure from the top of Del Sur Ridge, thus improving the visual environment of NFS lands. However, Alternative 2 would still impact NFS lands from Mile 5.7 to 18.6, and therefore is not the preferred alternative for visual resources, but is preferred over the proposed Project and Alternatives 1, 3, and 4.

- *Alternative 3*. Alternative 3 would have the generally same visual impacts as the proposed Project in the Antelope Valley, ANF, and the Veluzat Motion Picture Ranch. It is preferred over the proposed Project from a visual resource standpoint because it would avoid the taller, more visually obtrusive, lattice steel structures (double-circuit towers) in Santa Clarita, and instead would create an additional single-circuit transmission line with shorter towers in an existing utility corridor.

- *Alternative 4.* Alternative 4 would generally have the same visual impacts as the proposed Project in the Antelope Valley, ANF, and Santa Clarita. It is preferred from a visual resource standpoint because it avoids the Veluzat Motion Picture Ranch; however, it would create more skyline blockage, structure prominence, and industrial character in Santa Clarita because of the taller double-circuit towers, the same as the proposed Project.

- *Proposed Project.* The proposed Project would result in significant increases in visual contrasts, including increased structure prominence, increased skyline blockage, and increased scale dominance of industrial-character structures in the Antelope Valley, ANF, and Santa Clarita. The only alternative that has greater visual prominence and greater disturbance to the visual environment is Alternative 1, with its partial undergrounding on top of Del Sur Ridge and in Santa Clarita.

- *Alternative 1.* The underground section on NFS lands would create visually prominent, permanent landform and vegetation disturbances on Del Sur Ridge, and would result in visually unacceptable modifications to the National Forest landscape. Alternative 1 would have all the same visual impacts and disadvantages as the proposed Project in the Antelope Valley, in the Veluzat Motion Picture Ranch, and in Santa Clarita.

ES.4.3 CEQA Environmentally Superior Alternative

In accordance with CEQA requirements, an "environmentally superior alternative" must be identified among the alternatives analyzed in the EIR/EIS. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other alternatives based on the impact analysis in the EIR. If the environmentally superior alternative is also the No Project alternative, State CEQA Guidelines Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives. The environmentally superior alternative is determined by the CEQA Lead Agency.

Determining which of the alternatives is environmentally superior involves judgment and depends on many factors. Different alternatives are clearly superior in certain environmental issue areas, while in other issue areas there are only slight differences among the alternatives, which ultimately do not alter the significance determinations for the impacts. In order to meet the CEQA requirements to identify an environmentally superior alternative, the EIR/EIS preparers primarily considered those issue areas that have the greatest potential for resulting in long-term, significant impacts, which include visual resources, forest management activities, erosion, land use, public recreation, socioeconomics, and noise. Consideration was also given to community concerns, such as air quality, EMF, and corona noise, as well as public safety concerns, such as fire safety. Impacts associated with construction (i.e., temporary or short-term) or those that are easily mitigated to less-than-significant levels were given consideration, but were considered less important than permanent impacts. Pursuant to State CEQA Guidelines Section 15126.6(b), alternatives with potential for avoiding or substantially lessening the significant impacts may be considered even if they are more costly.

As shown in the alternatives comparison matrix in Table ES-10 (a side-by-side comparison of the proposed Project and alternatives) at the end of this section, and as discussed in Section D.4, several of the alternatives have many closely matched impacts, or would have fewer impacts for some issue areas while having greater impacts in other issues area, making a clear demonstration of the environmental superiority of one alternative difficult. To a large degree, the major differences in alternatives revolve around the fact that most alternative routes cut across NFS lands, while one alternative largely avoids NFS lands. This major routing difference creates substantial differences between Alternative 5 and the other alternative routes, including the proposed Project.

There are basically three alternative routes that traverse the ANF. These are the proposed Project, Alternative 1, and Alternative 2. Alternatives 3 and 4 are only substantially different from these other routes outside the ANF. It is clear that Alternative 1, which involves placing the transmission line underground on Del Sur Ridge,

has substantially greater impacts than the proposed Project and Alternative 2. Alternative 2 is preferable to the proposed Project for reasons primarily dealing with visual resources and fire fighting. Therefore, the environmental advantages and disadvantages of a Forest versus a non-Forest route can best be determined by comparing Alternative 2 and Alternative 5.

Another route to consider is the combination of Alternatives 2 and 4. Unlike most of the other routing options, these two alternatives can be readily combined to form a hybrid alternative. The advantage of considering such a hybrid alternative is that Alternative 4 avoids certain specific impacts associated with Alternative 2 alone and also avoids most of the non-NFS impacts associated with Alternative 5.

Based on the comparisons of alternatives for each issue area presented in Section D.4, Alternative 2 is superior to Alternative 5 in six issue areas (air quality, cultural resources, land use/public recreation, noise, traffic/transportation, and utilities), whereas Alternative 5 is superior to Alternative 2 in six issue areas (biological resources, geology/soils, forest management activities, hydrology/water quality, socioeconomics, and visual resources). There is no substantive difference in impacts related to public health/safety and public services. Of the differentiating issue areas, Alternative 2 is substantially superior to Alternative 5 in three issue areas (noise, traffic/transportation, and utilities), and Alternative 5 is substantially superior to Alternative 2 in four issue areas (biological resources, socioeconomics, forest management activities, and visual resources). As this demonstrates, these two alternatives both have advantages and disadvantages relative to each other. In determining the superiority of one alternative to the other, other considerations have to be taken into account, including long-term versus short-term advantages and the relative importance of some issues compared to others.

Many of the Project's impacts are associated only with construction and, therefore, are short term in nature, ranging in duration from a few days to the entire period of construction (14 to 16 months). These are impacts associated primarily with air quality, biological resources, cultural resources, geology/soils, water quality, noise, and traffic/transportation. While many of the short-term construction impacts are significant, it is usually the long-term impacts that are considered more important in determining the superiority of an alternative since such impacts have a lasting effect on the environment and will make an ongoing contribution to cumulative impacts. Many of the short-term impacts are a consequence of land disturbance associated with construction and have little lasting effect after the land surface has been restored after construction. Other short-term impacts are associated with temporary construction effects on human beings and the built environment, which cease when construction is completed. Therefore, in the case of the proposed transmission project, significant long-term effects are primarily associated with forest management activities (fire fighting), erosion (along newly created roads), land use/recreation, noise (corona noise from conductors), socioeconomics, and visual resources. Impacts related to other issue areas either cease when construction is over or are assumed to be insignificant after the land surface has been restored and revegetated (this is required by mitigation). A comparison of long-term effects is summarized below.

- In reviewing the comparisons of the long-term effects for Alternatives 2 and 5 in Section D.4, Alternative 5 offers advantages in terms of visual resources on NFS lands. Effects on visual resources are also important considerations on non-NFS lands, but these effects are considered more significant on NFS lands due the Scenic Integrity Objectives of the 2005 ANF Forest Management Plan (Forest Plan). Alternative 2 substantially mitigates the visual impact on NFS lands by placing the transmission line in a mid-slope location. Alternative 5 has very little conflict with the Forest Plan because it largely avoids NFS lands. While this may make Alternative 5 seem superior to Alternative 2 from a visual resources standpoint, Alternative 5 also has certain disadvantages compared to Alternative 2. Alternative 5 would introduce a new transmission line into an 18.8-mile-long corridor where no transmission lines currently exist. This added visual element would not be welcomed by viewers along the route of Alternative 5, including adjacent homeowners, and it would be more visible to a greater number of residents and

travelers (along Sierra Highway, Escondido Avenue, and the Antelope Freeway) than Alternative 2. Therefore, both alternatives would have substantial adverse visual impacts.

- The existence of transmission lines can hinder fire suppression in wildland areas, especially aerial operations. Therefore, both Alternative 5 and Alternative 2 would constrain the ability to aggressively fight a wildland fire in the vicinity of either route. Ridgetop locations are considered especially important to fire suppression and Alternative 2 attempts to minimize any hindrance the transmission line may cause to fire suppression by placing the transmission line in a mid-slope location rather than along the ridge top. Obviously, Alternative 5 presents little direct effect on fire fighting on the ANF because it largely avoids NFS lands, but a transmission line outside the ANF also presents a hindrance to aggressive fire fighting. The route for Alternative 5 would require transmission towers on Sierra Pelona ridge just outside the Forest boundary. Alternative 5 also traverses several inhabited rural and semi-rural areas not affected by Alternative 2, including portions of Leona Valley and Agua Dulce, where protection of homes and property would likely become a priority in the event of a wildland fire in that area. Therefore, fire fighting is problematic for both alternatives.
- For both Alternative 2 and Alternative 5, new unpaved roads would need to be constructed across soils with a "severe" hazard rating for erosion. In addition, portions of existing unpaved roads would need to be improved. These roads would accelerate natural erosion processes, especially in steep hillside areas, because the soil surface would remain exposed as long as these roads are maintained and used. This impact is similar for both alternatives (11.9 miles of new and/or improved roads for Alternative 2 and 12.0 miles of new and/or improved roads for Alternative 5).
- Long-term noise effects associated with the proposed transmission line are limited to corona noise and periodic noise that would be generated by maintenance activities. Noise associated with maintenance activities is generally minor and only occurs for a short time between long intervals and, therefore, is not significant. Corona noise is localized and only affects receptors in close proximity to the transmission line. Therefore, only adjacent noise-sensitive land uses have the potential to be adversely affected by corona noise. Alternative 5 has more adjacent land uses that would be exposed to corona noise for the first time, but Alternative 2 has one particularly sensitive adjacent land use – the Veluzat Motion Picture Ranch. If Alternative 2 is combined with Alternative 4, then the combination of these alternatives would result in the least overall noise impacts because it also minimizes impacts to the motion picture ranch.
- In considering land use and socioeconomic impacts, Alternatives 2 and 5 both have advantages and disadvantages. Alternative 5 would avoid adverse effects to the Veluzat Motion Picture Ranch. This advantage of Alternative 5 is offset by the fact that it would require the acquisition of substantially more private land than Alternative 2 and would place the new transmission line adjacent to more existing homes than Alternative 2. Alternative 5 is also expected to result in the loss of at least one existing home and the consequent displacement of the residents of any homes that need to be acquired. As a result, Alternative 5 has a greater magnitude of impact to existing land uses than Alternative 2. If Alternative 2 is combined with Alternative 4, then the combination of Alternative 2 and Alternative 4 would have the least impacts because it would avoid the effects to the motion picture ranch as well as impacts of Alternative 5 on existing land uses in the Leona Valley and Agua Dulce.
- Alternative 2 and Alternative 5 both would have long-term effects on public recreational resources. Alternative 2 would involve new road construction on NFS lands to facilitate construction of the transmission line. These new roads would invite unauthorized OHV use, which could accelerate erosion, damage resources, and adversely affect public safety. Based on the Forest Service's past experience with OHV use, Alternative 2 could cause significant impacts to the Forest and would have a greater impact than Alternative 5. Both Alternative 2 and Alternative 5 would cross the Pacific Crest National Scenic Trail. Both alternatives would affect the trail by constructing a new transmission line across it, but this would be somewhat offset by the fact that the crossing of the trail by existing 66-kV line would be eliminated under both alternatives.

Considering the long-term effects of Alternatives 2 and 5 discussed above, the two alternatives both have advantages and disadvantages relative to each other. The question of which alternative is environmentally superiority is debatable and is influenced by the relative importance placed on different areas of impact. Alternative 5 has advantages in terms of erosion impacts and public recreation, and Alternative 2 has advantages related to noise, land use, and socioeconomics. From the standpoint of visual resources and fire

fighting, both alternatives have significant adverse impacts, although these impacts are mitigated to a greater degree with Alternative 2.

The combination of Alternative 2 and Alternative 4 is a substantial improvement over Alternative 2 alone. The combination of Alternatives 2 and 4 avoids or further reduces long-term effects related to noise, land use, and socioeconomics. Long-term impacts related to visual resources, fire suppression, erosion, and public recreation would be basically the same for the Alternative 2/4 combination as for Alternative 2 alone. From the standpoint of effects on NFS lands and compliance with Forest Plan policies, Alternative 2 or the combination of Alternatives 2 and 4 clearly has greater impacts than Alternative 5. However, when considering the whole of action without placing added emphasis on Forest impacts and issues, the combination of Alternatives 2 and 4 is superior to Alternative 5, and would result in the fewest significant unavoidable (Class I) impacts overall.

ES.4.4 NEPA Lead Agency Preferred Alternative

40 CFR 1502.14(e) states that agency's shall: identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference. The USDA Forest Service has not identified a Preferred Alternative or Alternatives at this draft stage and will identify a Preferred Alternative or Alternatives in the Final EIR/EIS.

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
Air Quality				
A-1: Construction emissions would exceed the SCAQMD and AVAQMD regional emission thresholds.	Project	Class I	X	A-1a: Implement Construction Fugitive Dust Control Plan. A-1b: Properly Maintain Mechanical Equipment. A-1c: Use Ultra Low-sulfur Diesel Fuel. A-1d: Restrict Engine Idling to 10 Minutes. A-1e: Schedule Deliveries Outside of Peak Traffic Hours. A-1f: Offroad Diesel-fueled Equipment Standards. A-1g: On-road Vehicles Standards. A-1h: Offroad Gasoline-fueled Equipment Standards. A-1i: Reduction of Helicopter Emissions.
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class I	X	
A-2: Construction of the Project would expose sensitive receptors to substantial pollutant concentrations.	Project	Class II	X	A-1a: Implement Construction Fugitive Dust Control Plan. A-1b: Properly Maintain Mechanical Equipment. A-1c: Use Ultra Low-sulfur Diesel Fuel. A-1d: Restrict Engine Idling to 10 Minutes. A-1e: Schedule Deliveries Outside of Peak Traffic Hours. A-1f: Offroad Diesel-fueled Equipment Standards. A-1g: On-road Vehicles Standards. A-1h: Offroad Gasoline-fueled Equipment Standards. A-1i: Reduction of Helicopter Emissions.
	Alt. 1	Class I	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
A-3: The Project would not conform to Federal General Conformity Rules.	Project	Class II	X	A-1a: Implement Construction Fugitive Dust Control Plan. A-1b: Properly Maintain Mechanical Equipment. A-1c: Use Ultra Low-sulfur Diesel Fuel. A-1d: Restrict Engine Idling to 10 Minutes. A-1e: Schedule Deliveries Outside of Peak Traffic Hours. A-1f: Offroad Diesel-fueled Equipment Standards. A-1g: On-road Vehicles Standards. A-1h: Offroad Gasoline-fueled Equipment Standards. A-1i: Reduction of Helicopter Emissions. A-4a: Emission Offsets. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
A-4: The Project would create objectionable odors.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
A-5: The Project would not conform to Angeles National Forest air quality strategies.	Project	Class II	X	A-1a: Implement Construction Fugitive Dust Control Plan. A-1b: Properly Maintain Mechanical Equipment.
	Alt. 1	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 2	Class II	X	A-1c: Use Ultra Low-sulfur Diesel Fuel. A-1d: Restrict Engine Idling to 10 Minutes. A-1e: Schedule Deliveries Outside of Peak Traffic Hours. A-1f: Offroad Diesel-fueled Equipment Standards. A-1g: On-road Vehicles Standards. A-1h: Offroad Gasoline-fueled Equipment Standards. A-1i: Reduction of Helicopter Emissions.
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
Biological Resources				
B-1: The Project would cause temporary or permanent loss of native vegetation communities.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. (Project; Alts. 1-4 only) B-1c: Topsoil Salvage. (Alt. 1 only) R-4: Permanent Closure and Re-vegetation of Construction Roads. (Project only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-2: The Project would cause temporary damage or permanent loss of oak trees.	Project	Class II	X	B-2: Restoration of Coast Live Oak Trees.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-3: The Project would cause loss of foraging habitat for wildlife.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected).
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-4: The Project would introduce non-native and invasive plant species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-4: Implement Weed Control Measures. R-4: Permanent Closure and Re-vegetation of Construction Roads.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
B-6: Construction activities during the breeding season would result in a potential loss of nesting birds.	Project	Class II	X	B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-7: The proposed Project would result in the loss of listed plant species.	Project	Class II	X	B-7: Conduct Surveys for Listed and Sensitive Plant Species.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-8: Construction activities would result in loss of arroyo toads.	Project	Class II	X	B-8a: Conduct Focused Surveys for Arroyo Toad. B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-9: Construction activities would result in the loss of California red-legged frogs.	Project	Class II	X	B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages. B-9: Conduct Focused Surveys for California Red-legged Frog.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-10: The Project would result in loss of foraging habitat for listed raptor species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-11: The Project would result in loss of listed riparian bird species.	Project	Class II	X	B-1b: No Activities will occur in Riparian Conservation Areas. B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-12: The Project would result in the loss of coastal California gnatcatchers.	Project	Class II	X	B-12: Conduct Protocol Surveys for California Gnatcatchers.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-13: The Project would result in the electrocution of listed bird species.	Project	Class III	X	B-13: Raptor Safety Protection will be required on Tower/Conductor (Lines) on NFS Lands.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
B-14: The Project would result in transmission line collisions by listed bird species.	Project	Class II	X	B-14: Utilize Collision-reducing Techniques. V-17b: Use Magnetic Coils at Entrance Gate. (Alt. 1 only) V-17c: Use Only Low-Level, Directional, Shielded Lighting. (Alt. 1 only) V-17d: Only Perform Maintenance Activities During Daylight Hours. (Alt.1 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-15: The Project would result in the loss of special-status plant species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). (Alt. 1 only) B-1b: No Activities will occur in Riparian Conservation Areas. (Alt. 1 only) B-4: Implement Weed Control Measures. (Alt. 1 only) B-7: Conduct Surveys for Listed and Sensitive Plant Species.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-16: The Project would result in the loss of special-status amphibian species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. (Project; Alts. 1-4 only) B-16: Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-17: The Project would result in the loss of special-status reptile species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). (Project; Alt. 1 only) B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages. (Alts. 2-5 only) B-16: Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles. G-2: Minimization of Soil Erosion.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-18: The Project would result in the loss of aquatic special-status reptile species.	Project	Class II	X	B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages. B-16: Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles. G-2: Minimization of Soil Erosion.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-19: The Project would result in the loss of burrowing owls.	Project	Class II	X	B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds. (Alts. 1-5 only) B-19: Passively Relocate Individual Burrowing Owls During the Non-Breeding Season.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-20: The Project would result in the loss of foraging habitat or disruption of special-status raptor species.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-21: The Project would result in the loss of nesting special-status and migratory birds.	Project	Class II	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-22: The Project would result in electrocution of special-status bird species.	Project	Class III	X	B-13: Raptor Safety Protection will be required on Tower/Conductor (Lines) on NFS Lands.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
B-23: The Project would result in transmission line collision by special-status bird species.	Project	Class II	X	B-13: Raptor Safety Protection will be required on Tower/Conductor (Lines) on NFS Lands. (Alts. 1-5 only) B-14: Utilize Collision-reducing Techniques. V-17b: Use Magnetic Coils at Entrance Gate. (Alt. 1 only) V-17c: Use Only Low-Level, Directional, Shielded Lighting. (Alt. 1 only) V-17d: Only Perform Maintenance Activities During Daylight Hours. (Alt.1 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-24: The Project would result in loss of special-status bat species.	Project	Class II	X	B-24: Passively Relocate Individual Bats. A-1a: Implement Construction Fugitive Dust Control Plan. (Project only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-25: The Project would result in loss of the American badger.	Project	Class II	X	B-25: Passively Relocate American Badgers During the Non-breeding Season. A-1a: Implement Construction Fugitive Dust Control Plan. (Project only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-26: The Project would result in loss of special-status rodent species.	Project	Class II	X	B-26: Avoid Burrow Areas.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-27: The Project would result in impacts to Management Indicator Species.	Project	Class II	X	A-1a: Implement Construction Fugitive Dust Control Plan. (Project; Alts. 1-4 only) B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. (Project; Alt. 5 only) B-2: Restoration of Coast Live Oak Trees. (Project; Alts. 1-4 only) B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds. B-8a: Conduct Focused Surveys for Arroyo Toad. (Project; Alts. 1-4 only) B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages. (Project; Alts. 1-4 only) B-27: Exclusion Fencing and Wildlife Ramps. (Alt. 1 only) G-2: Minimization of Soil Erosion. (Alts. 2-3 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class IV	X	
B-28: The Project would result in the loss of jurisdictional waters and wetlands.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
B-29: The Project would affect linkages and wildlife movement corridors.	Project	Class III	X	B-27: Exclusion Fencing and Wildlife Ramps. (Alt. 1 only)
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
B-30: The Project would conflict with Los Angeles County's oak tree ordinance.	Project	Class II	X	B-2: Restoration of Coast Live Oak Trees.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-31: The Project would conflict with the Angeles National Forest Management Plan policies for construction within Riparian Conservation Areas within the ANF.	Project	Class III	X	B-1b: No Activities will occur in Riparian Conservation Areas.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
B-32: The Project would conflict with the City of Santa Clarita General Plan's policies for construction in or adjacent to drainages or waterways.	Project	Class II	X	B-6: Conduct Pre-construction Surveys and Monitoring for Breeding Birds. B-8b: Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages. B-26: Avoid Burrow Areas.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
B-33: The Project would conflict with the proposed West Mojave Habitat Conservation Plan (HCP).	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
Cultural Resources				
C-1: Potential destruction of CA-LAN-3474 would occur as a result of the Project.	Project	Class II	X	Project; Alts. 1, 3-4 only: C-1a: Avoid CA-LAN-3474. OR C-1b: Evaluate the NRHP Eligibility of CA-LAN-3474 (S106H) and Perform Historical Documentation if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
C-2: Destruction of P19-186857 would occur as a result of the Project.	Project	Class II	X	C-2: Evaluate the NRHP Eligibility of P19-186857 and Perform Historical Documentation if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
C-3: Potential destruction of CA-LAN-3476 would occur as a result of the Project.	Project	Class II	X	Project; Alts. 1, 3-4 only: C-3a: Avoid CA-LAN-3476. OR C-3b: Evaluate the NRHP Eligibility of CA-LAN-3476 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
C-4: Potential destruction of CA-LAN-3480 would occur as a result of the Project.	Project	Class II	X	Project; Alts. 1-3 only: C-4a: Avoid CA-LAN-3480. OR C-4b: Evaluate the NRHP Eligibility of CA-LAN-3480 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	No Impact	X	
	Alt. 5	No Impact	X	
C-5: Grading of Forest Service roads during Project construction would affect the roads.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	No Impact	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
C-6: Potential destruction of CA-LAN-3475 would occur as a result of the Project.	Project	Class II	X	Project; Alts. 1, 3-4 only: C-6a: Avoid CA-LAN-3475. OR C-6b: Evaluate the NRHP Eligibility of CA-LAN-3475 and Perform Historical Documentation if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
C-7: Potential destruction of portions of CA-LAN-3478 would occur as a result of the Project.	Project	Class II	X	Project; Alts. 1-4 only: C-7a: Avoid CA-LAN-3478. OR C-7b: Evaluate the NRHP Eligibility of CA-LAN-3478 and Perform Historical Documentation and/or Archaeological Data Recovery if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
C-8: The integrity of CA-LAN-1334/H and the Cochem Ranch site could be degraded by the Project.	Project	Class II		Project; Alts. 1-4 only: C-8a: Avoid CA-LAN-1334/H. OR C-8b: Evaluate the NRHP eligibility of CA-LAN-1334 and Cochem Ranch and Perform Historical Documentation and/or Archaeological Data Recovery if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	No Impact		
C-9: The ability to recover potentially important archaeological information from CA-LAN-3132 would be impaired by the Project.	Project	Class II		Project; Alts. 1-3 only: C-9a: Avoid CA-LAN-3132. OR C-9b: Evaluate the NRHP Eligibility of CA-LAN-3132 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
C-10: Potential destruction of CA-LAN-3479 would occur as a result of the Project.	Project	Class II		Project; Alts. 1-4 only: C-10a: Avoid CA-LAN-3479. OR C-10b: Evaluate the NRHP Eligibility of CA-LAN-3479 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	No Impact		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
C-11: The ability to recover potentially important cultural information from CA-LAN-3131 would be impaired by the Project.	Project	Class II		Project; Alts. 1-3 only: C-11a: Avoid CA-LAN-3131. OR C-11b: Evaluate the NRHP Eligibility of CA-LAN-3131 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
C-12: Modification of CA-LAN-3477 would occur as a result of the Project.	Project	Class II		Project; Alts. 1-4 only: C-12: Evaluate the NRHP Eligibility of CA-LAN-3477 and Perform Historical Documentation if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	No Impact		
C-13: Potential destruction of P19-120077 would occur as a result of the Project.	Project	Class II		C-13a: Avoid P19-120077. OR C-13b: Evaluate the NRHP Eligibility of P19-120077 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
C-14: Undiscovered cultural resources would be disturbed through Project activities.	Project	Class II	X	C-14: Conduct Construction Monitoring in the Project Area, Evaluate the Eligibility of Previously Undiscovered Resources, and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
C-15: Potential destruction of CA-LAN-3542 and CA-LAN-3537 would occur as a result the Project.	Project	No Impact		Alt. 5 only: C-15a: Avoid CA-LAN-3542 and CA-LAN-3537. OR C-15b: Evaluate the NRHP Eligibility of CA-LAN-3542 and CA-LAN-3537 and Perform Historical Documentation if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
C-16: Destruction of CA-LAN-3535, CA-LAN-3539, and CA-LAN-3544 would occur as a result of the Project.	Project	No Impact		Alt. 5 only: C-16a: Avoid CA-LAN-3535, CA-LAN-3539, and CA-LAN-3544. OR C-16b: Evaluate the NRHP Eligibility of CA-LAN-3535, CA-LAN-3539, and CA-LAN-3544 and Perform Historical Documentation if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-17: Destruction of portions of CA-LAN-3538 would occur as a result the Project.	Project	No Impact		Alt. 5 only: C-17a: Avoid CA-LAN-3538. OR C-17b: Evaluate the NRHP Eligibility of CA-LAN-3478 and Perform Historical Documentation and/or Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-18: Destruction of part or all of CA-LAN-529 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-18a: Avoid CA-LAN-529. OR C-18b: Evaluate the NRHP Eligibility of CA-LAN-529 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-19: Destruction of part or all of CA-LAN-591 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-19a: Avoid CA-LAN-591. OR C-19b: Evaluate the NRHP Eligibility of CA-LAN-591 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-20: Destruction of part or all of CA-LAN-586 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-20a: Avoid CA-LAN-586. OR C-20b: Evaluate the NRHP Eligibility of CA-LAN-586 if it Cannot be Avoided and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
C-21: Destruction of part or all of CA-LAN-3541 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-21a: Avoid CA-LAN-3541. OR C-21b: Evaluate the NRHP Eligibility of CA-LAN-3541 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-22: Destruction of part or all of CA-LAN-3543 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-22a: Avoid CA-LAN-3543. OR C-22b: Evaluate the NRHP Eligibility of CA-LAN-3543 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
C-23: Destruction of part or all of CA-LAN-3534 would occur as a result of Project activities.	Project	No Impact		Alt. 5 only: C-23a: Avoid CA-LAN-3534. OR C-23b: Evaluate the NRHP Eligibility of CA-LAN-3534 and Perform Archaeological Data Recovery if Eligible.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
Geology, Soils, and Paleontology				
G-1: Excavation and grading during construction activities could cause slope instability.	Project	Class II	X	G-1: Protect Against Slope Instability.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-2: Erosion could be triggered or accelerated by construction or disturbance of landforms.	Project	Class II	X	G-2: Minimization of Soil Erosion.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
G-3: Minor changes in topography due to excavation and grading.	Project	Class III	X	G-2: Minimization of Soil Erosion. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected).
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
G-4: Transmission line damaged by surface fault ruptures at crossings of active faults.	Project	Class II	X	G-4: Minimize Project Structures Within Active Fault Zone.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-5: Project structures could be damaged by landslides, liquefaction, settlement, lateral spreading, and/or surface cracking resulting from seismic events.	Project	Class II	X	G-5: Geotechnical Investigations for Liquefaction and Slope Instability.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-6: Project structures could be damaged by strong groundshaking.	Project	Class II	X	G-6: Reduce Effects of Groundshaking.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-7: Buried tower and substation foundations could be damaged by corrosive soils.	Project	Class II	X	G-7: Geotechnical Studies for Corrosive Soils.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
G-8: Tower and substation foundations could be damaged by expansive or collapsible soils.	Project	Class II	X	G-8: Geotechnical Studies for Problematic Soils.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-9: Transmission line structures could be damaged by landslides, earth flows, or debris slides.	Project	Class II	X	G-9: Geotechnical Surveys for Landslides.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-10: Excavation for transmission line structures could damage unique or significant fossils.	Project	Class II	X	G-10: Protection of Paleontological Resources.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
G-11: Construction activities would interfere with access to known mineral resources.	Project	No Impact	X	G-11: Coordination with Quarry Operations. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	No Impact	X	
	Alt. 4	No Impact	X	
	Alt. 5	No Impact	X	
G-12: Installation of underground infrastructure would permanently alter topography.	Project	No Impact	X	G-2: Minimization of Soil Erosion. (Alt. 1 only) B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	No Impact	X	
	Alt. 4	No Impact	X	
	Alt. 5	No Impact	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
G-13: Underground transmission line damaged by surface fault ruptures at crossing of active San Gabriel Fault.	Project	No Impact		G-13: Minimize Damage to Underground Transmission Lines. (Alt. 1 only)
	Alt. 1	Class II		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
G-13: Grading of new access roads would permanently alter topography.	Project	No Impact		G-2: Minimization of Soil Erosion. (Alt. 2 only) B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). (Alt. 2 only)
	Alt. 1	No Impact		
	Alt. 2	Class II		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
Public Health and Safety				
PH-1: Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities.	Project	Class II	X	PH-1a: Environmental Training and Monitoring Program. PH-1b: Hazardous Substance Control and Emergency Response Plan. PH-1c: Proper Disposal of Construction Waste. PH-1d: Emergency Spill Supplies and Equipment.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
PH-2: Project results in encountering known preexisting soil or groundwater contamination.	Project	Class II	X	PH-2: Conduct Phase II Investigation.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
PH-3: Project results in encountering unknown preexisting soil or groundwater contamination.	Project	Class II	X	PH-3: Observe Exposed Soil.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
PH-4: Release of hazardous materials during operation at substations and transmission line maintenance.	Project	Class II	X	PH-4a: Documentation of Compliance. PH-4b: Emergency Spill Supplies and Equipment.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 5	Class II	X	
PH-5: Project would cause radio or television interference.	Project	Class II	X	PH-5a: Limit the Conductor Surface Electric Gradient. PH-5b: Document and Resolve Electronic Interference Complaints.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
PH-6: The Project would create induced currents and shock hazards in joint-use corridors.	Project	Class II	X	PH-6: Determine Proper Grounding Measures.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
PH-7: Project operation would cause synchronous pacemakers to revert to an asynchronous mode.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
Forest Management Activities				
F-1: Construction activities from the Project could start a wildfire.	Project	Class II	X	F-1: Develop a Fire Plan with the Forest Service. P-1: Expansion of the Southern California Edison Fire Prevention and Response Plan (FPRP). (Alt. 5 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
F-2: Operation and maintenance activities from the Project could start a wildfire.	Project	Class II	X	F-2: Develop an Operation and Maintenance Plan with the Forest Service. R-4: Permanent Closure and Re-vegetation of Construction Roads. (Project; Alts. 1-4 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
F-3: Construction activities could adversely impact aggressive fire suppression activities.	Project	Class II	X	F-3: Helicopters Shall Cease Activities in the Event of Fire. T-1a: Prepare Traffic Control Plans. (Project; Alts. 1-4 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
F-4: Project operation could adversely affect aggressive aerial fire suppression activities.	Project	Class I	X	None recommended.
	Alt. 1	Class I	X	
	Alt. 2	Class II	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class I	X	
F-5: The Project would limit the ability of fixed-wing aircraft to fill up water tanks for aerial water drops.	Project	Class II	X	F-5: Site and Design Towers to Match Existing Height. (Project; Alts. 1 - 4 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class IV	X	
F-6: The Project would adversely affect ground firefighting activities and would create a hazard for firefighting personnel.	Project	Class II	X	F-6: De-energize the Transmission Line.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
F-7: Project operation could adversely affect fire prevention activities.	Project	Class II	X	F-7: SCE Shall Enter into a Fuelbreak Agreement with the ANF. (Project; Alts. 1, 3-4 only)
	Alt. 1	No Impact	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	No Impact	X	
F-8: Project operation would adversely affect firefighter safety.	Project	Class II	X	F-6: De-energize the Transmission Line. (Project; Alts. 1 - 4 only) F-8a: SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak. (Project; Alts. 1 - 4 only) F-8b: Provide Transmission Line Safety Training to ANF Staff. (Project; Alts. 1 - 4 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class IV	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
F-9: Project operation would adversely affect community safety.	Project	Class I	X	F-6: De-energize the Transmission Line. (Alt. 2 only) F-8b: Provide Transmission Line Safety Training to ANF Staff. (Alt. 2 only)
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class I	X	
Hydrology and Water Quality				
H-1: Soil erosion and sedimentation caused by construction activities would degrade water quality.	Project	Class II	X	H-1a: Implementation of Erosion and Sediment Best Management Practices. H-1b: Maximum Road Gradient. H-1c: Road Surface Treatment. H-1d: Timing of Construction Activities. H-1e: Dispersion of Subsurface Drainage from Slope Construction Areas. H-1f: Control of Side-cast Material, Right-of-Way Debris and Roadway Debris. G-1: Protect Against Slope Instability. G-2: Minimization of Soil Erosion.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
H-2: Degradation of surface water or groundwater quality would occur from the accidental release of potentially harmful materials during construction activities.	Project	Class II	X	PH-1a: Environmental Training and Monitoring Program. PH-1b: Hazardous Substance Control and Emergency Response Plan. PH-1c: Proper Disposal of Construction Waste. PH-1d: Emergency Spill Supplies and Equipment. H-4: Develop and Implement a Groundwater Remediation Plan. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
H-3: Degradation of surface water or groundwater quality would result from the accidental release of potentially harmful materials during operational activities.	Project	Class III	X	PH-1a: Environmental Training and Monitoring Program. (Alt. 1 only) PH-1b: Hazardous Substance Control and Emergency Response Plan. (Alt. 1 only) PH-1c: Proper Disposal of Construction Waste. (Alt. 1 only) PH-1d: Emergency Spill Supplies and Equipment. (Alt. 1 only) H-4: Develop and Implement a Groundwater Remediation Plan. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
H-4: Disturbance of existing groundwater resources through project-related excavation activities.	Project	Class II	X	H-4: Develop and Implement a Groundwater Remediation Plan.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
H-5: Increased runoff from the creation of new impervious areas.	Project	Class III	X	H-5: Permeability of Ground Cover. (Alts. 1-2 only)
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
H-6: Runoff introduced as a result of permanent Project features would cause the overloading of a local stormwater drainage system.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
H-7: Flood hazards created through the placement of permanent aboveground structures in a flood hazard area, a floodplain, or a watercourse.	Project	Class II	X	H-7: Aboveground Structures shall be Protected Against Flood and Erosion Damage.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
H-8: Mudflow hazards created through the placement of permanent aboveground structures.	Project	Class II	X	H-1a: Implementation of Erosion and Sediment Best Management Practices.
	Alt. 1	Class II	X	H-1b: Maximum Road Gradient.
	Alt. 2	Class II	X	H-1c: Road Surface Treatment.
	Alt. 3	Class II	X	H-1d: Timing of Construction Activities.
	Alt. 4	Class II	X	H-1e: Dispersion of Subsurface Drainage from Slope Construction Areas.
	Alt. 5	Class II	X	H-1f: Control of Side-cast Material, Right-of-Way Debris and Roadway Debris.
Land Use and Public Recreation				
L-1: Construction of the Project would temporarily disrupt existing residential and commercial land uses.	Project	Class II		N-1a: Nighttime Construction Noise Restriction in Santa Clarita.
	Alt. 1	Class II		N-1b: Provide Advanced Notification of Construction.
	Alt. 2	Class II		N-1c: Provide Shields for Stationary Construction Equipment.
	Alt. 3	Class II		T-1a: Prepare Traffic Control Plans. (Alt. 1 only)
	Alt. 4	Class II		T-9: Provide Continuous Access to Properties. (Alt. 1 only)
	Alt. 5	Class II		
L-2: Construction of the Project would temporarily disrupt access to Bouquet Canyon Stone Quarry	Project	Class III	X	T-1a: Prepare Traffic Control Plans. (Alt. 1 only)
	Alt. 1	Class II	X	T-9: Provide continuous access to properties. (Alt. 1 only)
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
L-3: Operation of the Project would cause long-term disruption of existing residential land uses.	Project	Class I		None recommended.
	Alt. 1	Class I		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	Class I		
	Alt. 5	Class I		
L-4: Operation of the Project would cause long-term disruption of existing commercial land uses.	Project	Class I		None recommended.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
L-5: Construction of the Project would temporarily encroach upon Farmland.	Project	Class II		L-5: Establish Agreement and Coordinate Construction Activities with Agricultural Landowners.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
L-6: The right-of-way expansion and larger 500-kV towers would permanently preclude use of Farmland.	Project	Class II		L-6: Locate Transmission Towers and Pulling/Splicing Stations to Avoid Agricultural Operations.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
R-1: Construction of the Project would preclude the use of established recreation areas in the Angeles National Forest and in the City of Santa Clarita.	Project	Class II	X	R-1a: Coordinate Construction Schedule with the Authorized Officer for the Recreation Area. R-1b: Identify Alternative Recreation Areas. R-1c: Temporary Closure of Off-Highway Vehicle Routes During Construction. R-1d: Temporary Upgrades to Forest System Roads B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected).
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
R-2: The siting of Project components would contribute to the long-term loss or degradation of recreational trails.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class I		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
R-3: The Project would contribute to the long-term loss or degradation of OHV routes.	Project	Class II	X	R-3: Avoid Upgrades to Forest System Road Maintenance Levels. (Project; Alts. 2-5 only)
	Alt. 1	Class I	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
R-4: The Project would facilitate unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational facilities in the Angeles National Forest.	Project	Class II	X	R-4: Permanent Closure and Re-vegetation of Construction Roads.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
Noise				
N-1: Construction noise levels would violate local standards.	Project	Class I		N-1a: Nighttime Construction Noise Restriction in Santa Clarita. N-1b: Provide Advanced Notification of Construction. N-1c: Provide Shields for Stationary Construction Equipment.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	Class I		
	Alt. 5	Class I		
N-2: Operational corona noise levels at Veluzat Motion Picture Ranch would violate Los Angeles County standards.	Project	Class I		None recommended.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
N-3: Operational corona noise levels at residences would violate Los Angeles County standards.	Project	Class III		None recommended.
	Alt. 1	Class III		
	Alt. 2	Class III		
	Alt. 3	Class III		
	Alt. 4	Class III		
	Alt. 5	Class III		
N-4: Noise level increases related to routine inspection and maintenance would violate local standards.	Project	Class I		None recommended.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	Class I		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 5	Class I		
N-5: The Project would result in a permanent increase in ambient noise levels at Veluzat Motion Picture Ranch.	Project	Class I		None recommended.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
N-6: The Project would result in a permanent noise level increase related to routine inspection and maintenance.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
N-7: Temporary increases in ambient noise levels would severely disrupt operations at Veluzat Motion Picture Ranch.	Project	Class I		Project; Alts. 1-4 only: N-1a: Nighttime Construction Noise Restriction in Santa Clarita. N-1b: Provide Advanced Notification of Construction. N-1c: Provide Shields for Stationary Construction Equipment. N-7: Coordination of Construction Activities with the Veluzat Motion Picture Ranch.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	Class II		
	Alt. 5	No Impact		
N-8: Temporary increases in ambient noise levels would disturb recreational users within Angeles National Forest.	Project	Class I	X	N-1b: Provide Advanced Notification of Construction. R-1a: Coordinate Construction Schedule with the Authorized Officer for the Recreation Area.
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class I	X	
Public Services				
P-1: Construction activities would temporarily increase demands on fire and police protection.	Project	Class II	X	P-1: Expansion of the Southern California Edison Fire Prevention and Response Plan (FPRP). F-1: Develop a Fire Plan with the Forest Service.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
P-2: Operational activities could increase demands on fire and police protection.	Project	Class II	X	F-2: Develop an Operation and Maintenance Plan with the Forest Service.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
Socioeconomics				
S-1: Construction activities could cause a temporary decrease in revenues for Veluzat Motion Picture Ranch.	Project	Class II		S-1: Coordination with Veluzat Motion Picture Ranch for the Scheduling of Construction Activities. (Project, Alts. 1-3 only)
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
S-2: Operational activities could cause a decrease in revenues for Veluzat Motion Picture Ranch.	Project	Class I		None recommended.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
S-3: Construction activities could cause a decrease in revenues for agricultural land owners.	Project	Class II		L-5: Establish Agreement and Coordinate Construction Activities with Agricultural Landowners.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
S-4: Operational activities would substantially benefit public agency revenue.	Project	Class IV	X	None recommended.
	Alt. 1	Class IV	X	
	Alt. 2	Class IV	X	
	Alt. 3	Class IV	X	
	Alt. 4	Class IV	X	
	Alt. 5	Class IV	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
S-5: Operational activities would substantially decrease property values along the Project alignment.	Project	Class III		None recommended.
	Alt. 1	Class III		
	Alt. 2	Class III		
	Alt. 3	Class III		
	Alt. 4	Class III		
	Alt. 5	Class III		
S-6: Construction activities could cause a temporary decrease in revenues for Bouquet Canyon Stone Company.	Project	No Impact	X	T-9: Provide Continuous Access to Properties. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	No Impact	X	
	Alt. 4	No Impact	X	
	Alt. 5	No Impact	X	
S-7: Construction activities would require the removal of existing housing.	Project	No Impact		None recommended.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
Traffic and Transportation				
T-1: Closure of roads to through traffic or reduction of travel lanes would result in substantial congestion.	Project	Class II	X	T-1a: Prepare Traffic Control Plans. T-1b: Restrict Lane Closures.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
T-2: Construction traffic would result in congestion on area roadways.	Project	Class II	X	T-2: Prepare Construction Transportation Plan.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
T-3: Construction activities could temporarily interfere with emergency response.	Project	Class II	X	T-1a: Prepare Traffic Control Plans.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
T-4: Construction activities could temporarily disrupt transit and school bus routes.	Project	Class II		T-4: Avoid Disruption of Bus Service.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
T-5: Construction activities could temporarily interfere with the use of pedestrian/bicycle paths.	Project	Class II		T-5: Provide Temporary Pedestrian and Bicycle Access.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
T-6: Conflict with plans for a City of Santa Clarita connector road.	Project	Class II		T-6: Coordinate with Caltrans and the City of Santa Clarita to Avoid Conflicts with the Santa Clarita Cross-Valley Connector.
	Alt. 1	Class II		
	Alt. 2	Class II		
	Alt. 3	Class II		
	Alt. 4	Class II		
	Alt. 5	Class II		
T-7: Construction vehicles and equipment could damage road ROWs.	Project	Class II	X	T-7: Repair Damaged Road ROWs.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
T-8: Project transmission structures could present an aviation hazard.	Project	Class III	X	None recommended.
	Alt. 1	No Impact	X	
	Alt. 2	Class III	X	
	Alt. 3	No Impact	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
T-9: Underground construction activities would temporarily restrict access to properties.	Project	No Impact	X	T-9: Provide Continuous Access to Properties. (Alt. 1 only)
	Alt. 1	Class II	X	
	Alt. 2	No Impact	X	
	Alt. 3	No Impact	X	
	Alt. 4	No Impact	X	
	Alt. 5	No Impact	X	
T-10: Construction activities could be inconsistent with transportation plans.	Project	No Impact		T-10: Coordinate with Caltrans and the Los Angeles County MTA to Avoid Conflicts with Planned Improvements to SR-14. (Alt. 5 only)
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class II		
Utilities and Service Systems				
U-1: Construction and operational utility and service system demands would change the ability of water utilities and service system facilities to accommodate local demands.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
U-2: Construction and operational utility and service system demands would change the ability of solid waste utilities and service system facilities to accommodate local demands.	Project	Class III	X	U-2: Recycle Construction Waste.
	Alt. 1	Class II	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
U-3: Construction and operational utility and service system demands would change the ability of stormwater and wastewater utilities and service system facilities to accommodate local demands.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
U-4: Construction and operational water supply demands would require new or expanded water entitlements or resources.	Project	Class III	X	None recommended.
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
U-5: The amount of waste material recycled during construction activities would not adhere to State standards.	Project	Class II	X	U-2: Recycle Construction Waste.
	Alt. 1	Class II	X	
	Alt. 2	Class II	X	
	Alt. 3	Class II	X	
	Alt. 4	Class II	X	
	Alt. 5	Class II	X	
Visual Resources				
V-1: Project infrastructure would alter the visual quality of landscape views as seen from 110th Street at Johnson Road (KOP 1).	Project	Class II		V-1a: Use Tubular Steel Poles.
	Alt. 1	Class II		V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads.
	Alt. 2	Class II		V-1c: Dispose of Cleared Vegetation.
	Alt. 3	Class II		V-1d: Dispose of Excavated Materials.
	Alt. 4	Class II		V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 5	Class II		V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. (Alt. 5 only) V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. (Alt. 5 only)
V-2: Project infrastructure would alter the visual quality of landscape views as seen from Avenue K (KOP 2).	Project	Class II		Project, Alts. 1-4 only: V-1a: Use Tubular Steel Poles.
	Alt. 1	Class II		V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads.
	Alt. 2	Class II		V-1c: Dispose of Cleared Vegetation.
	Alt. 3	Class II		V-1d: Dispose of Excavated Materials.
	Alt. 4	Class II		V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 5	Class IV		Alt. 5 only: V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads.

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
V-3: Project infrastructure would alter the visual quality of landscape views as seen from Lake Elizabeth Road (KOP 3).	Project	Class I		Project, Alts. 1-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. Outside ANF only (Project, Alts. 1-4 only): V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. Outside ANF only (Alt. 5 only): V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. Inside ANF only: V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Inside ANF only (Project, Alts. 1-4 only): V-4a: Construct, Operate, and Maintain with Helicopters. Inside ANF only (Alt. 5 only): V-3d: Remove Existing Infrastructure with Helicopters.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	Class I		
	Alt. 5	Class IV		
V-4: Project infrastructure would alter the scenic integrity and character of landscapes seen from the Pacific Crest National Scenic Trail (KOP 4).	Project	Class I	X	V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site.
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 5	Class IV	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Project, Alts. 1-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters. Alt. 5 only: V-3d: Remove Existing Infrastructure with Helicopters.
V-5: Project infrastructure would alter the scenic integrity and character of landscapes seen from San Francisquito Canyon Road (KOP 5).	Project	Class I	X	Project; Alts. 2-5 only: V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Project; Alts. 2-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters. Alt. 5 only: V-3d: Remove Existing Infrastructure with Helicopters.
	Alt. 1	Class I	X	
	Alt. 2	Class IV	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class IV	X	
V-6: Project infrastructure would alter the scenic integrity and character of landscapes seen from Bouquet Reservoir (KOP6).	Project	Class I	X	V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site.
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 5	Class IV	X	B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Project, Alts. 1-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters. Alt. 5 only: V-3d: Remove Existing Infrastructure with Helicopters.
V-7: Project infrastructure would alter the scenic integrity and character of landscapes seen from Bouquet Canyon Road (KOP 7).	Project	Class I	X	V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. Project; Alts. 2-5 only: V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Project, Alts. 2-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters. Alt. 5 only: V-3d: Remove Existing Infrastructure with Helicopters.
	Alt. 1	Class IV	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class IV	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
V-8: Project infrastructure would alter the scenic integrity and character of landscapes seen from Vasquez Canyon Road (KOP 8).	Project	Class I	X	Project; Alts. 2-5 only: V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Project; Alts. 2-4 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters. Alt. 5 only: V-3d: Remove Existing Infrastructure with Helicopters.
	Alt. 1	Class I	X	
	Alt. 2	Class IV	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class IV	X	
V-9: The Project would alter the visual quality of landscape views as seen from Veluzat Motion Picture Ranch (KOP 9).	Project	Class I		V-9: Relocate Transmission Line Off-Site. (Project, Alts. 1-3 only)
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class I		
	Alt. 4	No Impact		
	Alt. 5	No Impact		
V-10: Project infrastructure would alter the visual quality of landscape views as seen from North High Ridge Drive (KOP 10).	Project	Class I		V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class II		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-11: Project infrastructure would alter the visual quality of landscape views as seen from Mountain View Park (KOP 11).	Project	Class I		V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	Class I		
	Alt. 2	Class I		
	Alt. 3	Class II		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-12: Project infrastructure would alter the visual quality of landscape views as seen from Rio Norte Junior High School (KOP 12).	Project	Class I		V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads.
	Alt. 1	Class I		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 2	Class I (overhead) No Impact (undergrd.)		V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-12: Establish Evergreen Vegetative Screen. (Alt. 1 only)
	Alt. 3	Class II		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-13: Project infrastructure would alter the visual quality of landscape views as seen from North Park Elementary School and Chesebrough Park (KOP 13).	Project	Class I		Project; Alts. 2-5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	Class I		
	Alt. 3	Class II		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-14: Project infrastructure would alter the visual quality of landscape views as seen from Copper Hill Road (KOP 14).	Project	Class I		Project; Alts. 2-5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	Class I		
	Alt. 3	Class II		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-15: The temporary visibility of construction activities and equipment involved with the Project would alter the visual quality of landscape views as seen from various vantage points throughout the Project area.	Project	Class I	X	V-15a: Storage and Site Cleanup (Miles 0.0 to 25.6). V-15b: Recontouring and Restoration (Miles 0 to 25.6). V-15c: Revegetation (Miles 0 to 25.6).
	Alt. 1	Class I	X	
	Alt. 2	Class I	X	
	Alt. 3	Class I	X	
	Alt. 4	Class I	X	
	Alt. 5	Class I	X	
V-16: The Project would conflict with adopted visual quality policies and objectives contained in Forest and local plans.	Project	Class III	X	V-16a: Forest Plan Amendment (Miles 5.7 to 18.6). V-16b: Local Agency Approvals (Miles 0.0 to 25.6). V-16c: Transmission Line Siting Study (Miles 0.0 to 25.6).
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	
V-17: The Project would create a new source of substantial glare that would alter daytime views in the area.	Project	Class III	X	V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-17a: Use Only Non-Specular and Non-Reflective Conductors and Insulators. V-17b: Use Magnetic Coils at Entrance Gate. (Alt. 1 only) V-17c: Use Only Low-Level, Directional, Shielded Lighting. (Alt. 1 only) V-17d: Only Perform Maintenance Activities During Daylight Hours. (Alt. 1 only)
	Alt. 1	Class III	X	
	Alt. 2	Class III	X	
	Alt. 3	Class III	X	
	Alt. 4	Class III	X	
	Alt. 5	Class III	X	

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
V-18: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Copper Hill Road above Agajanian Drive (KOP 4-1).	Project	No Impact		Alts. 4-5 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. On NFS lands only (Alts. 4-5 only): V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site. V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Off NFS lands only (Alts. 4-5 only): V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	Class I		
	Alt. 5	Class I		
V-19: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Avenue K (KOP 5-1).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-19: Construct New Access and Spur Roads with Least Visual Disturbance.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-20: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lake Elizabeth Road (KOP 5-2).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-19: Construct New Access and Spur Roads with Least Visual Disturbance.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-21: Project infrastructure would substantially degrade the visual quality of landscape views as seen from KOP 5-3 (Leona Valley Road).	Project	No Impact		On NFS lands only (Alt. 5 only): V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. V-4b: Dispose of Cleared Vegetation Off Site.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
	Alt. 5	Class I		V-4c: Dispose of Excavated Materials Off Site. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Off NFS lands only (Alt. 5 only): V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-19: Construct New Access and Spur Roads with Least Visual Disturbance.
V-22: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lost Valley Ranch Road (KOP 5-4).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-19: Construct New Access and Spur Roads with Least Visual Disturbance.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-23: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Upper Bouquet Canyon Road (KOP 5-5).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-19: Construct New Access and Spur Roads with Least Visual Disturbance.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-24: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Sierra Highway at Anthony Road (KOP 5-6).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-25: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Vasquez Rocks County Park (KOP 5-7).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4a: Construct, Operate, and Maintain with Helicopters.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-26: Project infrastructure would substantially degrade the visual quality of	Project	No Impact		Alt. 5 only:

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
landscape views as seen from Escondido Canyon Road at Antelope Valley Freeway (KOP 5-8).	Alt. 1	No Impact		V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4b: Dispose of Cleared Vegetation Off-Site. V-4c: Dispose of Excavated Materials Off-Site. On NFS lands only (Alt. 5 only): V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Off NFS lands only (Alt. 5 only): V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-4a: Construct, Operate, and Maintain with Helicopters.
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-27: Project infrastructure would substantially degrade the visual quality of landscape views as seen from the Pacific Crest National Scenic Trail (KOP 5-9).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures. V-4b: Dispose of Cleared Vegetation Off-Site. V-4c: Dispose of Excavated Materials Off-Site. On NFS lands only (Alt. 5 only): V-3a: Remove Existing Foundations, Rehabilitate, and Re-Vegetate Tower Sites. V-3b: Remove, Rehabilitate, and Re-Vegetate Crane Pads. V-3c: Avoid Locating New Roads in Bedrock. B-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities (chamise chaparral, coastal sage scrub, and riparian, if affected). B-1b: No Activities will occur in Riparian Conservation Areas. R-4: Permanent Closure and Re-vegetation of Construction Roads. Off NFS lands only (Alt. 5 only): V-4a: Construct, Operate, and Maintain with Helicopters.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		

Table ES-3. Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives

Impact	Route	Impact*	NFS	Mitigation Measures
V-28: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Antelope Valley Freeway Eastbound (KOP 5-10).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-29: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Antelope Valley Freeway Westbound at Agua Dulce Interchange (KOP 5-11).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-30: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Lily of the Valley Mobile Home Village (KOP 5-12).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		
V-31: Project infrastructure would substantially degrade the visual quality of landscape views as seen from Shadow Valley Lane (KOP 5-13).	Project	No Impact		Alt. 5 only: V-1a: Use Tubular Steel Poles. V-1b: Construct, Operate, and Maintain with Existing Access/Spur Roads. V-1c: Dispose of Cleared Vegetation. V-1d: Dispose of Excavated Materials. V-1e: Treat Surfaces with Appropriate Colors, Finishes, and Textures.
	Alt. 1	No Impact		
	Alt. 2	No Impact		
	Alt. 3	No Impact		
	Alt. 4	No Impact		
	Alt. 5	Class I		

*Class I = Significant and unavoidable impact; Class II = Significant but mitigated to a less-than-significant level; Class III = Less-than-significant impact; Class IV = Beneficial impact.

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Visual Resources						
Number of Crossings of the Pacific Crest National Scenic Trail on NFS Lands	1	1	1	1	1	0
Maximum Number of Levels Below Adopted Forest Plan Scenic Integrity Objectives without Mitigation	4	4	4	4	4	4
Maximum Number of Levels Below Adopted Forest Plan Scenic Integrity Objectives with Mitigation	3	3 (Overhead Segments) 4 (Transition Stations)	2	3	3	1 (0.5 miles through ANF) 3 (1.0 miles through newly acquired NFS lands in Soledad Canyon)
Forest Plan Amendment to change Scenic Integrity Objectives (SIOs) (Within entire 1,000-foot wide utility corridor)	• High SIO changes to Very Low SIO from Mile 5.7 to 15.9 and 16.0 to 17.6 • Moderate SIO changes to Very Low SIO from 15.9 to 16.0	• High SIO changes to Very Low SIO from Mile 5.7 to 11.0, 15.0 to 15.9, and 16.0 to 17.6 • High SIO changes to Unacceptably Low SIO from Mile 11.0 to 15.0 • Moderate SIO changes to Very Low SIO from Mile 15.9 to 16.0	• High SIO changes to Low SIO from Mile 5.7 to 5.8, 6.15 to 6.4, 7.7 to 8.1, 8.6 to 10.4, 10.7 to 12.7, and 12.8 to 13.5 • Moderate SIO changes to Low SIO from Mile 5.8 to 6.15 • High SIO changes to Very Low SIO from Mile 6.4 to 7.7 and 13.5 to 14.0	• High SIO changes to Very Low SIO from Mile 5.7 to 15.9 and 16.0 to 17.6 • Moderate SIO changes to Very Low SIO from Mile 15.9 to 16.0	• High SIO changes to Very Low SIO from Mile 5.7 to 15.9, 16.0 to 17.6, and 18.3 to 18.8 • Moderate SIO changes to Very Low SIO from Mile 17.6 to 18.0	• High SIO changes to Low SIO from Mile 5.6 to 5.85 • High SIO changes to Very Low SIO from Mile 17.1 to 17.4 and 17.7 to 18.4
Forest Plan Amendment to modifying the Forest Standard related to the Pacific Crest Trail (S1) Specifically for this Project	Yes	Yes	Yes	Yes	Yes	No
ROW Viewed Along Some Ridgelines in "Skylined" Condition?	Yes	Yes	No	Yes	Yes	Yes
Forest Management Activities						
Transmission Line Could Adversely Affect Saugus Del Sur Ridge Fuelbreak?	Yes	Yes	No	Yes	Yes	No
Transmission Line Would Adversely Affect Aerial Firefighting Forces on Del Sur Ridge (an important fire suppression strategic site)	Yes	Yes	No	Yes	Yes	No
Transmission Line Would Adversely Affect Ground Firefighting Forces on Del Sur Ridge (an important fire suppression strategic site)	Yes	Yes	No	Yes	Yes	No

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Construction, Operation and Maintenance Activities Could Cause/Increase Likelihood of Wildfires?	Yes	Yes	Yes	Yes	Yes	Yes
Helicopter Tower Construction (w/o Mitigation Measure V-4a) Could Affect Aerial Fire Suppression if Fire Staff is Unable to Contact the Construction Helicopter Crews?	Yes (Helicopter Construction of 1 Tower)	Yes (Helicopter Construction of 1 Tower)	Yes (Helicopter Construction of 37 Towers)	Yes (Helicopter Construction of 1 Tower)	Yes (Helicopter Construction of 1 Tower)	No (No Helicopter Construction)
Bouquet Reservoir Proximity and Tower Height Could Curtail Aerial Fire Fighting with Super Scoopers?	Yes	Yes	No	Yes	Yes	No
Biological Resources						
Potential for Avian Collisions with the Transmission Line	High (Due to Ridge Top Location)	Moderate (Due to Underground Segment)	Moderate to High (Due to Mid-Slope Location)	High (Due to Ridge Top Location)	High (Due to Ridge Top Location)	Moderate (Alternative 5 May Have Reduced Potential for Condor Presence and Maintain Removal of the Antelope-Pole Switch 74 Transmission Line on NFS lands; Removal May Be Beneficial to Condors)
Potential Impacts to Management Indicator Species (MIS)	Moderate (Due to Ridge Top Location)	High (Due to Extensive Underground Trenching and Construction Schedule)	Moderate to High (Due to Mid-Slope Location)	Moderate (Due to Ridge Top Location)	Moderate (Due to Ridge Top Location)	Low (Due to Limited Portion of ROW on NFS lands. MIS Disturbances Would be Primarily Limited to Removal of the Antelope-Pole Switch 74 Transmission Line on NFS lands; Removal May Be Beneficial to Condors)
Potential for Invasion by Exotic Plants	Moderate	High (Due to Increased Ground Disturbances for Trenching/Underground Placement)	Moderate (Mid-Slope Segment is Located In Relatively Undisturbed Chaparral Habitat)	Moderate	Moderate	Moderate (Majority of the ROW Contains Populations of Exotic Plants. Removal of the Antelope-Pole Switch 74 Transmission Line on NFS lands May Result in the Spread of Invasive Plants)

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Potential to Minimize Impacts to Sensitive Species on NFS Lands	No	No	No	No	No	Yes Only small portion of project located on NFS lands. As such, potential impacts to sensitive species on the ANF is reduced.
Land Use and Public Recreation						
Consistent with 2005 ANF Land Management Plan?	Consistent through a Plan Amendment	Consistent through a Plan Amendment	Consistent through a Plan Amendment	Consistent through a Plan Amendment	Consistent through a Plan Amendment	Consistent through a Plan Amendment
Total Distance of New ROW (Miles)	0	0	12.2	0	1.3	1.5
Number of Private Holdings Traversed	6	6	7	6	1	0
Number of Crossings of the Pacific Crest National Scenic Trail	1	1	1	1	1	0
Temporary Closure of, or Damage to, Trails During Construction?	Yes	Yes	Yes	Yes	Yes	No
Temporary Disturbances to Designated Campgrounds, Day Use Areas and Recreational Facilities During Construction?	Yes	Yes	Yes	Yes	Yes	No
Traffic and Circulation						
Number of Overhead Road Crossings (By Mile)	7 Total: Leona Divide Fire Rd: 6.4 Spunky Edison Fire Rd: 7.4 Spunky Cyn Rd (Maintained by LA Co.): 8.6 Bouquet Cyn Rsrvr Rd: 9.2 Del Sur Ridge Rd: 9.8, 12.4, 19.1	7 Total: Leona Divide Fire Rd: 6.4 Spunky Edison Fire Rd: 7.4 Spunky Cyn Rd (Maintained by LA Co.): 8.6 Bouquet Cyn Rsrvr Rd: 9.2 Del Sur Ridge Rd: 9.8, 12.4, 19.1	8 Total: Leona Divide Fire Rd: 6.5 Spunky Cyn Rd: 8.5 Bouquet Cyn Rd: 8.6, 10.8 Artesian Springs Rd: 8.8, 9.5 Del Sur Ridge Rd: 16.5, 19.1	7 Total: Leona Divide Fire Rd: 6.4 Spunky Edison Fire Rd: 7.4 Spunky Cyn Rd (Maintained by LA Co.): 8.6 Bouquet Cyn Rsrvr Rd: 9.2 Del Sur Ridge Rd: 9.8, 12.4, 19.1	7 Total: Leona Divide Fire Rd: 6.4 Spunky Edison Fire Rd: 7.4 Spunky Cyn Rd (Maintained by LA Co.): 8.6 Bouquet Cyn Rsrvr Rd: 9.2 Del Sur Ridge Rd: 9.8, 12.4, 17.7	None
Number of ANF Roads Parallel to ROW	2 Total: Del Sur Ridge Rd (Along Miles 11.2 – 11.7, 14.3 – 15.0, 16.0 – 16.5) Pettinger Cyn Rd (Along Miles 18.7 – 19.4)	2 Total: Del Sur Ridge Rd (Along Miles 11.2 – 11.7, 14.3 – 15.0, 16.0 – 16.5) Pettinger Cyn Rd (Along Miles 18.7 – 19.4)	1 Total: Quarry Rd (Along Miles 12.7 – 12.9)	2 Total: Del Sur Ridge Rd (Along Miles 11.2 – 11.7, 14.3 – 15.0, 16.0 – 16.5) Pettinger Cyn Road (Along Miles 18.7 – 19.4)	2 Total: Del Sur Ridge Rd (Along Miles 11.2 – 11.7, 14.3 – 15.0, 16.0 – 16.5) Pettinger Cyn Rd (Along Miles 18.7 – 19.4)	None
Miles of New or Improved Access and Spur Roads	10.75	13.38	10.71	10.75	11.14	1.27
Potential to Temporarily Restrict or Impeded Emergency Access?	Yes (Traffic Control Plan Required)	Yes (Traffic Control Plan Required)	Yes (Traffic Control Plan Required)	Yes (Traffic Control Plan Required)	Yes (Traffic Control Plan Required)	No

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Restricts Access to Bouquet Canyon Stone Company?	No	Yes	No	No	No	No
Hydrology and Water Quality						
Number of Overhead Crossings of Major Water Bodies on NFS Lands (By Mile)	6 Total: Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7 Petting Canyon: 18.8-19.5	6 Total: Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7 Petting Canyon: 18.8-19.5	5 Total: Spunky Canyon: 6.9 Bouquet Canyon: 8.6, 10.7 Haskell Canyon: 17.6-17.7 Petting Canyon: 18.8-19.5	6 Total: Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7 Petting Canyon: 18.8-19.5	4 Total: Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6	1 Total: Escondido Canyon: 17.5
Approximate Number of Crossings of Minor Water Bodies on NFS Lands (Mountain Stream or Valley Wash)	11	11 (3 Underground)	22	11	16	None
Miles of Underground Construction Which Could Cause Increased Soil Erosion, Sedimentation, Runoff and Water Quality Degradation	0	4	0	0	0	0
Potential for hillside construction to cause increased soil erosion, sedimentation, and runoff	Moderate	High	High	Moderate	Moderate	Moderate
Geology, Soils and Paleontology						
Geologic Formation / Excavation Characteristics (By Mile)	Quartz Diorite / Difficult (5.7 – 9.4) Clearwater Fault / Not Applicable (9.4) San Francisquito / Moderate to Difficult (9.4 – 10.5) San Francisquito Fault / Not Applicable (10.5) Pelona Schist / Difficult (10.5 – 12.3) Landslide / Difficult (12.3 – 12.8) Pelona Schist / Difficult (12.8 – 13.1) Landslide / Difficult (13.1 – 13.8) Pelona Schist / Difficult (13.8 – 17.5) Mint Canyon / Moderate (17.5 – 19.3)	Quartz Diorite / Difficult (5.7 – 9.4) Clearwater Fault / Not Applicable (9.4) San Francisquito / Moderate to Difficult (9.4 – 10.5) San Francisquito Fault / Not Applicable (10.5) Pelona Schist / Difficult (10.5 – 19.3)	Quartz Diorite-Gneiss Complex / Difficult (5.7 – 8.4) San Francisquito Fault / Not Applicable (8.4) Alluvium / Easy (8.4 – 8.7) Pelona Schist / Difficult (8.7 – 19.3)	Quartz Diorite / Difficult (5.7 – 9.4) Clearwater Fault / Not Applicable (9.4) San Francisquito / Moderate to Difficult (9.4 – 10.5) San Francisquito Fault /Not Applicable (10.5) Pelona Schist / Difficult (10.5 – 12.3) Landslide / Difficult (12.3 – 12.8) Pelona Schist / Difficult (12.8 – 13.1) Landslide / Difficult (13.1 – 13.8) Pelona Schist / Difficult (13.8 – 17.5) Mint Canyon / Moderate (17.5 – 19.3)	Quartz Diorite / Difficult (5.7 – 9.4) Clearwater Fault / Not Applicable (9.4) San Francisquito / Moderate to Difficult (9.4 – 10.5) San Francisquito Fault /Not Applicable (10.5) Pelona Schist / Difficult (10.5 – 12.3) Landslide / Difficult (12.3 – 12.8) Pelona Schist / Difficult (12.8 – 13.1) Landslide / Difficult (13.1 – 13.8) Pelona Schist / Difficult (13.8 – 17.5) Mint Canyon Formation / Moderate (17.5 – 19.3)	Vasquez Formation / Difficult (17.9 – 19.4)

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Soil Hazard Rating for Erosion of Roads and Trails	Severe	Severe	Severe	Severe	Severe	Severe
Potential to Disturb Significant Fossil-Bearing Geologic Formations	High to Moderate Sensitivity –Mint Canyon Formation (Miles 17.5 – 19.3)	High to Moderate Sensitivity –Mint Canyon Formation (Miles 17.5 – 19.3)	High to Moderate Sensitivity –Mint Canyon Formation (Miles 17.5 – 19.3)	High to Moderate Sensitivity –Mint Canyon Formation (Miles 17.5 – 19.3)	High to Moderate Sensitivity –Mint Canyon Formation (Miles 17.5 – 19.3)	Zero Sensitivity – Vasquez Formation (Miles 17.9 – 19.4)
Substantial Permanent Alteration of Topography?	No	Yes (Mitigation Required)	No	No	No	No
Interferes with Access to Mineral Resources?	No	Yes (Mitigation Required)	No	No	No	No
Air Quality						
Maximum Daily Construction Emissions Exceed Regional Emission Thresholds? (Construction of Entire ROW – Not Limited to NFS Lands)	South Coast Air Basin – Yes: NOx, PM10 Mojave Desert Air Basin – Yes: NOx, PM10	South Coast Air Basin – Yes: NOx, VOC, PM10 Mojave Desert Air Basin – Yes: NOx, PM10	South Coast Air Basin – Yes: NOx, VOC, CO, PM10 Mojave Desert Air Basin – Yes: NOx, CO, PM10	South Coast Air Basin – Yes: NOx, PM10 Mojave Desert Air Basin – Yes: NOx, PM10	South Coast Air Basin – Yes: NOx, PM10 Mojave Desert Air Basin – Yes: NOx, PM10	South Coast Air Basin – Yes: NOx, PM10 Mojave Desert Air Basin – Yes: NOx, PM10
Construction Emissions Exceed Localized Emission Thresholds? (Construction of Entire ROW – Not Limited to National Forest System Lands)	No	Yes (PM10)	No	No	No	No
Construction Emissions Exceed General Conformity Thresholds? (Construction of Entire ROW – Not Limited to National Forest System Lands)	South Coast Air Basin – No Mojave Desert Air Basin – No	South Coast Air Basin – Yes (NOx) Mojave Desert Air Basin – No	South Coast Air Basin – No Mojave Desert Air Basin – No	South Coast Air Basin – No Mojave Desert Air Basin – No	South Coast Air Basin – No Mojave Desert Air Basin – No	South Coast Air Basin – No Mojave Desert Air Basin – No
Conformance With Applicable Angeles National Forest Air Quality Strategies?	Yes (Mitigation Required)	Yes (Mitigation Required)	Yes (Mitigation Required)	Yes (Mitigation Required)	Yes (Mitigation Required)	Yes (Mitigation Required)
Cultural Resources						
National Register of Historic Places (NRHP) Evaluation Required If Sensitive Resources Cannot Be Avoided?	Yes – 5 Sites: CA-LAN-3474 P19-186857 CA-LAN-3476 CA-LAN-3480 CA-LAN-3475	Yes – 5 Sites CA-LAN-3474 P19-186857 CA-LAN-3476 CA-LAN-3480 CA-LAN-3475	Yes – 2 Sites: P19-186857 CA-LAN-3480	Yes – 5 Sites CA-LAN-3474 P19-186857 CA-LAN-3476 CA-LAN-3480 CA-LAN-3475	Yes – 4 Sites CA-LAN-3474 P19-186857 CA-LAN-3476 CA-LAN-3475	No
California Register of Historical Resources (CRHR) Evaluation Required If Sensitive Resources Cannot Be Avoided?	Yes - Resources Determined Eligible for the NRHP Are Also Eligible for the CRHR	Yes - Resources Determined Eligible for the NRHP Are Also Eligible for the CRHR	Yes - Resources Determined Eligible for the NRHP Are Also Eligible for the CRHR	Yes - Resources Determined Eligible for the NRHP Are Also Eligible for the CRHR	Yes - Resources Determined Eligible for the NRHP Are Also Eligible for the CRHR	No

Table ES-4. Comparison of Key Environmental Issues by Alternative - National Forest System Lands

Resource/Issue Area	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Number of Previously Recorded Forest Service Sites Within the Area of Potential Affect (APE)† † Of the Previously Recorded Forest Service Sites Noted, Only Site 5015300243 Would Result in a Class II Impact. Affects on Remaining Sites Would be Class III or No Impact.	6 Sites: 5015300155 (Historic)* 5015300226 (Historic) 5015300275 (Historic) 5015300274 (Historic) 5015300273 (Historic) 5015300243 (Historic) *Intersects APE outside NFS lands	6 Sites: 5015300155 (Historic)* 5015300226 (Historic) 5015300275 (Historic) 5015300274 (Historic) 5015300273 (Historic) 5015300243 (Historic) *Intersects APE outside NFS lands	6 Sites: 5015300243 (Historic) 5015300226 (Historic) 5015300275 (Historic) 5015300273 (Historic) 5015300272 (Historic) 5015300284 (Historic)	6 Sites: 5015300155 (Historic)* 5015300226 (Historic) 5015300275 (Historic) 5015300274 (Historic) 5015300273 (Historic) 5015300243 (Historic) *Intersects APE outside NFS lands	6 Sites: 5015300155 (Historic)* 5015300226 (Historic) 5015300275 (Historic) 5015300274 (Historic) 5015300273 (Historic) 5015300243 (Historic) *Intersects APE outside NFS lands	None
Public Health and Safety						
Activities with Increased Potential for the Accidental Spill/Release of Hazardous Substances and/or the Excavation of Contaminated Soils	Tower Construction (58 Towers)	Tower Construction (40 Towers) Underground Construction (4 Miles) Maintenance of Underground Facilities	Tower Construction (66 Towers with 56 at mid-slope) (Additional Potential Along Slope of Saugus Del Sur Ridge)	Tower Construction (58 Towers)	Tower Construction (58 Towers)	Tower Construction (7 Towers)
Noise						
Non-Residential Sensitive Receptors in ROW Vicinity	Pacific Crest National Scenic Trail Spunky Campground Streamside Campground Zuni Campground Los Cantiles Day Use Area Texas Canyon Fire Station Santa Clara/Mojave Rivers Ranger Station Back Country Discovery Tr.	Pacific Crest National Scenic Trail Spunky Campground Streamside Campground Zuni Campground Los Cantiles Day Use Area Texas Canyon Fire Station Santa Clara/Mojave Rivers Ranger Station Back Country Discovery Tr.	Pacific Crest National Scenic Trail Spunky Campground Streamside Campground Zuni Campground Los Cantiles Day Use Area Texas Canyon Fire Station Santa Clara/Mojave Rivers Ranger Station Back Country Discovery Tr.	Pacific Crest National Scenic Trail Spunky Campground Streamside Campground Zuni Campground Los Cantiles Day Use Area Texas Canyon Fire Station Santa Clara/Mojave Rivers Ranger Station Back Country Discovery Tr.	Pacific Crest National Scenic Trail Spunky Campground Streamside Campground Zuni Campground Los Cantiles Day Use Area Texas Canyon Fire Station Santa Clara/Mojave Rivers Ranger Station Back Country Discovery Tr.	None
Residential Sensitive Receptors Immediately Within or Adjacent to ROW	None	None	None	None	None	None
Helicopter Construction (without Mitigation Measure V-4a) and Maintenance Activities Would Generate Significant Noise-Related Impacts?	Yes (Helicopter Construction and Maintenance of 1 Tower)	Yes (Helicopter Construction and Maintenance of 1 Tower)	Yes (Helicopter Construction and Maintenance of 37 Towers)	Yes (Helicopter Construction and Maintenance of 1 Tower)	Yes (Helicopter Construction and Maintenance of 1 Tower)	No (No Helicopter Construction or Maintenance Activities)
Increase in Corona Noise Levels?	Yes	Yes	Yes	Yes	Yes	Yes
Substantial Increase in Permanent Ambient Noise Levels?	No	No	No	No	No	No
Substantial Increase in Temporary Ambient Noise Levels During Construction?	Yes	Yes	Yes	Yes	Yes	Yes

Table ES-6. Summary of Significant Cumulative Impacts for the Proposed Project and Alternatives[2]

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Air Quality						
A-1: Construction emissions exceed SCAQMD and AVAQMD regional emission thresholds.	Class I	Class I	Class I	Class I	Class I	Class I
A-2: Construction emissions expose sensitive receptors to substantial pollutant concentrations.	Class II	Class I	Class II	Class II	Class II	Class II
Biological Resources						
B-1: Temporary or permanent loss of native vegetation communities.	Class I	Class I	Class I	Class I	Class I	Class I
B-2: Temporary damage or permanent loss of oak trees.	Class I	Class I	Class I	Class I	Class I	Class I
B-3: Loss of foraging habitat for wildlife.	Class I	Class I	Class I	Class I	Class I	Class I
B-4: Introduction of non-native and invasive plant species.	Class I	Class I	Class I	Class I	Class I	Class I
B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.	Class I	Class I	Class I	Class I	Class I	Class I
B-6: Construction activities during the breeding season would cause a loss of nesting birds.	Class I	Class I	Class I	Class I	Class I	Class I
B-7: Loss of listed plant species.	Class I	Class I	Class I	Class I	Class I	Class I
B-8: Loss of arroyo toads.	Class I	Class I	Class I	Class I	Class I	Class I
B-9: Loss of California red-legged frogs.	Class I	Class I	Class I	Class I	Class I	Class I
B-10: Loss of foraging habitat for listed raptor species.	Class I	Class I	Class I	Class I	Class I	Class I
B-11: Loss of listed riparian bird species.	Class I	Class I	Class I	Class I	Class I	Class I
B-12: Loss of coastal California gnatcatchers.	Class I	Class I	Class I	Class I	Class I	Class I
B-13: Electrocution of listed bird species.	Class I	Class I	Class I	Class I	Class I	Class I
B-14: Transmission line collisions by listed bird species.	Class I	Class I	Class I	Class I	Class I	Class I
B-15: Loss of special-status plant species.	Class I	Class I	Class I	Class I	Class I	Class I
B-16: Loss of special-status amphibian species.	Class I	Class I	Class I	Class I	Class I	Class I
B-17: Loss of special-status reptile species.	Class I	Class I	Class I	Class I	Class I	Class I
B-18: Loss of aquatic special-status reptile species.	Class I	Class I	Class I	Class I	Class I	Class I
B-19: Loss of burrowing owls.	Class I	Class I	Class I	Class I	Class I	Class I
B-20: Loss of foraging habitat or disruption of special-status raptor species.	Class I	Class I	Class I	Class I	Class I	Class I
B-21: Loss of nesting special-status and migratory birds.	Class I	Class I	Class I	Class I	Class I	Class I
B-22: Electrocution of special-status bird species.	Class I	Class I	Class I	Class I	Class I	Class I
B-23: Transmission line collision by special-status bird species.	Class I	Class I	Class I	Class I	Class I	Class I
B-24: Loss of special-status bat species.	Class I	Class I	Class I	Class I	Class I	Class I
B-25: Loss of the American badger.	Class I	Class I	Class I	Class I	Class I	Class I
B-26: Loss of special-status rodent species.	Class I	Class I	Class I	Class I	Class I	Class I
B-27: Impacts to Management Indicator Species.	Class I	Class I	Class I	Class I	Class I	-
Cultural Resources						
C-1: Destruction of historical resource CA-LAN-3474.	Class II	Class II	Class II	Class II	Class II	-
C-2: Destruction of historical resource P19-186857.	Class II	Class II	Class II	Class II	Class II	Class II
C-3: Destruction of cultural resource site CA-LAN-3476.	Class II	Class II	Class II	Class II	Class II	-
C-4: Destruction of cultural resource site CA-LAN-3480.	Class II	Class II	Class II	Class II	Class II	-
C-6: Destruction on cultural resource site CA-LAN-3475.	Class II	Class II	-	Class II	Class II	-
C-7: Destruction of portions of cultural resource site CA-LAN-3478.	Class II	Class II	Class II	Class II	Class II	-
C-8: Degradation of cultural resource site CA-LAN-1334/H and the Cochem Ranch site.	Class II	Class II	Class II	Class II	Class II	-
C-9: Impede recovery of archaeological information from historical resource site CA-LAN-3132.	Class II	Class II	Class II	Class II	-	-
C-10: Destruction of cultural resource site CA-LAN-3479.	Class II	Class II	Class II	Class II	Class II	-

[2] Only those cumulative impacts classified as Class I (Significant and Unavoidable) or Class II (Less than Significant with Mitigation) are reflected in Table ES-6. Cumulative impacts classified as Class III (Less than Significant with No Mitigation) or Class IV (Beneficial) are discussed in Section C. All Project mitigation measures discussed in Section C would be applied to reduce the Project's contribution to the cumulative scenario. No additional mitigation measures are recommended.

Table ES-6. Summary of Significant Cumulative Impacts for the Proposed Project and Alternatives[2]

C-11: Impede recovery of cultural information from resource site CA-LAN-3131.	Class II	Class II	Class II	Class II	-	-
C-12: Modification of historical resource site CA-LAN-3477	Class II	Class II	Class II	Class II	Class II	-
C-13: Destruction of historical resource P19-120077.	Class II	Class II	Class II	Class II	Class II	Class II
C-14: Disturbance of undiscovered cultural resources.	Class II	Class II	Class II	Class II	Class II	Class II
C-15: Destruction of part of historical resource sites CA-LAN-3542 and -3537.	-	-	-	-	-	Class II
C-16: Destruction of historical resource sites CA-LAN-3535, -3539, and -3544.	-	-	-	-	-	Class II
C-17: Destruction of portions of historical resource site CA-LAN-3538.	-	-	-	-	-	Class II
C-18: Destruction of part or all of historical resource site CA-LAN-529.	-	-	-	-	-	Class II
C-19: Destruction of part or all of cultural resource site CA-LAN-591.	-	-	-	-	-	Class II
C-20: Destruction of part or all of cultural resource site CA-LAN-586.	-	-	-	-	-	Class II
C-21: Destruction of part or all of cultural resource site CA-LAN-3541.	-	-	-	-	-	Class II
C-22: Destruction of part or all of historical resource site CA-LAN-3543.	-	-	-	-	-	Class II
C-23: Destruction of part or all of historical resource site CA-LAN-3534.	-	-	-	-	-	Class II
Public Health and Safety						
PH-5: Radio or television interference.	Class I	Class I	Class I	Class I	Class I	Class I
Forest Management Activities						
F-1: Construction activities could start a wildfire.	Class I	Class I	Class I	Class I	Class I	Class I
F-2: Operation and maintenance activities could start a wildfire.	Class I	Class I	Class I	Class I	Class I	Class I
F-3: Construction activities could adversely affect aggressive fire suppression activities.	Class II	-	-	Class II	Class II	-
F-4: Operation could adversely affect aggressive aerial fire suppression activities.	Class I	Class I	-	Class I	Class I	Class I
F-7: Operation could adversely affect fire prevention activities.	Class I	Class I	-	Class I	Class I	-
F-8: Operation could adversely affect firefighter safety.	Class I	Class I	Class I	Class I	Class I	Class I
F-9: Operation could adversely affect community safety.	Class I	Class I	Class I	Class I	Class I	Class I
Hydrology and Water Quality						
H-1: Soil erosion and sedimentation caused by construction activities degrade water quality.	Class I	Class I	Class I	Class I	Class I	Class I
H-2: Degradation of surface water or groundwater quality from hazardous materials used during construction.	Class I	Class I	Class I	Class I	Class I	Class I
H-3: Degradation of surface water or groundwater quality from hazardous materials used during operation.	Class I	Class I	Class I	Class I	Class I	Class I
H-4: Disturbance of existing groundwater resources through excavation.	Class I	Class I	Class I	Class I	Class I	Class I
H-5: Increased runoff from the creation of new impervious areas.	Class I	Class I	Class I	Class I	Class I	Class I
H-7: Creation of flood hazards through the placement of permanent aboveground structures in a flood hazard area, a floodplain, or a watercourse.	Class I	Class I	Class I	Class I	Class I	Class I
H-8: Creation of mudflow hazards through the placement of permanent aboveground structures.	Class I	Class I	Class I	Class I	Class I	Class I
Land Use and Public Recreation						
L-1: Temporary disruption of existing residential and commercial land uses.	Class I	Class I	Class I	Class I	Class I	Class I
L-2: Temporary disruption of access to Bouquet Canyon Stone Quarry	-	Class II	-	-	-	-
L-3: Long-term disruption of existing residential land uses.	Class I	Class I	Class I	Class I	Class I	Class I
L-4: Long-term disruption of existing commercial land uses.	Class I	Class I	Class I	Class I	-	-

Table ES-6. Summary of Significant Cumulative Impacts for the Proposed Project and Alternatives[2]						
L-5: Temporary encroachment upon Farmland.	Class I	Class I	Class I	Class I	Class I	Class I
L-6: Permanent disruption of Farmland use.	Class I	Class I	Class I	Class I	Class I	Class I
R-1: Construction would preclude the use of established recreation areas in the Angeles National Forest and in the City of Santa Clarita.	Class II	Class II	Class II	Class II	Class II	Class II
R-2: Contribution to the long-term loss or degradation of recreational trails.	Class I	Class I	Class I	Class I	Class I	Class I
R-3: Contribution to the long-term loss or degradation of OHV routes.	Class II	Class I	Class II	Class II	Class II	Class II
R-4: Facilitation of unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational facilities.	Class II	Class II	Class II	Class II	Class II	-Class II
Noise						
N-1: Construction noise levels would violate local standards.	Class I	Class I	Class I	Class I	Class I	Class I
N-2: Corona noise levels at Veluzat Motion Picture Ranch would violate Los Angeles County standards.	Class I	Class I	Class I	Class I	-	-
N-3: Corona noise levels at residences would violate Los Angeles County standards.	Class I	Class I	Class I	Class I	Class I	Class I
N-5: Permanent increase in ambient noise levels at Veluzat Motion Picture Ranch.	Class I	Class I	Class I	Class I	-	-
N-7: Temporary increases in ambient noise levels would disrupt operations at Veluzat Motion Picture Ranch.	Class I	Class I	Class I	Class I	Class II	-
Public Services						
P-1: Construction activities would temporarily increase demands on fire and police protection.	Class I	Class I	Class I	Class I	Class I	Class I
P-2: Operational activities could increase demands on fire and police protection.	Class I	Class I	Class I	Class I	Class I	Class I
Traffic and Transportation						
T-1: Closure of roads or travel lanes cause substantial congestion.	Class I	Class I	Class I	Class I	Class I	Class I
T-2: Construction traffic causes congestion on area roadways.	Class II	Class II	Class II	Class II	Class II	Class II
T-3: Construction activities interfere with emergency response.	Class I	Class I	Class I	Class I	Class I	Class I
Utilities and Service Systems						
U-1: Alteration in the ability of water utilities and service system facilities to accommodate local demands.	Class I	Class I	Class I	Class I	Class I	Class I
U-2: Alteration in the ability of solid waste systems to accommodate demands.	Class I	Class I	Class I	Class I	Class I	Class I
U-3: Alteration in the ability of stormwater and wastewater systems to accommodate local demands.	Class I	Class I	Class I	Class I	Class I	Class I
U-4: Water supply demands would require new or expanded water entitlements or resources.	Class I	Class I	Class I	Class I	Class I	Class I
Visual Resources						
V-1: Degradation of visual character seen from 110th Street at Johnson Road (KOP 1).	Class I	Class I	Class I	Class I	Class II	Class II
V-2: Degradation of visual character seen from Avenue K (KOP 2).	Class I	Class I	Class I	Class I	Class II	-
V-3: Degradation of visual character seen from Lake Elizabeth Road (KOP 3).	Class I	Class I	Class I	Class I	Class I	-
V-4: Degradation of visual character seen from the Pacific Crest National Scenic Trail (KOP 4).	Class I	Class I	Class I	Class I	Class I	-
V-5: Degradation of visual character seen from San Francisquito Canyon Road (KOP 5).	Class I	Class I	-	Class I	Class I	-
V-6: Degradation of visual character seen from Bouquet Dam (KOP 6).	Class I	Class I	Class I	Class I	Class I	-
V-7: Degradation of visual character seen from Bouquet Canyon Road (KOP 7).	Class I	Class I	-	Class I	Class I	-
V-8: Degradation of visual character seen from Vasquez Canyon Road (KOP 8).	Class I	Class I	-	Class I	Class I	-

Table ES-6. Summary of Significant Cumulative Impacts for the Proposed Project and Alternatives[2]						
V-9: Degradation of visual character seen from Veluzat Motion Picture Ranch (KOP 9).	Class I	Class I	Class I	Class I	-	-
V-10: Degradation of visual character seen from North High Ridge Drive (KOP 10).	Class I	Class I	Class I	-	Class I	Class I
V-11: Degradation of visual character seen from Mountain View Park (KOP 11).	Class I	Class I	Class I	-	Class I	Class I
V-12: Degradation of visual character seen from Rio Norte Junior High School (KOP 12).	Class I	Class I	Class I	-	Class I	Class I
V-13: Degradation of visual character seen from North Park Elementary School and Chesebrough Park (KOP 13).	Class I	-	Class I	-	Class I	Class I
V-14: Degradation of visual character seen from Copper Hill Road (KOP 14).	Class I	-	Class I	-	Class I	Class I
V-15: Visibility of construction activities and equipment would degrade existing visual character.	Class I	Class I	Class I	Class I	Class I	Class I
V-16: Infrastructure would conflict with adopted visual quality policies.	Class I	Class I	Class I	Class I	Class I	Class I
V-18: Degradation of landscape views from Copper Hill Road above Agajanian Drive (KOP 4-1).	-	-	-	-	Class I	Class I
V-19: Degradation of landscape views from Avenue K (KOP 5-1).	-	-	-	-	-	Class I
V-20: Degradation of landscape views from Lake Elizabeth Road (KOP 5-2).	-	-	-	-	-	Class I
V-21: Degradation of landscape views from Leona Valley Road (KOP 5-3).	-	-	-	-	-	Class I
V-22: Degradation of landscape views from Lost Valley Ranch Road (KOP 5-4).	-	-	-	-	-	Class I
V-23: Degradation of landscape views from Upper Bouquet Canyon Road (KOP 5-5).	-	-	-	-	-	Class I
V-24: Degradation of landscape views from Sierra Highway at Anthony Road (KOP 5-6).	-	-	-	-	-	Class I
V-25: Degradation of landscape views from Vasquez County Rocks Park (KOP 5-7).	-	-	-	-	-	Class I
V-26: Degradation of landscape views from Escondido Canyon Road at Antelope Valley Freeway (KOP 5-8).	-	-	-	-	-	Class I
V-27: Degradation of landscape views from the Pacific Crest National Scenic Trail (KOP 5-9).	-	-	-	-	-	Class I
V-28: Degradation of landscape views from Antelope Valley Freeway Eastbound (KOP 5-10).	-	-	-	-	-	Class I
V-29: Degradation of landscape views from Antelope Valley Fwy West at Agua Dulce Interchange (KOP 5-11).	-	-	-	-	-	Class I
V-30: Degradation of landscape views from Lily of the Valley Mobile Home Village (KOP 5-12).	-	-	-	-	-	Class I
V-31: Degradation of landscape views from Shadow Valley Lane (KOP 5-13).	-	-	-	-	-	Class I

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
Air Quality							
A-1: Construction emissions exceed SCAQMD and AVAQMD regional emission thresholds.	Class I	Class I	Class I	Class I	Class I	Class I	Construction activities associated with the proposed Project and alternatives would result in air emissions that exceed the SCAQMD and AVAQMD regional emission thresholds within the ANF. For cumulative assessment purposes the potential existence of nearby concurrent cumulative projects would only add to these significant emission totals (Class I).
A-2: Construction emissions expose sensitive receptors to substantial pollutant concentrations.	Class II	Class I	Class II	Class II	Class II	Class II	Construction activities associated with the Project would expose sensitive receptors in the populated areas along the construction route. Therefore, it can be assumed that the potential for cumulative impacts to sensitive receptors is the same as the project impacts to sensitive receptors, so the proposed Project and Alternatives 2 through 5 would have less than significant cumulative impacts to sensitive receptors after mitigation (Class II), and Alternative 1 would have significance impacts to sensitive receptors after mitigation (Class I).
Biological Resources							
B-1: Temporary or permanent loss of native vegetation communities.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts to native vegetation from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), these impacts would be considered cumulatively less than significant.
B-2: Temporary damage or permanent loss of oak trees.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts to oak trees from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-2a (Restoration of Coast Live Oak Trees) these impacts would be considered cumulatively less than significant.
B-3: Loss of foraging habitat for wildlife.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts to vegetation from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) these impacts would be considered cumulatively less than significant.
B-4: Introduction of non-native and invasive plant species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts to vegetation from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-4a (Implement Weed Control Measures) these impacts would be considered cumulatively less than significant.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts wildlife species and their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measure B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) these impacts would be considered cumulatively less than significant.
B-6: Construction activities during the breeding season would cause a loss of nesting birds.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with other regional loss of habitat and with similar impacts of other projects, and therefore would be considered cumulatively significant and unavoidable (Class I). The relative absence of impacts to nesting birds and their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measure B-6a (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) these impacts would be considered cumulatively less than significant.
B-7: Loss of listed plant species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that contain listed plant species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to listed plant species from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-7a (Conduct Surveys for Listed and Sensitive Plant Species) these impacts would be considered cumulatively less than significant.
B-10: Loss of foraging habitat for listed raptor species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide foraging habitat for listed raptor species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to listed raptors and their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measures B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-6a (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) these impacts would be considered cumulatively less than significant.
B-13: Electrocution of listed bird species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to listed birds from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-13a (Raptor safety protection will be required on tower/conductor (lines) of NFS lands) these impacts would be considered cumulatively less than significant.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
B-14: Transmission line collisions by listed bird species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to listed birds from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-14a (Utilize Collision-reducing Techniques) these impacts would be considered cumulatively less than significant.
B-15: Loss of special-status plant species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that contain special-status plants, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to special-status plants from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measure B-7a (Conduct Surveys for Listed and Sensitive Plant Species) these impacts would be considered cumulatively less than significant.
B-16: Loss of special-status amphibian species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for amphibians, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to special-status amphibian species or their habitat from Alternative would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measures B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-16a (Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles) these impacts would be considered cumulatively less than significant.
B-17: Loss of special-status reptile species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for reptile species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to reptile species or their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measures B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-16a (Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles) these impacts would still be considered cumulatively less than significant.
B-18: Loss of aquatic special-status reptile species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for aquatic reptile species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to aquatic special-status reptile species or their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measures B-8b (Implement Seasonal Restrictions for Road Maintenance, Culvert Replacement, and Grading of New Access and Spur Roads That Occur Within Drainages), and B-16a (Conduct Pre-construction Surveys for Sensitive Amphibians and Reptiles) these impacts would be considered cumulatively less than significant.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
B-19: Loss of burrowing owls.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for burrowing owls, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to burrowing owls or their habitat from Alternative 5 would result in cumulatively significant impacts Class II) to NFS lands. Although with implementation of Mitigation Measure B-19a (Passively Relocate Individual Burrowing Owls During the Non-Breeding Season) these impacts would be considered cumulatively less than significant.
B-20: Loss of foraging habitat or disruption of special-status raptor species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide foraging habitat for raptor species, and are therefore cumulatively significant and unavoidable (Class I). Mitigation Measures B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-6a (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) would be implemented.
B-21: Loss of nesting special-status and migratory birds.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for nesting and migratory birds, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to nesting and migratory birds from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measures B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), and B-6a (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) these impacts would be considered cumulatively less than significant.
B-22: Electrocution of special-status bird species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, in which special-status birds are likely to be electrocuted, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to special-status birds from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measure B-14a (Utilize Collision-reducing Techniques) these impacts would be considered cumulatively less than significant.
B-23: Transmission line collision by special-status bird species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, in which special-status birds are likely to collide with transmission lines, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to special-status birds from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measure B-14a (Utilize Collision-reducing Techniques) these impacts would be considered cumulatively less than significant.
B-24: Loss of special-status bat species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for special-status bat species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to sensitive bat species or their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands, although with implementation of Mitigation Measure B-24a (Passively Relocate Individual Bats) these impacts would be considered cumulatively less than significant.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
B-25: Loss of the American badger.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project and alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for the American badger, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to the American badger or their habitat from Alternative 5 would result in cumulatively significant impacts (Class II) to NFS lands. Although with implementation of Mitigation Measures B-25a (Passively Relocate American Badgers During the Non-breeding Season), and A-1a (Implement Construction Fugitive Dust Control Plan) these impacts would be considered cumulatively less than significant.
B-26: Loss of special-status rodent species.	Class I	Class I	Class I	Class I	Class I	Class II	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of other projects, which may be located in areas that provide habitat for special-status rodent species, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to sensitive rodent species or their habitat from Alternative 5 would result in cumulatively significant (Class II) impacts to NFS lands. Although with implementation of Mitigation Measure B-26a (Avoid Burrow Areas) these impacts would considered cumulatively less than significant.
B-27: Impacts to Management Indicator Species.	Class I	Class I	Class I	Class I	Class I	-	The impacts of the proposed Project or alternatives have the potential to combine with similar impacts of cumulative projects, which may be located in areas that provide habitat to MIS, and are therefore cumulatively significant and unavoidable (Class I). The relative absence of impacts to MIS or their habitat from Alternative 5 would not result in cumulatively significant impacts (Class III) to NFS lands.
Public Health and Safety							
PH-5: Radio or television interference.	Class I	Class I	Class I	Class I	Class I	Class I	If the cumulative projects in the vicinity of the proposed Project or alternatives were to cause radio or television interference, particularly to sensitive receptors such as businesses and schools, the cumulative effect of this impact would be significant and unavoidable. However, given that land use on NFS lands is open space and recreational with minimal other uses, this impact would be less than significant with no mitigation recommended (Class I) on NFS lands.
Forest Management Activities							
F-1: Construction activities could start a wildfire.	Class I	Class I	Class I	Class I	Class I	Class I	With the growing populations in the communities within the area of consideration, increased recreation use in the project area would be likely. The cumulative impact of fire starts in this area by these users, adjacent communities, existing transmission lines and other special uses along with the proposed Project and all of the alternatives would be significant (Class I). No mitigation is recommended.
F-2: Operation and maintenance activities could start a wildfire.	Class I	Class I	Class I	Class I	Class I	Class I	Similar to the Cumulative Impact Analysis of Impact F-1, fire starts from the operation and maintenance of the proposed Project and all the alternatives would combine with increased recreation use by a growing population in adjacent communities to result in a cumulatively significant impact (Class I).

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
F-3: Construction activities could adversely affect aggressive fire suppression activities.	Class II	-	-	Class II	Class II	-	The proposed Project or alternatives, combined with decreases in fire funding and fire staffing could be significant. With decreased fire staffing, the initial attack on wildfires may not be as robust which could result in larger fires. Consequently, Del Sur Ridge would likely play a more important role in strategically placing ground fire suppression forces on the ridge and utilizing the ridgetop in aerial fire suppression tactics. The proposed Project and Alternatives 3 and 4 would be located on this strategically important fire suppression ridgetop and so would have the greatest cumulative affect on aggressive fire suppression activities. The impacts of the proposed Project and Alternatives 3 and 4 would be significant (Class II) and no mitigation can be recommended.
F-4: Operation could adversely affect aggressive aerial fire suppression activities.	Class I	Class I	-	Class I	Class I	Class I	As with construction activities, operation of the proposed Project or alternatives, combined with decreases in fire funding and fire staffing could be significant. With decreased fire staffing, the initial attack on wildfires may not be as robust which could result in larger fires. Consequently, Del Sur Ridge would likely play a more important role in strategically placing ground fire suppression forces on the ridge and utilizing the ridgetop in aerial fire suppression tactics. The proposed Project and Alternatives 3 and 4 would be located on this strategically important fire suppression and prevention ridgetop and so would have the greatest cumulative affect on aggressive fire suppression activities. The impacts of the proposed Project and Alternatives 1, 3, 4, and 5 would be significant (Class I) and unavoidable.
F-7: Operation could adversely affect fire prevention activities.	Class I	Class I	-	Class I	Class I	-	Similar to the discussion of Cumulative Impact Analysis of Impact F-4, due to the location of the proposed Project and Alternatives 3 and 4 along Del Sur Ridge, the impacts of operation of the Project on fire prevention activities could also be significant with decreases in fire funding and fire staffing. With fewer fire staff, Del Sur Ridge would play a larger role in fire prevention activities. Consequently, the impacts of the proposed Project and Alternatives 1, 3, and 4 would be significant (Class I) and unavoidable.
F-8: Operation could adversely affect firefighter safety.	Class I	Class I	Class I	Class I	Class I	Class I	Increased community growth, as described for Impact F-1, and potential decrease in ANF fire staffing would have a significant effect on firefighter safety. This risk to safety would vary depending on where the fire start occurs and weather patterns at the time. Overall, when combining the increased community development and potential decrease in fire staff with the proposed Project and alternatives, impacts would be significant (Class I) with no recommended mitigation.
F-9: Operation could adversely affect community safety.	Class I	Class I	Class I	Class I	Class I	Class I	Increased community growth would increase the safety risk for the communities surrounding ANF. This risk to safety would vary depending on where the fire start occurs and weather patterns at the time. Overall, when combining the increased community development and potential decrease in fire staff with the proposed Project and alternatives, impacts would be significant (Class I) with no recommended mitigation..

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
Hydrology and Water Quality							
H-1: Soil erosion and sedimentation caused by construction activities degrade water quality.	Class I	Class I	Class I	Class I	Class I	Class I	Multiple cumulative projects, such as maintenance of roads, recreational facilities, and fuelbreak areas, have the potential to cause soil erosion and sedimentation on NFS lands. Because fuelbreak reestablishment and maintenance occurs throughout NFS lands for the purpose of wildland fire safety, it is reasonably assumed that these activities would have the potential to affect some of the same waterways as the proposed Project and alternatives. The cumulative effect of water quality degradation through soil erosion and sedimentation on NFS lands would be significant and unavoidable (Class I) for the proposed Project and all alternatives.
H-2: Degradation of surface water or groundwater quality from hazardous materials used during construction.	Class I	Class I	Class I	Class I	Class I	Class I	Past cumulative projects, including the operation of campgrounds, roadways, and utility infrastructure, as well as multiple ongoing and future projects, would require the use of vehicles and/or heavy machinery and potentially hazardous substances for operation and maintenance activities. The accidental release of potentially hazardous substances from these projects along with the proposed Project or its alternatives could result in significant and unavoidable impacts (Class I).
H-3: Degradation of surface water or groundwater quality from hazardous materials used during operation.	Class I	Class I	Class I	Class I	Class I	Class I	Past cumulative projects, including the operation of campgrounds, roadways, and utility infrastructure, as well as multiple ongoing and future projects, would require the use of vehicles and/or heavy machinery and potentially hazardous substances for operation and maintenance activities. The accidental release of potentially hazardous substances from these projects along with the proposed Project or its alternatives could result in significant and unavoidable impacts (Class I).
H-4: Disturbance of existing groundwater resources through excavation.	Class I	Class I	Class I	Class I	Class I	Class I	Some cumulative projects would include activities on NFS lands that could disturb underlying groundwater resources. Because the quality of groundwater in the cumulative effects area is already compromised any action that disturbs local groundwater resources would be significant. These impacts on NFS lands could be significant and unavoidable (Class I) with the cumulative contribution of the proposed Project and all alternatives.
H-5: Increased runoff from the creation of new impervious areas.	Class I	Class I	Class I	Class I	Class I	Class I	Reasonably foreseeable projects on NFS lands that could introduce new impervious areas include the construction or improvement of roadways, trails, campgrounds, and utility facilities. Due to the currently compromised condition of multiple waterways in the cumulative effects area, any amount of increased runoff resulting from new impervious areas that could further degrade surrounding water quality would be significant. These impacts on NFS lands could be significant and unavoidable (Class I) with the cumulative contribution of the proposed Project and all alternatives.
H-7: Creation of flood hazards through the placement of permanent aboveground structures in a flood hazard area, a floodplain, or a watercourse.	Class I	Class I	Class I	Class I	Class I	Class I	It is not expected that projects on NFS lands would involve the placement of infrastructure within an existing watercourse. However, it is reasonably foreseeable that structures would be placed in an existing floodplain or flood hazard areas. These impacts on NFS lands could be significant and unavoidable (Class I) with the cumulative contribution of the proposed Project and all alternatives.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
H-8: Creation of mudflow hazards through the placement of permanent aboveground structures.	Class I	Class I	Class I	Class I	Class I	Class I	It is reasonably foreseeable that future projects on NFS lands could place infrastructure in areas that may experience mudflow events. Such projects include the installation of recreational facilities, such as cabins and campground restrooms, or the installation of utility and telecommunication infrastructure within existing utility corridors. These impacts on NFS lands could be significant and unavoidable (Class I) with the cumulative contribution of the proposed Project and all alternatives.
Land Use and Public Recreation							
R-1: Construction would preclude the use of established recreation areas in the Angeles National Forest and in the City of Santa Clarita.	Class II	Class II	Class II	Class II	Class II	Class II	The proposed Project and alternatives would temporarily preclude some recreation areas in the ANF (e.g., PCT, OHV trails), resulting in significant impacts. No additional projects have been proposed in the vicinity of the proposed Project that would impact recreational facilities. The cumulative effects from temporary preclusion during construction would remain significant but mitigable (Class II). Implementation of Mitigation Measures R-1a (Coordinate Construction Schedule with the Authorized Officer for the Recreation Area), R-1b (Identify Alternative Recreation Areas), R-1c (Temporary Closure of Off-Highway Vehicle Routes During Construction), R-1d (Temporary Upgrades to Forest System Roads), and B-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) would reduce impacts to a less than significant level for the proposed Project and alternatives.
R-2: Contribution to the long-term loss or degradation of recreational trails.	Class I	Class I	Class I	Class I	Class I	Class I	The siting of the proposed Project and alternatives would not create long-term impacts to recreational facilities within the ANF. Alternative 5 would significantly impact recreational facilities in Ritter Ranch. However, previous development has occurred across NFS lands (e.g., utility corridors, communication sites, mining sites), which has significantly degraded recreational resources within the ANF. As such, impacts to recreational resources resulting from the operation of the proposed Project or alternatives in conjunction with past projects would be significant (Class I).
R-3: Contribution to the long-term loss or degradation of OHV routes.	Class II	Class I	Class II	Class II	Class II	Class II	The proposed Project and alternatives would improve existing access and spur roads. Any upgrades of existing OHV routes to a Maintenance Level 3 would permanently preclude OHV use along this road. Mitigation Measure R-3 (Avoid Upgrades to Forest System Road Maintenance Levels) would avoid permanent preclusion of OHV use for the proposed Project and Alternatives 2-5 (Class II). Alternative 1 would require the construction of an all-weather access road along Del Sur Ridge, which would permanently preclude OHV use along this route. Impacts to OHV recreationists from Alternative 1 would be significant and unavoidable (Class I).
R-4: Facilitation of unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational facilities in the Angeles National Forest.	Class II	Class II	Class II	Class II	Class II	Class II	The proposed Project and alternatives would require the construction and/or improvement of roads on NFS lands, which would facilitate unmanaged recreational uses and significantly contribute to the long-term loss or degradation of resources. Mitigation Measure R-3 (Permanent Closure and Re-vegetation of Construction Roads) has been identified to reduce the impacts of the proposed Project or alternatives. No other projects have been identified that would contribute to the long-term loss or degradation of recreational facilities within the ANF. Implementation of Mitigation Measure R-3 would reduce cumulative impacts to less than significant (Class II).

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
Noise							
N-1: Construction noise levels would violate local standards.	Class I	Class I	Class I	Class I	Class I	Class I	Construction noise levels for the proposed Project and its alternatives would violate the County of Los Angeles noise ordinances as a result of mobile construction equipment. While there are no future projects identified within the ANF that would cumulatively add to ambient noise levels in the ANF, the overall cumulative effect would be considered significant (Class I).
Public Services							
P-1: Construction activities would temporarily increase demands on fire and police protection.	Class I	Class I	Class I	Class I	Class I	Class I	Because the USDA Forest Service provides fire suppression service exclusively for NFS lands, only development projects within or expansion of NFS lands would contribute to a cumulative impact to service levels of the USDA Forest Service providers' capacity. Because of the sensitive nature of wildland resources within NFS lands and the fire history of the ANF, demands on fire protection, when combined with the proposed Project and alternatives, would result in a contribution to the overall demand for fire services of the USDA Forest Service or facilities. Significant (Class I) cumulative construction impacts would occur to fire service providers serving NFS lands.
P-2: Operational activities could increase demands on fire and police protection.	Class I	Class I	Class I	Class I	Class I	Class I	The proposed Project and alternatives identified above would combine with recreation and infrastructure-related projects on NFS lands to place demands on fire services of the USDA Forest Service or facilities. While the operation of these projects would be less demanding on fire protection services than many of the residential, commercial, or industrial cumulative projects, the fire history and sensitive nature of NFS lands increase the magnitude of impacts. Consequently, significant (Class I) cumulative operational impacts would occur to fire service providers serving NFS lands.
Visual Resources							
V-3: Degradation of visual character seen from Lake Elizabeth Road (KOP 3).	Class I	Class I	Class I	Class I	Class I	-	When cumulative projects are developed, visual impacts of these projects that are in close proximity to the proposed Project or Alternatives 1, 3, and 4 would cumulatively result in significant and unavoidable (Class I) visual impacts to the landscape, changes in landscape character, and reductions in existing scenic integrity. Alternative 5 would avoid impacts at KOP3 and would not contribute to any cumulative impacts.
V-4: Degradation of visual character seen from the Pacific Crest National Scenic Trail (KOP 4).	Class I	Class I	Class I	Class I	Class I	-	When cumulative projects are developed, visual impacts of these projects that are in close proximity to the proposed Project or Alternatives 1, 3, and 4 would cumulatively result in significant and unavoidable (Class I) visual impacts to the landscape, changes in landscape character, and reductions in existing scenic integrity. Alternative 5 would avoid impacts at KOP4 and would not contribute to any cumulative impacts.
V-5: Degradation of visual character seen from San Francisquito Canyon Road (KOP 5).	Class I	-	Class I	Class I	Class I	-	When cumulative projects are developed, visual impacts of these projects that are in close proximity to the proposed Project or Alternatives 1, 3, and 4 would cumulatively result in significant and unavoidable (Class I) visual impacts to the landscape, changes in landscape character, and reductions in existing scenic integrity. Due to the location of the Alternative 2 route, however, cumulative impacts would be less than significant (Class III) for this alternative. Alternative 5 would avoid impacts at KOP5 and would not contribute to any cumulative impacts.

Table ES-7. Summary of Cumulative Impact for the Proposed Project and Alternatives on National Forest System Lands

Impact	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Notes
V-6 Degradation of visual character seen from Bouquet Dam (KOP 6).	Class I	Class I	Class I	Class I	Class I	-	When cumulative projects are developed, visual impacts of these projects that are in close proximity to the proposed Project or Alternatives 1-4 would cumulatively result in significant and unavoidable (Class I) visual impacts to the landscape, changes in landscape character, and reductions in existing scenic integrity. Alternative 5 would avoid impacts at KOP6 and would not contribute to any cumulative impacts.
V-7: Degradation of visual character seen from Bouquet Canyon Road (KOP 7).	Class I	-	Class I	Class I	Class I	-	When cumulative projects are developed, visual impacts of these projects that are in close proximity to the proposed Project or alternatives would cumulatively result in significant and unavoidable (Class I) visual impacts to the landscape, changes in landscape character, and reductions in existing scenic integrity. Due to the undergrounding of Alternative 1, cumulative impacts for this alternative would be less than significant (Class III). Alternative 5 would avoid impacts at KOP7 and would not contribute to any cumulative impacts.
V-15: Visibility of construction activities and equipment would degrade existing visual character.	Class I	Class I	Class I	Class I	Class I	Class I	Short-term visual impacts associated with construction activities of the proposed Project and alternatives could combine with similar impacts of the Antelope-Vincent Transmission Line, Antelope-Tehachapi Transmission Line, and other on-going cumulative projects in the same field of view, resulting in short-term, significant, unavoidable (Class I) cumulative visual impacts.
V-16: Infrastructure would conflict with adopted visual quality policies.	Class I	Class I	Class I	Class I	Class I	Class I	The visual effects of the proposed Project and alternatives would conflict with adopted plans, policies, regulations, or standards applicable to protection of visual resources. These impacts, combined with existing transmission lines and other planned developments, would result in permanent changes to the landscape, all of which would be cumulatively significant, unavoidable (Class I) visual impacts.

Table ES-8. Indirect Effects Summary for the Proposed Project and Alternatives

IMPACT	SIGNIFICANCE					
	Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Hydrology and Water Quality						
H-1: Soil erosion and sedimentation caused by construction activities would degrade water quality.	Class II	Class II	Class II	Class II	Class II	Class II
H-2: Degradation of surface water or groundwater quality would occur from the accidental release of potentially harmful materials during construction activities.	Class II	Class II	Class II	Class II	Class II	Class II
H-3: Degradation of surface water or groundwater quality would result from the accidental release of potentially harmful materials during operational activities.	Class III	Class II	Class III	Class III	Class III	Class III
H-7: Flood hazards created through the placement of permanent aboveground structures in a flood hazard area, a floodplain, or a watercourse.	Class II	Class II	Class II	Class II	Class II	Class II
Land Use and Public Recreation						
R-4: The Project would facilitate unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational facilities in the Angeles National Forest.	Class II	Class II	Class II	Class II	Class II	Class II
Socioeconomics						
S-1: Construction activities could cause a temporary decrease in revenues for Veluzat Motion Picture Ranch.	Class II	Class II	Class II	Class II	-	-
S-2: Operational activities could cause a decrease in revenues for Veluzat Motion Picture Ranch.	Class I	Class I	Class I	Class I	-	-
S-3: Construction activities could cause a decrease in revenues for agricultural land owners.	Class II	Class II	Class II	Class II	Class II	Class II
S-4: Operational activities would substantially benefit public agency revenue.	Class IV	Class IV	Class IV	Class IV	Class IV	Class IV
S-5: Operational activities would substantially decrease property values along the Project alignment.	Class III	Class III	Class III	Class III	Class III	Class III
S-6: Construction activities could cause a temporary decrease in revenues for Bouquet Canyon Stone Company.	-	Class II	-	-	-	-
Utilities						
U-1: Construction and operational utility and service system demands would change the ability of water utilities and service system facilities to accommodate local demands.	Class III	Class III	Class III	Class III	Class III	Class III
U-2: Construction and operational utility and service system demands would change the ability of solid waste utilities and service system facilities to accommodate local demands.	Class III	Class II	Class III	Class III	Class III	Class III
U-3: Construction and operational utility and service system demands would change the ability of stormwater and wastewater utilities and service system facilities to accommodate local demands.	Class III	Class III	Class III	Class III	Class III	Class III

Table ES-9. Indirect Effects Summary for the PdV Wind Energy Project

IMPACT	SIGNIFICANCE
Air Quality	
PdV A-1: Construction emissions would exceed the KCAPCD regional emission thresholds.	Class II or Class I
PdV A-2: The project would create objectionable odors.	Class III
Biological Resources	
PdV B-1: The project would cause temporary or permanent loss of native vegetation communities.	Class II
PdV B-2: Invasive and non-native vegetation would be introduced as a result of project-related activities.	Class II
PdV B-3: The project would cause temporary damage or permanent loss of oak trees.	Class III
PdV B-4: The project would result in the loss of foraging habitat for wildlife.	Class I
PdV B-5: Construction activities and increased vehicular traffic on access roads would disturb wildlife species.	Class III
PdV B-6: Construction activities during the breeding season would result in a potential loss of nesting birds.	Class II
PdV B-7: The project would result in the loss of listed or sensitive plant species.	Class II
PdV B-8: The project would increase bird and bat mortality due to collisions with wind turbine blades.	Class I
PdV B-9: The project would result in the loss of burrowing owls.	Class II
PdV B-10: The project would result in the loss of special-status amphibian species.	Class II
PdV B-11: The project would result in the loss of special-status reptile species.	Class II
PdV B-12: The project would result in loss of special-status rodent species.	Class II
PdV B-13: The project would result in alteration of a streambed or discharge of fill into jurisdictional waters.	Class III
PdV B-14: Construction of the project would result in the interference with wildlife movements and wildlife nursery sites.	Class II
PdV B-15: Permanent loss of habitat and habitat fragmentation would occur as a result of project construction.	Class I
PdV B-16: The project would conflict with policies or ordinances protecting biological resources.	Class III
Cultural Resources	
PdV C-1: Archaeological sites would be disturbed as a result of the project.	Class II
PdV C-2: Undiscovered cultural resources would be disturbed as a result of the project.	Class II
Geology, Soils, and Paleontology	
PdV G-1: Excavation and grading during construction activities could cause slope instability.	Class II
PdV G-2: Erosion could be triggered or accelerated by construction or disturbance of landforms.	Class II
PdV G-3: PdV Wind Project facilities could be damaged by surface fault rupture.	Class II
PdV G-4: Project structures could be damaged by landslides, settlement, lateral spreading, and/or surface cracking resulting seismic events.	Class II
PdV G-5: Project structures could be damaged by strong groundshaking.	Class II
PdV G-6: Buried tower and substation foundations could be damaged by corrosive soils.	Class II
PdV G-7: Excavation for transmission line structures could damage unique or significant fossils.	Class II

Table ES-9. Indirect Effects Summary for the PdV Wind Energy Project	
IMPACT	SIGNIFICANCE
Public Health and Safety	
PdV PH-1: Soil or groundwater contamination results due to improper handling and/or storage of hazardous materials during construction activities.	Class II
PdV PH-2: Project results in encountering known preexisting soil or groundwater contamination.	Class II
PdV PH-3: Project results in encountering unknown preexisting soil or groundwater contamination.	Class II
PdV PH-4: Release of hazardous materials during operation and maintenance activities.	Class II
PdV PH-6: Project operation would cause synchronous pacemakers to revert to an asynchronous mode.	Class III
Hydrology and Water Quality	
PdV H-1: Soil erosion and sedimentation would occur from construction activities.	Class III
PdV H-2: Degradation of surface water or groundwater quality due to spills of potentially harmful materials used during construction.	Class III
PdV H-3: Degradation of surface water or groundwater quality resulting from spills of potentially harmful materials used during operational activities.	Class III
PdV H-4: Disturbance of existing groundwater resources through project-related excavation activities.	Class III
PdV H-5: Increased runoff from the creation of new impervious areas.	Class III
PdV H-6: Runoff introduced as a result of permanent Project features would cause the overloading of a local stormwater drainage system.	Class III
PdV H-7: Flood hazards would be created through the placement of permanent, aboveground structures in a flood hazard area, a floodplain or a watercourse.	Class II
Land Use and Public Recreation	
PdV LU-1: Construction activities would temporarily disrupt existing residential land uses.	Class II
PdV LU-2: Operation would cause long-term disruption of existing residential land uses.	Class III
PdV LU-3: Construction activities would conflict with a Williamson Act contract.	Class II
PdV LU-4: Operation would conflict with a Williamson Act contract.	Class II
PdV LU-5: Construction of the project would preclude the use of established recreation areas.	Class II
PdV LU-6: The project would contribute to the long-term loss or degradation of recreational facilities.	Class I
Noise	
PdV N-1: Construction and operation could violate local standards.	Class III
PdV N-2: Substation and wind turbine noise would result in higher ambient noise levels.	Class I
PdV N-3: Construction activities would result in high levels of noise.	Class III
Public Services	
PdV PS-1: Construction activities would temporarily increase demands on fire and police protection.	Class III
Socioeconomics	
PdV SOC-1: Construction activities could cause a decrease in revenues for agricultural landowners.	Class III
PdV SOC-2: Operational activities would affect public agency revenue.	Class IV
PdV SOC-3: Operational activities would affect property values near the project site.	Class III
Traffic and Transportation	
PdV T-1: Construction traffic would result in congestion on area roadways.	Class III

Table ES-9. Indirect Effects Summary for the PdV Wind Energy Project	
IMPACT	SIGNIFICANCE
PdV T-2: Construction vehicles and equipment could damage road ROWs.	Class II
PdV T-3: Project structures could affect aviation activities.	Class III
Utilities	
PdV U-1: Construction and operational utility and service system demands would change the ability of water utilities and service system facilities to accommodate local demands.	Class III
PdV U-2: Construction and operational utility and service system demands would change the ability of solid waste utilities and service system facilities to accommodate local demands.	Class II
PdV U-3: Construction and operational utility and service system demands would change the ability of stormwater and wastewater utilities and service system facilities to accommodate local demands.	Class III
PdV U-4: Construction and operational water supply demands would require new or expanded water entitlements or resources.	Class III
PdV U-5: The amount of waste material recycled during construction activities would not adhere to State standards.	Class II
Visual Resources	
PdV V-1: Project infrastructure would substantially degrade the visual quality of landscape views as seen from nearby travel routes (Highway 138).	Class I
PdV V-2: Project infrastructure would substantially degrade the visual quality of landscape views as seen from the Pacific Crest National Scenic Trail.	Class I
PdV V-3: The PdV Wind Energy Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	Class II

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Table ES-10. Summary Comparison of Environmental Issues / Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
AIR QUALITY						
Construction – SCAQMD daily regional emissions, lb/day (Impact A-1)	NOx = 551 VOC = 66 CO = 413 PM10 = 677 PM2.5 = 146 SO_2 = 3	NOx = 665 VOC = 78 CO = 489 PM10 = 886 PM2.5 = 190 SO_2 = 3	NOx = 866 VOC = 101 CO = 654 PM10 = 695 PM2.5 = 163 SO_2 = 6	Same as proposed Project	Same as proposed Project	Same as proposed Project
Construction – SCAB daily regional threshold exceeded (Impact A-1)	Yes (NOx and PM10)	Yes (NOx, VOC and PM10)	Yes (NOx, VOC, CO, PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)
Construction – MDAB daily regional emissions, lb/day (Impact A-1)	NOx = 534 VOC = 64 CO = 403 PM10 = 324 PM2.5 = 91 SO_2 = 3	Same as proposed Project	Same as proposed Project	Same as proposed Project	Same as proposed Project	Same as proposed Project
Construction – MDAB daily regional threshold exceeded (Impact A-1)	Yes (NOx and PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)	Yes (NOx and PM10)
Construction – SCAQMD localized significance thresholds exceeded (Impact A-2)	No	Yes (PM10)	No	No	No	No
Construction – SCAQMD annual emissions, tons/year (Year 2008, except for Alt 1 is Year 2009) (Impact A-3)	NOx = 14.35 VOC = 1.88 CO = 11.13 PM10 = 12.89 PM2.5 = 3.08 SO_2 = 0.06	NOx = 26.37 VOC = 3.27 CO = 18.42 PM10 = 30.82 PM2.5 = 7.15 SO_2 = 0.04	NOx = 16.56 VOC = 2.17 CO = 13.09 PM10 = 10.59 PM2.5 = 3.10 SO_2 = 0.09	NOx = 14.16 VOC = 1.85 CO = 10.92 PM10 = 12.70 PM2.5 = 3.02 SO_2 = 0.06	NOx = 14.54 VOC = 1.90 CO = 11.22 PM10 = 13.05 PM2.5 = 3.13 SO_2 = 0.07	NOx = 16.91 VOC = 2.19 CO = 13.13 PM10 = 15.98 PM2.5 = 3.77 SO_2 = 0.08
Construction – SCAQMD general conformity threshold exceeded (Impact A-3)	No	Yes (NOx) – additional mitigation required	No	No	No	No
Conform to Angeles National Forest air quality strategies (Impact A-5)	Yes, with mitigation	Yes, with mitigation	Yes, with mitigation	Yes, with mitigation	Yes, with mitigation	Yes, with mitigation
BIOLOGICAL RESOURCES						
Total land disturbance in acres w/o MM V-4a (Impact B-1, B-3, B-4, B-6, B-7, B-15, B-17, B-18)	121.8	218.0	116.6	121.8	125.5	145.6
Total land disturbance to NFS lands in acres w/o MM V-4a (Impact B-1, B-3, B-4, B-6, B-7, B-15, B-17, B-18, B-27	43.5	91.0	37.9	43.5	44.5	9.9
Total permanent land disturbance in acres On / Off NFS lands.	58.5 22.1 / 36.4	75.9 33.4 / 42.5	58.0 21.2 / 36.8	58.5 22.1 / 36.4	61.2 22.9 / 38.3	59.0 2.6 / 56.4
Potential to cause increased soil erosion, sedimentation, and runoff into waters supporting sensitive species (Impact B-28)	Moderate	High	Moderate to High	Moderate	Moderate	Moderate to High
Potential for invasion by exotic plants (Impact B-4)	Moderate.	Highest due to large area of ground disturbance.	Moderate to High. Mid slope location in relatively undisturbed habitat.	Moderate.	Moderate.	Moderate. Most of this area contains populations of exotic plants. However, removal of the 119 existing 66kV lines on NFS lands could result in the spread of invasive plants.
Potential for avian collisions with the transmission line (Impact B-14 and B-23)	High due to prominent location on ridge top.	Moderate due to underground portion of transmission line.	Moderate to High due to mid slope location.	High due to prominent location on ridge top.	High due to prominent location on ridge top.	Moderate due to location. This area may have reduced potential for condor presence. In addition, this alternative would remove the existing line from NFS lands which could result in beneficial impacts to condors.
Potential impacts to Management Indicator Species (Impact B-27)	Moderate due to ridge location.	Increased due to extensive trenching and construction schedule (29 months).	Moderate to High due to mid-slope location.	Moderate due to ridge location.	Moderate due to ridge location.	Low due to limited section of ROW on NFS lands. MIS species would be subject to disturbance when the existing lines are removed. Could result in beneficial impacts to condor.
Jurisdictional waters and wetlands (Waters of the U.S. and CDFG jurisdiction) (Impact B-28)	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing	Avoided on NFS lands. Potential impact at Haskell Canyon Road crossing and small tributaries located along ROW.

Table ES-10. Summary Comparison of Environmental Issues/Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Duration of construction (i.e., duration of disturbance to wildlife) (Impact B-3, B-4, B-6, B-17, B-27, B-29)	13 months	10 months (overhead) 29 months (underground)	14 months	13 months	13 months	16 months
CULTURAL RESOURCES						
No. of archeologically (prehistoric) sensitive sites potentially impacted (Impact C-3, C-4, C-8, Alt 5 = C-19, C-20, C-21)	3 (includes historic component: Cochem Ranch)	3 (includes historic component: Cochem Ranch)	2 (includes historic component of Cochem Ranch)	3 (includes historic component: Cochem Ranch)	2 (includes historic component of Cochem Ranch)	3
No. of historically sensitive sites potentially impacted (Impact C-1, C-2, C-5, C-6, C-7, C-9, C-10, C-11, C-12, C-13 Alt 5 = C-2, C-15, C-16, C-17, C-18, C-22, C-23)	10	10	8	10	8	7
GEOLOGY, SOILS, AND PALEONTOLOGY						
Crossings of active faults (or traces) (Impact G-3, Alt. 1 = G-12)	San Andreas Fault, San Gabriel Fault (both overhead)	San Andreas Fault (overhead), San Gabriel Fault (underground) – mitigation recommended	San Andreas Fault, San Gabriel Fault (both overhead)	San Andreas Fault, San Gabriel Fault (both overhead)	San Andreas Fault, San Gabriel Fault (both overhead)	San Andreas Fault, San Gabriel Fault (both overhead)
Crossings of existing landslides (Impact G-4, G-9)	Two mapped landslides in the Pelona Schist along Del Sur Ridge	Same as proposed Project	Crosses several moderate sized landslides within the Pelona Schist. Numerous other small to moderate sized landslides mapped in the vicinity within the Pelona Schist.	Same as proposed Project	Two mapped landslides in the Pelona Schist along Del Sur Ridge; as well as the Mint Canyon and Castaic Formations, which underlie re-routed portion, are prone to landslides.	Re-route does not cross any mapped landslides. Shared alignment crosses several landslides. Numerous other landslides mapped in the vicinity.
Areas crossed with potential for liquefaction (Impact G-4)	Some portions of the alignment are located in areas underlain by potentially liquefiable alluvial deposits – mitigated	Santa Clarita underground segment is underlain by alluvial deposits in San Francisquito Canyon, Santa Clara River Valley, and alluvial and creek deposits of smaller side drainages.	Potentially liquefiable alluvial deposits on the valley floor of Bouquet Canyon east of Bouquet Reservoir, although unlikely tower structures will be placed in this area.	Same as proposed Project	Same as proposed Project	Santa Clara River Valley, Leona Valley, and in the alluvial and creek deposits of intervening drainages.
Potential to disturb significant fossil-bearing geologic formations (Impact G-9)	High to Moderate sensitivity – Anaverde Formation, Mint Canyon Formation, Castaic Formation, Saugus Formation	Similar as proposed Project, except substantially more excavation and ground disturbance in Saugus Formation located in Santa Clarita underground segment increases potential to disturb.	Same as proposed Project – Area of re-route has no potential (granitic and metamorphic rocks)	Same as proposed Project	Same as proposed Project	Same as proposed Project
Interferes with access to mineral resources (Impact G-10)	No	Yes (Bouquet Canyon Stone Quarry) –mitigation recommended	No	No	No	No
Substantial permanent alteration of topography (Impact G-11)	No	Yes (Del Sur Ridge) - mitigated	No	No	No	No
PUBLIC HEALTH AND SAFETY						
Project-related activities with increased potential for the accidental spill or release of hazardous substances[1] (Impact PH-1 and PH-4)	• Tower construction (25.6 miles) • Substation modifications	• Tower construction (18.7 miles) • Undergrounding (6.9 miles) • Substation modifications • Maintenance of underground facilities	• Tower construction (26.7 miles), particularly 11.8 miles of hillside towers • Substation modifications • Maintenance of hillside towers (11.8 miles)	• Tower construction (25.6 miles) • Substation modifications	• Tower construction (25.9 miles) • Substation modifications	• Tower construction (37.4 miles) • Substation modifications
General location of excavation activities that may lead to the disturbance of contaminated soils (Impact PH-2 and PH-3)	• Tower sites • Substation sites	• Tower sites • Mile 11-15 • Mile 22.7-25.6 • Substation sites	• Tower sites • Mile 5.7-17.5 • Substation sites	• Tower sites • Substation sites	• Tower sites • Substation sites	• Tower sites • Substation sites
Areas where the project may cause radio or television interference (Impact PH-5)	Localized residences and businesses in Lancaster and Santa Clarita, specifically Veluzat Motion Picture Ranch	Same as proposed Project	Same as proposed Project	Same as proposed Project	Same as proposed Project	Localized residences and businesses in Lancaster, Palmdale, Agua Dulce, Acton, and Santa Clarita

[1] "Hazardous substances" refers to a wide variety of potentially harmful materials, including but not limited to the following: gasoline, diesel fuel, oil, hydraulic fluid, lubricants, paints, solvents, adhesives, and cleaning chemicals.

Table ES-10. Summary Comparison of Environmental Issues / Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
FOREST MANAGEMENT ACTIVITIES						
Construction activities would restrict aggressive ground fire suppression on Del Sur Ridge (Impact F-3)	Yes	Yes	Yes	Yes	Yes	No
Construction activities would affect aggressive aerial fire suppression (Impact F-3)	Yes	No	Yes	Yes	Yes	No
Transmission line operation would affect aggressive fire suppression on Del Sur Ridge (Impact F-4)	Yes	No	No	Yes	Yes	No
Transmission line would affect aggressive fire suppression activities near Bouquet Canyon Reservoir (Impact F-4)	Yes	Yes	No	Yes	Yes	No
Transmission line would affect fire prevention activities on Del Sur Ridge (Impact F-5)	Yes	No	No	Yes	Yes	No
Transmission line would affect firefighter safety on Del Sur Ridge (Impact F-6)	Yes	No	No	Yes	Yes	No
HYDROLOGY AND WATER QUALITY						
Major overhead water body crossings (Name: Mile) (Impact H-2 to H-4)	10: CA Aqueduct: 2.9 Amargosa Creek: 5.1 Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7, 20.7 Petting Canyon: 18.8-19.5 San Francisquito Canyon: 24	9: CA Aqueduct: 2.9 Amargosa Creek: 5.1 Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7, 20.7 Petting Canyon: 18.8-19.5	8: CA Aqueduct: 2.9 Spunky Canyon Bouquet Canyon (x2) Haskell Canyon: 17.6-17.7, 20.7 Petting Canyon: 18.8-19.5 San Francisquito Canyon: 24	10: CA Aqueduct: 2.9 Amargosa Creek: 5.1 Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 17.6-17.7, 20.7 Petting Canyon: 18.8-19.5 San Francisquito Canyon: 24	8: CA Aqueduct: 2.9 Amargosa Creek: 5.1 Spunky Canyon: 7.5, 8.6 Bouquet Reservoir: 9.3-9.9 Bee Canyon: 10-10.6 Haskell Canyon: 20.7 San Francisquito Canyon: 24	14: California Aqueduct: 2.6 Amargosa Creek: 4.5 Bouquet Canyon: 9.1, 30.3 Maple Canyon: 9.9 Willow Spring Gulch: 13.1, 13.7 Agua Dulce Canyon: 13.7-14.1, 21.9 Escondido Canyon: 17.5 Tick Canyon: 24.1 Mint Canyon: 26 Haskell Canyon: 32.5 San Francisquito Canyon: 35.8
Minor (mountain stream[2] or valley wash[3]) overhead water body crossings (Impact H-2 to H-4)	19	15	29	19	22	19
Minor (mountain stream) underground crossings	0	4	0	0	0	0
Miles within the Antelope Valley Groundwater Basin (Impact H-2 to H-4)	7.0	7.0	7.0	7.0	7.0	7.0
Miles within the Santa Clara Valley East Groundwater Basin (Impact H-2 to H-4)	3.6	3.6	3.6	3.6	3.6	9.0
LAND USE AND PUBLIC RECREATION						
Consistent with an amendment to the 2005 ANF Land Management Plan	Requires amendment to Scenic Integrity Objectives and ANF S1	Requires amendment to Scenic Integrity Objectives, ANF S1, and utility corridor designation	Requires amendment to Scenic Integrity Objectives, ANF S1, and utility corridor designation	Requires amendment to Scenic Integrity Objectives and ANF S1	Requires amendment to Scenic Integrity Objectives, ANF S1, and utility corridor designation	Requires amendment to Scenic Integrity Objectives and utility corridor designation
Permanent condemnation/preclusion of residential/ commercial uses (excluding private property upon which residences are not affected) (Impact L-3 and L-4)	Precluded commercial use – Veluzat Motion Picture Ranch	Precluded commercial use – Veluzat Motion Picture Ranch	Precluded commercial use – Veluzat Motion Picture Ranch	Precluded commercial use – Veluzat Motion Picture Ranch	None	Potential condemnation of one or more homes (final outcome dependant on more detailed alignment studies)
No. of private parcels traversed (Impact L-3)	58 (6 are within the ANF)	58 (6 are within the ANF)	59 (7 are within the ANF)	58 (6 are within the ANF)	60 (8 are within the ANF)	103 (none are within the ANF)

[2] "Mountain stream" is a descriptive term for an unnamed stream, creek, or wash located in hilly or mountainous terrain.
[3] "Valley wash" refers to a dry streambed that may have only occasional flow.

Table ES-10. Summary Comparison of Environmental Issues/Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Recreational resources potentially affected (No. of sites / No. of trails) (Impact R-1 and R-2)	5 sites / 4 trails	5 sites / 4 trails	5 sites / 4 trails	5 sites / 4 trails	5 sites / 4 trails	1 site / 2 trails
Construction and/or improvement of access/spur roads within NFS lands (Impact R-3 and R-4)	Access roads: 9.7 miles Spur roads: 1.1 miles	Access roads: 10.2 miles Spur roads: 3.1 miles	Access roads: 10.4 miles Spur roads:0.3 miles	Access roads: 9.7 miles Spur roads: 1.1 miles	Access roads: 9.6 miles Spur roads: 1.5 miles	Access roads: 1.2 miles Spur roads: 0.1 miles
Linear miles of traversed Farmland (Impact L-5 and L-6)	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.8 miles
NOISE						
Sensitive receptors significantly impacted by temporary noise from construction activities, as well as routine inspection and maintenance activities (Impact N-1, N-4, N-7)	Residents of Lancaster, Santa Clarita, ANF, L.A. County, Veluzat Motion Picture Ranch	Residents of Lancaster, L.A. County, Veluzat Motion Picture Ranch. Additional construction activities and traffic associated with underground construction, as well as the increase duration of construction, would increase impacts to sensitive receptors in Santa Clarita, ANF, and along haul truck traffic routes.	Residents of Lancaster, Santa Clarita, ANF, L.A. County, Veluzat Motion Picture Ranch.	Residents of Lancaster, Santa Clarita, ANF, L.A. County, Veluzat Motion Picture Ranch. Minimal reduction in noise as a result of NOT removing the existing single-circuit towers along 5.3-mile segment between Mile 20.3 and Mile 25.6 (Pardee Substation)	Residents of Lancaster, Santa Clarita, ANF, and L.A. County	Residents of Lancaster, Santa Clarita, Leona Valley, ANF, L.A. County (Acton)
Sensitive receptors significantly impacted by permanent operations (Impact N-2, N-3, N-5, N-6)	Corona noise levels exceed L.A. County standards at Veluzat Motion Picture Ranch	Corona noise levels exceed L.A. County standards at Veluzat Motion Picture Ranch	Corona noise levels exceed L.A. County standards at Veluzat Motion Picture Ranch	Corona noise levels exceed L.A. County standards at Veluzat Motion Picture Ranch	None – Corona noise levels would NOT exceed L.A. County standards for residential receptors	None – Corona noise levels would NOT exceed L.A. County standards for residential receptors
Significant temporary noise impacts to recreational users in the ANF (Impact N-8)	Yes 12.6 miles on NFS lands	Yes 12.6 miles on NFS lands	Yes 13.2 miles on NFS lands	Yes 12.6 miles on NFS lands	Yes 12.5 miles on NFS lands	Yes 1.5 miles on NFS lands
Duration of construction (i.e., duration of construction noise pollution) (Impact N-1)	13 months	10 months (overhead) 29 months (underground)	14 months	13 months	13 months	16 months
PUBLIC SERVICES						
Increase demand for fire protection services during construction (Impact P-1)	Construction activities for overhead transmission line could temporarily increase demand for fire protection, particularly on NFS lands	Trenching activities have a greater demand for fire protection than overhead transmission construction activities, particularly on NFS lands	Fire protection demands would be largely similar to the proposed Project, although with a greater demand for aerial resources along the 37 towers off access roads	Fire protection demands would be the same as the proposed Project	Fire protection demands would be the same as the proposed Project	Greater length of route would increase demand for fire protection services over the proposed Project
Increase demand for fire protection services during operation (Impact P-2)	Operation of a double-circuit 500-kVoverhead transmission line would increase demand for fire protection services	Installation of transmission line underground for portions of the route would reduce long-term fire protection demand	Fire protection demands would be largely similar to the proposed Project, although with a greater demand for aerial resources along the 37 towers off access roads	Single-circuit 500-kV would have a slightly less demand on fire protection services than the proposed Project	Fire protection demands would be the same as the proposed Project	Greater length of route would increase demand for fire protection services over the proposed Project
SOCIOECONOMICS						
Construction Workforce	Approximately 20 to 120 personnel, with an estimated average daily workforce of 50 personnel	Greater than 120 workers due to specialized underground construction	Approximately 20 to 120 personnel, with an estimated average daily workforce of 50 personnel	Approximately 20 to 120 personnel, with an estimated average daily workforce of 50 personnel	Approximately 20 to 120 personnel, with an estimated average daily workforce of 50 personnel	Approximately 20 to 120 personnel, with an estimated average daily workforce of 50 personnel
Business Disruption (Impact S-1 to S-3, Alt 1 = S-6)	Bouquet Canyon Stone Quarry, Veluzat Motion Picture Ranch , and agricultural uses	Bouquet Canyon Stone Quarry, Veluzat Motion Picture Ranch , and agricultural uses	Veluzat Motion Picture Ranch and agricultural uses	Veluzat Motion Picture Ranch and agricultural uses	Bouquet Canyon Stone Quarry and agricultural uses	Agricultural uses only
Residential Displacement (Alt 1 = Impact S-7)	No	No	No	No	No	Some Potential
TRAFFIC AND TRANSPORTATION						
Number of road crossings (Impact T-1)	25 (7 on NFS lands)	20 (7 on NFS lands)	28 (8 on NFS lands)	25 (7on NFS lands)	24 (7 on NFS lands)	32 (0 on NFS lands)
Number of roadway segments immediately adjacent to transmission route	5	2	3	5	5	1
Restricts access to homes and businesses due to underground construction activities (Alt 1 = Impact T-9)	No	Yes	No	No	No	No

Table ES-10. Summary Comparison of Environmental Issues/Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Restricts access to Bouquet Canyon Stone Company (Impact Alt 1 = Impact T-9)	No	Yes	No	No	No	No
Number of SR-14 & Sierra Highway Crossings (Impact T-1)	0	0	0	0	0	4
Inconsistency with transportation plans	No	No	No	No	No	Yes
Tower heights may exceed FAA 200-foot thresholds and would require FAA review and approval of Project (Impact T-8)	Yes	No	Yes	No	Yes	Yes
UTILITIES AND SERVICE SYSTEMS						
Acre-feet of water required for construction (Impact U-1)	5.82	25.00	6.06	5.77	6.00	8.60
Tons of waste generated by construction (Impact U-2)	2,876	173,772	2,899	2,242	2,886	4,976
VISUAL RESOURCES						
With Forest Plan amendment, meets a minimum level of acceptable scenic integrity objective? If yes, what Miles would meet Very Low Scenic Integrity Objective (SIO)?	Yes – Achieves Very Low SIO from Mile 5.7 to 17.6	No – Achieves Unacceptably Low SIO from Mile 11.0 to 15.0	Yes – Achieves Very Low SIO from Mile 6.4 to 7.7 and 13.5 to 14.0	Yes – Achieves Very Low SIO from Mile 5.7 to 17.6	Yes – Achieves Very Low SIO from Mile 5.7 to 17.6 and 18.3 to 18.8	Yes – Achieves Very Low SIO from Mile 5.6 to 6.1, 17.1 to 17.5, and 17.9 to 18.5
No. of crossings of the Pacific Crest National Scenic Trail on NFS lands (Impact V-4, Alt 5 = Impact V-27)	1	1	1	1	1	0
Number of crossings of the Pacific Crest National Scenic Trail on BLM lands (Alt 5 = Impact V-27)	0	0	0	0	0	1
Maximum number of levels below Scenic Integrity Objectives without mitigation	4	4	3	4	4	4
Maximum number of levels below Scenic Integrity Objectives with mitigation	3	4	3	3	3	1 – 0.5 miles through ANF 3 – 1.0 mile through newly acquired NFS lands in Soledad Canyon
Visible from Veluzat Motion Picture Ranch "Main Street" (Impact V-9)	Yes	Yes	Yes	Yes	No	No
Achievable SIO, with mitigation measures, as seen from Pacific Crest National Scenic Trail on NFS lands (Impact V-4)	Very Low	Very Low	Very Low	Very Low	Very Low	N.A.
Achievable Visual Resource Management System (VRM) Class, with mitigation measures, as seen from Pacific Crest National Scenic Trail on BLM lands (Impact V-27)	N.A.	N.A.	N.A.	N.A.	N.A.	VRM Class IV
Visible from San Francisquito Canyon Road, and achieves what SIO with mitigation? (Impact V-5)	Yes – Very Low	Yes – Unacceptably Low	No – High	Yes – Very Low	Yes – Very Low	No – High
Visible from Bouquet Reservoir, and achieves what SIO with mitigation? (Impact V-6)	Yes – Very Low	Yes – Very Low	Yes – Low	Yes – Very Low	Yes – Very Low	No – High
Visible from Bouquet Canyon Road, and achieves what SIO with mitigation? (Impact V-7)	Yes – Very Low	No – High	Yes – Very Low	Yes – Very Low	Yes – Very Low	No – High
Visible from Vasquez Canyon Road, and achieves what SIO with mitigation? (Impact V-8)	Yes – Very Low	Yes – Unacceptably Low	Yes – High	Yes – Very Low	Yes – Very Low	No – High
Visible from North Park Elementary School and Chesebrough Park (Impact V-13)	Yes	No	Yes	Yes	Yes	Yes
Visible from Copper Hill Road (Impact V-14).	Yes	No	Yes	Yes	Yes	Yes

Table ES-10. Summary Comparison of Environmental Issues / Impacts

Environmental Issues / Impacts	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Visible from Vasquez Rocks County View Park (Alt 5 = Impact V-25)	No	No	No	No	No	Yes
Transmission line in ANF is viewed following along ridgelines in a "skylined" condition	Yes	Yes	No	Yes	Yes	No