

## C.7 Forest Management Activities

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This section provides a discussion of the potential effects the proposed Project and alternatives could have on forest management activities. This section specifically focuses on wildland fire suppression and fire prevention. Impacts to these activities were key concerns brought up by the ANF and became a part of the Forest objectives for the Project. The Project's potential to cause wildland fires (thus impacting Forest management activities), to increase safety risk to firefighters and adjacent communities, and to impact fire suppression and prevention activities are evaluated with respect to both construction and operation activities of the Project.

Impacts to other forest management activities are included in other sections of the document (e.g., management of recreation uses and maximizing management of utility corridors are addressed in Section C.9 [Land Use and Public Recreation]).

### C.7.1 Affected Environment

#### C.7.1.1 Project Location Characteristics

As described in Section B of this document (and noted in Figure ES-2, Antelope Pardee 500-kV Proposed and Alternative Routes), the routes described for the proposed Project and Alternatives 1 through 4 would start from the Antelope Substation on the outskirts of the City of Lancaster and traverse through unincorporated Los Angeles County lands, through the ANF, and into the City of Santa Clarita to the Pardee Substation. Approximately half of the proposed transmission line would cross NFS lands on the ANF (12.6 to 13.2 miles depending on the route). The lands in this area are susceptible to wildland fires and are characterized by chaparral and chemise vegetation ecosystem. Chaparral normally does not burn until it reaches approximately 25 years of age, but in southern California all but the very youngest age classes will burn at times of low fuel moisture and extreme fire weather (USDA Forest Service, 2005a).

The route for Alternative 5 (see Figure ES-2) is different than the proposed Project and other project alternatives in that it would travel around the majority of the ANF, although it would still originate at Antelope Substation and end at Pardee Substation. Approximately 1.5 miles of the Alternative 5 route would be located on NFS lands; 35.7 miles would be located on non-NFS lands. The vegetation along this route is a mosaic of sage scrub, chaparral, and grasslands that vary based on topography and hillside aspect or co-exist as a mixed vegetation community (see C.3.11.1.3, Alternative 5 Existing Conditions). The lands traversed by the route for Alternative 5 are categorized as Fire Zone 4 by the Los Angeles County Safety Element, indicating a susceptibility to wildland fires (County of Los Angeles, 1990b).

According to the ANF Fire Management Plan, the majority of the Project area is within Fire Management Unit 2 – mid-elevation, non-wilderness where the fire regime associated with this vegetation type are:

- High intensity
- Stand replacing in nature
- Steep slopes and heavily bisected topography limiting control opportunities, and
- Mechanized equipment is restricted in many areas to the primary ridge systems.

Fires under typical weather patterns run to the ridge tops where changes in the alignment of the fire spread allow for successful suppression operations to be conducted. The density of the chaparral fuels, especially fuel beds older than 20 years, reduces the effectiveness of aerial suppression actions as retardant and water is less efficient at penetrating the canopy and affecting the surface fuels.

### C.7.1.2 Fire Histories and Characteristics

Four jurisdictions within the Project area could be impacted by a wildland fire and affect forest management activities. A description of the fire history and characteristics of each jurisdiction is provided below:

- **City of Lancaster** - The Antelope Substation and the Project alignment are located in an undeveloped portion of the City of Lancaster, which is generally comprised of dry desert vegetation prone to periodic burning. Because the vegetation in this area is generally low and grassy or lightly brushed, this area does not burn as frequently as the nearby heavily brushed mountains such as those within unincorporated Los Angeles County and ANF (City of Lancaster, 1994).
- **County of Los Angeles** - The hilly terrain traversed by the Project alignment is susceptible to wildland fires because of its terrain, dry weather, and woodland and brush areas. This portion of the County is designated as Fire Zone 4 and a variety of regulatory programs and standards are directed toward the abatement of fire hazards and the reduction of risk to tolerable levels (County of Los Angeles, 1990b).
- **Angeles National Forest** - The ANF has one of the most dramatic wildland fire histories of any National Forest. Between 1970 and 1999 an average of 10,011 acres has burned annually and a significant number of acres burn in the urban-wildland interface. The majority of fires (over 85%) during this same period were human-caused. The majority of wildland fires on NFS lands pose an imminent threat to communities within and along the periphery of the Forest. This is magnified when periods of high wind and high temperatures combine with low humidity and drought. Chaparral vegetation is the predominant fuel type and severe weather and Santa Ana winds present a high potential for large catastrophic wildfires. Figure C.7-1, Angeles National Forest, Fire History provides a map showing the recent wildland fire activity in and around the project area (USDA Forest Service, 2005a).

The ANF has developed an extensive system of fuelbreaks (approximately 170 miles) to assist fire suppression and firefighting forces in limiting wildland fire size under normal burning conditions. These fuelbreaks have contributed to firefighter safety and have been used to control wildland fire perimeters. They have proved most valuable where a road runs parallel to the fuelbreak and serves as part of the fuelbreak, such as the Del Sur Ridge Fuelbreak. Figure C.7-2 provides a map of the fuelbreak system in the project area and notes sections of fuelbreaks that have recently been maintained. On large fires burning under severe conditions, firefighters typically take an indirect approach to fire suppression, often using a backfiring strategy from roads and fuelbreaks. As many as 20 fixed-wing and rotary-winged aircraft may be assigned to such a fire in support of the ground forces involved in the fire suppression. On small fires burning under more moderate conditions, aircraft drop fire retardant on fuelbreaks and ridge tops to halt the spread of the fire, while ground forces take the opportunity to fight the fire directly by creating a containment line around the fire (USDA Forest Service, 2005b).

Reviewing the ANF database, between 1996 and 2004, 70 fires on the Forest were related to electrical lines. The database does not state whether these fires were caused by distribution lines, transmission lines, construction activities or operation and maintenance activities, but according to the Power Line Fire Prevention Guide (OSFM, 2001), fire protection agency statistics nationally show that more fires start from distribution lines than from transmission lines.

- **City of Santa Clarita** - The City of Santa Clarita is susceptible to a range of fire hazards from wildfires to urban fires. Wildfire hazard areas in Santa Clarita Valley occur in the hillside areas. The wildfire hazard is exacerbated by seasonally high winds occurring during the Santa Ana condition. Chaparral and sagebrush vegetation provide highly flammable fuel that allow fires to spread easily. (City of Santa Clarita, 2001).

### C.7.1.3 Fire Suppression and Fire-Fighting Capabilities

Wildland fire suppression operations are extremely complex and expensive to initiate and manage. Fire suppression needs in the interface-intermix typically result in a multi-agency fire-fighting response that involves hundreds of firefighters participating in well-coordinated air and ground operations. Typically, initial attack forces dispatched to a multi-agency fire include 10 or more engines, several dozers, four hand crews, between two and five helicopters and a minimum of two air tankers. According to the Forest Land Management Plan Environmental Impact Statement, one third of all Forest Service fire engines (103) in California are located on southern California National Forests. There is an equal commitment of firefighting aircraft to support ground operations (USDA Forest Service, 2005a)

Figure C.7-1. Fire History Map

[CLICK HERE TO VIEW](#)

Figure C.7-2. Fuelbreak Map

[CLICK HERE TO VIEW](#)

## The Los Angeles County Fire Department

(LACFD) provides fire protection for the unincorporated areas of Los Angeles County and has contracts with the Cities of Santa Clarita and Lancaster. In addition, the USDA Forest Service, which manages the ANF, has a Mutual Aid agreement with the LACFD to provide fire services. The California Department of Forestry has a contract with the LACFD where LACFD has wildland fire jurisdiction on privately owned forestlands, watersheds, and rangelands referred to as State Responsibility Areas (SRAs).

The LACFD consists of more than 3,700 sworn and civilian personnel and is divided into three Regional Emergency Operations Bureaus, consisting of: North Operations Bureau, Central Operations Bureau, and East Operations Bureau. The proposed Project is located within the North Operations Bureau area of the LACFD. However, in the event of a fire emergency all fire stations in the County would respond as needed in accordance with the California Master Mutual Aid Agreement, Section 8561 of the California Government Code. The LACFD operates 9 divisions, 20 battalions, 158 fire stations and 11 fire suppression camps in the 2,296 square mile service area, and answers over 234,000 emergency calls annually. Specifically, LACFD is comprised of the following (LACFD, 2005):

- 1,170 total firefighters;
- 158 Fire Stations;
- 162 Engine Companies;
- 29 Trucks;
- 61 Paramedic Squads;
- 3 Hazardous Materials Squads;
- 2 Search and Rescue (USAR) Squads;
- 5 Emergency Support Teams; and,
- 3 Paramedic Air Squads.

## USDA Forest Service

The USDA Forest Service has primary wildland fire suppression responsibility on federal and private lands within the congressional boundary of the Angeles National Forest. The Southern California Geographic Coordination Center (GACC) has responsibility for the mobilization of federal resources with the sphere of influence of the ANF. This geographic area runs from the Stanislaus National Forest (in the Sierra Nevada) to Cleveland National Forest (east of San Diego) and the staffing noted below is based on fire season (averages 5-6 months per year). During extended attack wildland fires, federal resources may be mobilized from across the nation in support of these incidents; however, for the purposes of evaluating local capabilities to respond to a local wildfire, only resources within the GACC are considered. These resources include:

- 154 Fire Engines;
- 24 Hand Crews;
- 3 Dozers;
- 15 Helicopters (5 Type I Helitankers; 8 Type II helicopters; 3 Type III helicopters;
- 7 Airtanker Bases; and,
- 5 Airtactical Planes.

## C.7.2 Regulatory Framework

### C.7.2.1 Federal

#### National Fire Plan

The National Fire Plan (NFP) was developed in August 2000 following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points:

- Firefighting,
- Rehabilitation,
- Hazardous Fuels Reduction,
- Community Assistance, and
- Accountability.

As it nears its fifth year, the National Fire Plan continues to provide technical, financial, and resource guidance and support for wildland fire management across the United States. Together, the Forest Service and the Department of the Interior work to successfully implement the key points outlined in the National Fire Plan by taking the following steps (National Fire Plan, 2005):

- Assuring that necessary firefighting resources and personnel are available to respond to wildland fires that threaten lives and property;
- Conducting emergency stabilization and rehabilitation activities on landscapes and communities affected by wildland fire;
- Reducing hazardous fuels (dry brush and trees that have accumulated and increase the likelihood of unusually large fires) in the country's forests and rangelands;
- Providing assistance to communities that have been or may be threatened by wildland fire; and
- Committing to the Wildland Fire Leadership Council, an interagency team created to set and maintain high standards for wildland fire management on public lands.

### **Angeles National Forest Fire Management Plan**

The Angeles National Forest Fire Management Plan (FMP) is a fundamental strategic document that guides the full range of fire management related activities to meet the needs for the Angeles National Forest. According to the FMP, all wildland fire suppression activities will provide for firefighter and public safety as the highest consideration while minimizing loss of resource values, economic expenditures, and/or the use of firefighting resources. Suppression of fires is aggressive and is to be conducted with the highest regard for human safety.

### **Angeles National Forest Land Management Plan**

The Forest Plan acknowledges one of the Forest Service's National Strategic Goals is to reduce the risk from catastrophic wildland fire. Along with this goal, one of the Forest Goals is to improve the ability of southern California communities to limit loss of life and property and recover from the high intensity wildland fires that are a natural part of this state's ecosystem (USDA Forest Service, 2005a).

According to the Forest Plan strategy, suppression of wildland fires is the first priority for program managers. Aggressive fire suppression and prevention strategies will be implemented near communities to achieve the objectives to protect life and property from wildland fire, subsequent floods, and debris flows (USDA Forest Service, 2005b).

#### **C.7.2.2 State**

##### **Applicable State Regulations and Codes**

Public Resources Code, Section 4292: Power Line Hazard Reduction Minimum Clearances. In mountainous land, forest-covered land, brush-covered land, or grass-covered land within State Responsibility Areas, any person that owns, controls, operates, or maintains any electrical transmission line shall maintain a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of pole or tower.

Code of Regulations Title 14, Section 1254, Minimum Clearance Provisions. Firebreak clearances required by RC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower. The radius of 10 feet is measured horizontally.

### C.7.2.3 Local

#### Los Angeles County General Plan

The Safety Element (December 1990), one of the required elements in the County of Los Angeles General Plan, is the policy document that outlines fire protection standards at the broader, more conceptual level. It serves as the policy framework for the later implementation of both short- and long- range emergency preparedness (Los Angeles County, 1990b).

Specific fire protection standards are set forth in the County Fire Code, which is the mechanism that implements the policies and goals outlined in the Safety Element. These fire protection standards regulate the construction, maintenance and operation of County-operated fire protection and suppression facilities as well as fire protection systems in private developments. In combination, the Safety Element and the Los Angeles County Fire Code address both the policy objectives and the implementation of fire protection standards for development projects within the County. Applicable to the proposed Project would be the County of Los Angeles Fire Department Transmission Line Guidelines. Per Section 1117.1 of the 1996 Los Angeles County Fire Code (County of Los Angeles, 1996):

##### 1117.1. Electrical Transmission Lines.

**1117.1.1. Support clearance.** Any person owning, controlling, operating or maintaining any electrical transmission or distribution line upon any mountainous, or forest, or brush-covered lands or land covered with flammable growth, shall, at all times, maintain around and adjacent to any pole supporting a switch, fuse, transformer, lightning arrester, or line junction, or dead end, or corner poles, or towers, or other poles or towers at which power company employees are likely to work most frequently, an effective firebreak, consisting of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower, provided, however that this provision shall not be deemed to apply to lines used exclusively as telephone, telegraph, telephone or telegraph messenger call, fire or alarm lines, or other lines classed as communication (Class C) circuits by the Public Utilities Commission of the State of California. Nor shall this provision apply to clearance around poles supporting only secondary electrical distribution lines of 750 volts or less. (Ord. 95-0063 § 70 (part), 1995.)

**1117.1.2. Line clearance.** Any person owning, controlling, operating or maintaining any electrical transmission or distribution line upon any mountainous, or forest, or brush-covered lands, or lands covered with flammable growth shall maintain a clearance of the respective distances hereinafter in this section specified in all directions between all vegetation and all conductors carrying electrical current.

- For lines operating at 2,400 volts or more, but less than 72,000 volts, four (4) feet;
- For lines operating at 72,000 volts or more, but less than 110,000 volts, six (6) feet; and
- For lines operating at 110,000 volts or more, ten (10) feet.

In any case, such distance shall be sufficiently great to furnish the required clearance from the particular wire or conductor at any position, of such wire or conductor at any temperature of 120 degrees Fahrenheit or less. Dead trees, old, decadent or rotten trees, those weakened by decay or disease and trees leaning toward the line, which may contact the line from the side or may fall on the line, shall be felled, cut or trimmed so as to remove the hazard. (Ord. 2003-0087 § 20, 2003; Ord. 2002-0080 § 54, 2002; Ord. 95-0063 § 70 (part), 1995.)

**1117.1.3. Self-supporting aerial cable.** No clearing to obtain line clearance is required when self-supporting aerial cable is used except that forked trees, leaning trees, and other growth which may fall across the cable and break it, shall be removed.

### **City of Santa Clarita General Plan: Safety Element**

The following goals and policies of the City of Santa Clarita General Plan are applicable to the proposed Project:

- Goal 5: To minimize potential damage and hazards resulting from fire.
  - Policy 5.1. Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development, and restrict access from development into the wilderness areas during periods of high fire risk.

### **City of Lancaster General Plan: Plan for Public Health and Safety**

The following goals and policies of the City of Lancaster General Plan are applicable to the proposed Project:

- Objective 4.7: Ensure that development occurs in a manner that minimizes the risk of structural and wildland fire.
  - Policy 4.7.3. Ensure that the design of new development minimizes the potential for fire.

### **C.7.2.4 Project Applicant**

#### **Southern California Edison Fire Prevention and Response Plan (FPRP)**

The SCE FPRP for the proposed Project applies primarily to portions of the proposed Project (and Alternatives) within the Angeles National Forest. Specific elements of the FPRP to implement fire prevention and suppression activities include:

#### **A. The Contractor shall:**

1. Immediately report all fires or emergencies to the Forest Dispatcher at (661) 723-7619 or call “911”.
2. Prevent all project personnel from setting open fires.
3. Prevent the escape of fires caused directly or indirectly as a result of project operations and extinguish all said fires. Report all fire occurrences to the Forest Dispatcher at (661) 723-7619.
4. Through the Engineer, obtain a Burning Permit from the USDA Forest Service for any burning, blasting, cutting, or welding work to be done and comply with its stipulations.

#### **B. Training**

The Contractor shall train all personnel about the measures to take in the event of a fire. The Contractor shall inform each crew member of fire dangers, locations of extinguishers and equipment, and individual responsibilities for fire prevention and suppression during safety briefings.

#### **C. Spark Arresters**

Except for motor trucks, truck tractors, buses and passenger vehicles, the Contractor shall equip all hydrocarbon-fueled engines, both stationary and mobile, including motorcycles with spark arresters that meet USDA Forest Service standards as specified in the Forest Service Spark Arrester Guide and shall maintain said arresters in good operating condition. Spark arresters are not required by the State Department of Forestry or the USDA Forest Service on equipment powered by properly maintained exhaust-driven turbo-charged engines, or when equipped with scrubbers with properly maintained water levels.

#### **D. Smoking and Fire Rules:**

1. Smoking shall not be permitted except inside of passenger vehicles, in barren areas, or in areas cleared to mineral soil at least 3 feet in diameter.
2. Smoking shall be prohibited while operating light or heavy equipment, or while walking or working in grass, brush, or woodlands.



3. The Contractor shall provide “butt cans” half-filled with sand or water for extinguishment of smoking materials within permitted smoking areas.
4. All toilets shall have a metal receptacle, at least 6 inches in diameter by 8 inches deep, half-filled with sand for ashes and discarded smokes, and within easy reach of anyone utilizing the facility.
5. The Contractor shall post signs regarding smoking and fire rules in conspicuous places for all employees to see. The Contractor’s supervisory personnel shall require compliance with these rules.

#### E. Storage and Parking Areas

All equipment service areas, parking areas, and gas and oil storage areas shall be located so that there is no flammable material within a radius of at least 50 feet of said area. Small mobile or stationary engine sites shall be cleared of flammable material for a radius of at least 15 feet from such engine. Such areas shall be approved in writing by the District Ranger’s Representative (DRR). Used and discarded oil filters, oily rags or waste, oils and other liquids shall be hauled away. Glass jugs or bottles shall not be used as containers for gasoline, oil or other flammable liquids except as water containers inside buildings or in cleared areas.

#### F. Gasoline Powered Tools

Forest Service-approved spark arresters are required on all gasoline powered tools (e.g., chainsaws, soil augers, generators, compressors, etc.). A size “0” round-pointed shovel and/or a 2-pound or larger, fully-charged fire extinguisher (ABC Class) shall be carried with each gasoline powered tool while it is operating. Gasoline and oil shall be carried only in safety cans.

Tools shall be placed in areas cleared of flammable material, both during and after use, so that hot mufflers cannot contact said flammable material. Chainsaw mufflers shall be kept clear of sawdust, oil, and litter. After a saw is filled with fuel, it shall be moved ten (10) feet before starting.

#### G. Road Closures

The Contractor shall notify the Angeles National Forest (ANF) of the scheduled road closures prior to work, unless a convenient detour can be established on existing roads. All bypasses shall be clearly marked by the Contractor. During road closures, the Contractor shall designate one person, who knows the bypass to direct traffic. The Contractor shall minimize, to the extent possible, the duration of road closures.

#### H. Fire Guard (Fire Patrol)

The Contractor shall designate a Fire Guard on each construction crew prior to the start of construction activities each day. The Fire Guard must be physically able, vigilant, and suitably trained to detect fires and use required fire-fighting equipment. The Contractor shall furnish a fire patrol with a filled 5-gallon backpack pump to prevent, detect, and suppress any fires in the operational area. The Fire Guard shall be responsible for maintaining contact with fire control agencies, and shall be equipped with a radio or cellular telephone, so immediate contact with ANF can be made. If cellular telephone coverage is not available, the Fire Guard shall use the Contractor’s frequency to contact their radio base, who will telephone ANF for emergency dispatch.

#### I. Fire Suppression Tools

The Contractor shall furnish each piece of equipment with the following:

1. One shovel, one axe, and one fully charged fire extinguisher UL rated at 4 B:C or more on each truck, personnel vehicle, tractor, grader, or other heavy equipment.
2. One shovel, one backpack 5-gallon water-filled tank with pump and/or one 5 pound fully-charged fire extinguisher (ABC Class) with each welder or cutting torch.

3. One shovel or one chemical pressurized fire extinguisher, fully-charged, for each gasoline powered tool, including but not limited to chain saws, soil augers, rock drills, etc. The required fire tools shall, at no time, be farther than 25 feet from the point of operation of said power tool. Fire extinguishers shall be of the type and size required by the California Public Resource Code Section 4431 and the California Administrative Code, Title 14, Section 1234.
4. All shovels shall be size "0" or larger and shall not be less than 46 inches in length.
5. Axes shall have 2-1/2 pound or larger heads and not be less than 28 inches overall in length.

#### J. Fire Suppression Equipment

The Contractor shall furnish a water tank truck or trailer which shall be located on or immediately adjacent to the project site and shall meet the following minimum specifications: contain at least 300 gallons of water; a combination straight stream-fog nozzle with 300 feet of one-inch fire hose, with no segment longer than 50 feet; fire hose with nozzle closed shall be capable of withstanding 200 psi pump pressure without leaking, slipping of couplings, distortions, or other failures; nozzle discharge rating of six to 20 gallons per minute; a pump capable of delivering 23 gallons per minute at 175 psi at sea level; power unit for pump shall have fuel for at least two hours operation, with ample transport available for immediate and safe movement of tank over roads serving the project area; and shall be in good working order; pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose tread.

#### K. Fire Activity Levels and Corresponding Minimum Work Restrictions

The contractor shall conform to the limitations or requirements of Project Activity Level obtained from Forest Service before starting work each day. If practicable, Forest Service will determine the following day's activity level by 4:00 p.m. each afternoon. Activity level may be changed at any time if, in the judgment of the Forest Service, fire danger is higher or lower than predicted and such change is consistent with forest management objectives. The decision to change the activity level, and when, and how to take weather observations for that purpose, are within the discretion of Forest Service.

### C.7.3 Significance Criteria

As noted earlier, the main concern related to Forest management activities in this section relates to fire suppression and prevention. The significance of a wildfire fire risk is determined by the probability of construction and operation of the Project hampering fire prevention and fire-fighting efforts or increasing exposure of people or property to fire hazards.

- Criterion FIRE1: Activities associated with Project are not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards.
- Criterion FIRE2: Activities associated with Project could cause a wildland fire, affecting Forest management activities.
- Criterion FIRE3: Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety.

### C.7.4 Applicant-Proposed Measures (APMs)

There are no APMs for reducing impacts to Forest management activities presented by SCE.

## C.7.5 Impact Analysis: Proposed Project/Action

### **Project activities not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards (Criterion FIRE1)**

To ensure that the proposed Project would adhere to all applicable federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards, the following consistency analysis is provided to compare the proposed Project with the applicable plans and policies stated above in Section C.7.2, Regulatory Framework:

#### **National Fire Plan, Forest Land Management Plan, and Forest Fire Management Plan**

There are no specific directions in the National Fire Plan, ANF Land Management Plan, or ANF Fire Management Plan to special use holders on their responsibilities for Forest management activities. A requirement in all Special Use Authorizations requires compliance with all federal, state, and local laws and regulations. Should the proposed Project be implemented, this would be a requirement in the Special Use Authorization issued to SCE. No impact would occur.

#### **California, Los Angeles County, City of Santa Clarita, and City of Lancaster Laws, Regulations, Goals and Policies**

The proposed Project would not introduce any construction components or operational activities in conflict with the applicable State Building Standards Laws and Regulations. The proposed Project would replace existing 66-kV facilities with the proposed 500-kV transmission line and would expand the Antelope Substation by installing four additional 220-kV line positions to the south of the substation and increasing its rating from 220 kV to 500 kV. SCE is required to adhere to all applicable fire safety and control regulations of the California Building Standards Laws during Project construction and design. Therefore, all activities associated with proposed Project would adhere to CDF Code, APA, California Building Standard Laws. SCE would also be required to comply with the State's Public Resources Code and Code of Regulations, LA County Fire Codes, and City of Santa Clarita and City of Lancaster Goals and Policies. This would be accomplished through regular vegetation clearance around the Project facilities (e.g., substation, transmission towers and conductor). No impact would occur.

### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

#### ***Impact F-1: Construction activities from the Project could start a wildfire.***

Construction activities within the ANF associated with the proposed Project would include, but not be limited to, use of large equipment for the construction of 58 towers, 1.7 miles of new road construction, maintenance of existing roads, welding, and habitat rehabilitation. The use of construction equipment such as generators, vehicles, or chainsaws could ignite vegetation or combustible material and start a wildland fire. Depending on the size of a wildfire caused by the Project's activities, this could substantially affect a variety of Forest management activities including, but not limited to, moving critical fire-fighting resources to this area and depleting these resources from other critical need areas. Implementation of SCE's FPRP, as described above, would reduce the fire hazard risk during proposed Project construction. As identified above in the SCE FPRP for the proposed Project, the Applicant would require the construction contractor to adhere to a number of restrictions, requirements, and activities to minimize the risk and severity of fire occurrences on NFS lands during construction activities. The FPRP, however, does not address all ANF fire prevention and suppression

concerns associated with construction of the proposed Project on NFS lands. Although the FPRP would reduce the risk and severity of wildland fires, the impacts to Forest management activities would be significant but with the implementation of Mitigation Measure F-1 (Develop a Fire Plan with the Forest Service) which would include additional fire suppression and prevention measures, impacts would be less-than-significant (**Class II**).

**F-1 Develop a Fire Plan with the Forest Service.** In consultation with the Forest Service Authorizing Officer (or delegated Forest officer) prior to construction, SCE shall develop a Fire Plan. This plan shall be attached to and become a part of the Special Use Authorization. The Fire Plan shall include fire prevention and suppression measures approved by the Forest Service. These measures shall be reviewed annually by the Forest Service and updated as appropriate.

***Impact F-2: Operation and maintenance activities from the Project could start a wildfire.***

When operational, the proposed Project would pose a potential fire risk if transmission lines were to contact vegetation or other potentially combustible materials due to heavy winds or vegetation growing up to the active transmission line. Routine maintenance could also cause a wildfire (e.g., a catalytic converter on maintenance trucks could ignite vegetation). Another potential threat of a wildland fire start from the Project would be caused by faulty equipment on the transmission system (e.g., improper or loose connections, as well as other incipient deterioration). As described above for Impact F-1, a wildfire started in this manner could affect Forest management activities and draw firefighting resources from other critical need areas. Although regular inspections and maintenance, as required by laws and regulations, would minimize this risk, impacts to Forest management activities could still be significant but could be mitigated to a less-than-significant level (**Class II**), through the implementation of Mitigation Measure F-2 (Develop an Operation and Maintenance Plan with the Forest Service), below. As a fire prevention measure, regular maintenance by SCE required by the Operation and Maintenance (O&M) Plan to vegetation in and around the transmission line route would ensure adequate and regular vegetation clearance. Other fire prevention and suppression measures in the O&M Plan would also decrease the risk of starting a wildfire during operation and maintenance activities. By complying with laws and regulations and implementation of Mitigation Measures F-2 (Develop an Operation and Maintenance Plan with the Forest Service) the impact would not be significant.

Additionally, the construction and/or improvement of approximately 9.7 miles of access roads and approximately 1.1 miles of spur roads within NFS lands would increase the potential for OHV trespass and other forest users such as hikers and campers entering into areas normally not accessed by vehicles or foot. The fuels associated with this area are flashy and receptive to any ignition source, particularly as this area has been previously inaccessible. As the new roads would increase potential interaction of people in a fire environment dominated with flashy fuels. This could increase the potential for fire starts by forest users in areas normally not accessed by them. Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads) in Section C.9.5.1 (Land Use and Public Recreation) would close and revegetate the access roads used during construction and would minimize this potential indirect adverse impact by obliterating these new access roads. Although 1.1 miles of new spur roads would remain after implementation of this mitigation measure, impacts would be significant (**Class II**), but would be reduced to a less-than-significant level with mitigation incorporated.

**F-2 Develop an Operation and Maintenance Plan with the Forest Service.** In consultation with the Forest Service Authorizing Officer (or delegated Forest officer) prior to construction, SCE shall develop an Operation and Maintenance (O&M) Plan. This plan shall be attached to and become a part of the Special Use Authorization. The O&M Plan shall include, at a minimum, road maintenance specifications, vegetation treatment and rehabilitation specifications, and conditions on

maintenance and replacement of improvements. These measures shall be reviewed annually by the Forest Service and updated as appropriate.

**Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

According to the Forest Plan and Fire Management Plan, suppression of wildland fires is the first priority for program managers. Aggressive fire suppression and prevention strategies would be implemented near communities to achieve the objectives to protect life and property from wildland fire, subsequent floods, and debris flows (USDA Forest Service, 2005b).

***Impact F-3: Construction activities could adversely affect aggressive fire suppression activities.***

The proposed Project route on NFS lands would follow the existing 66-kV transmission line, which is accessed by several unpaved roads approximately 16 feet wide, including Del Sur Ridge Road (6N18). Although the SCE FPRP for the proposed Project includes measures to allow emergency services access on these roads, construction activities could limit emergency vehicle access. When roads are temporarily closed, the FPRP states the contractor would notify the ANF of the scheduled road closures prior to work unless a convenient detour can be established. All bypasses would be clearly marked and should a wildland fire emergency occur the contractor would have a person directing traffic on the bypass. These bypasses may not be a direct route for ground fire suppression forces and could jeopardize the time to reach a wildland fire. If no bypasses are provided, it may take critical additional time for SCE to open the road for the ground fire suppression forces to reach a wildland fire. If adequate road access cannot be maintained within these areas as a result of construction activities, the access restriction could directly result in disruption of emergency services, which would be a significant impact. Impact F-3 would be reduced through the implementation of Mitigation Measure T-1a (Prepare Traffic Control Plans) from Section C.13 (Traffic and Transportation), which would ensure that emergency vehicle access would not be significantly affected during Project construction activities on NFS lands. This direct adverse impact would be short term and occur only during the construction period (up to 13 months). The impact is less than significant with this mitigation measure incorporated (**Class II**).

Should Mitigation Measure V-4a (Construct, Operate, and Maintain with Helicopters) from Section C.15 (Visual Resources) be implemented, helicopter use for SCE construction activities during fire season could conflict with aerial firefighting forces during a wildfire event. This could disrupt aerial fire suppression activities if fire staff members are unable to contact the SCE helicopters. As noted in Section C.7.1.2, as many as 20 fixed-wing and rotary-winged aircraft may be assigned to a large fire. Non-essential aircraft in the area could prevent aerial firefighting forces from accessing the wildfire quickly. By immediately ceasing SCE helicopter operations through Mitigation Measure F-3 (SCE helicopters shall cease activities in the event of fire), this adverse impact would be not be significant (**Class II**).

**F-3 Helicopters Shall Cease Activities in the Event of Fire.** SCE shall contact ANF dispatch seven days prior to helicopter use and shall provide ANF with radio frequencies being used by the aircraft, aircraft identifiers, the number of helicopters that will be used while working on NFS lands at any given time, and the flight pattern of helicopters used on NFS lands. Should a wildfire occur in the area, upon contact from the Forest Aviation Officer, helicopters in use by SCE shall immediately cease construction activities and not restart aerial operations until the Forest Aviation Officer provides clearance.

***Impact F-4: Project operation could adversely affect aggressive aerial fire suppression activities.***

Operation of the proposed Project could result in several long-term direct adverse impacts to fighting wildland fires aggressively. An important wildland fire suppression tactic is the use of aircraft such as air tankers and helicopters to suppress wildland fires. These aircraft are used for dropping water or other fire suppressants or retardant from the air. As noted in Section C.7.1.2, critical areas to make these drops are on ridge tops and fuelbreaks. The proposed Project would construct new towers two to three times taller (113-178 feet) than the existing 66-kV towers (60-73 feet) as shown in Figure B-2.4. The proposed Project route follows the ridge top and Del Sur Ridge Fuelbreak for approximately five miles. The increased height of the towers and conductors would increase the risk of firefighting aircraft or water buckets carried by helicopters colliding with the towers or transmission lines. The National Wildfire Coordinating Group Incident Response Pocket Guide (Guide) provides guidance on aerial and ground firefighting in the vicinity of transmission lines. The Guide directs aerial firefighting forces to avoid dropping water and retardant directly on lines and towers because it could cause lines to short out or arc if they are energized (National Wildfire Coordinating Group, 2006). If aerial drops must occur away from the ridge top and fuelbreak and into vegetation older than 20 years, as noted in Section C.7.1.1, it would be difficult to penetrate chaparral older than 20 years and water and retardant drops would be less effective. Therefore, the proposed transmission line would add complexity to firefighting operations and would require a change of tactics when using the ridge top and fuelbreak. With these limitations, an incident commander would have to change tactics when using the ridge top and fuelbreak and might not be able to fight the fire as aggressively as similar areas where no transmission lines are located. In addition, if aerial drops must occur away from the ridge top and fuelbreak and into vegetation older than 20 years, as noted in Section C.7.1.1, it would be difficult to penetrate chaparral older than 20 years and water and retardant drops would be less effective. The outcome could include additional burned acres and suppression costs. This would be considered a significant impact. Other than a relocation of the towers off the ridgeline, which Alternative 1, Alternative 2, and Alternative 5 analyze, there is no mitigation measure to decrease or avoid this significant adverse impact (**Class I**).

***Impact F-5: The Project would limit the ability of fixed-wing aircraft to fill up water tanks for aerial water drops.***

Transmission tower height would be an issue near Bouquet Reservoir where fixed-wing “Super Scooper” amphibious aircraft skim the reservoir to fill up water tanks for aerial water drops. The height of the new towers would increase the risk of collision and potentially restrict the use of these aircraft. The increased height of towers near Bouquet Canyon Reservoir would also be a significant adverse impact (**Class II**), but could be mitigated to be a less-than-significant level. Mitigation Measure F-5 (Site and Design Towers to Match Existing Height) would ensure that the towers near Bouquet Reservoir would be relocated and designed on a site near the reservoir dam where the tops of the towers would be no greater than the existing towers and would reduce this impact such that it would no longer be significant.

**F-5 Site and Design Towers to Match Existing Height.** New towers near Bouquet Canyon Reservoir shall be relocated and designed on sites near the reservoir dam where the tops of the towers would be no higher than those of the existing towers.

***Impact F-6: The Project would adversely affect ground firefighting activities and would create a hazard for firefighting personnel.***

As noted above, approximately five miles of the proposed Project route is located on or directly adjacent to a strategically important fuelbreak. With the proposed transmission line located on and adjacent to the fuelbreak,

ground firefighting resources would be at risk due to the potential for arcing from wildfire smoke particulates, water, and/or retardant if the line is energized. For ground firefighting in the vicinity of transmission lines, the Guide states that:

- Direct attack on a fire must be abandoned within 100 feet of transmission lines,
- Always maintain a minimum 35 feet distance from transmission towers,
- Never use straight stream or foam near transmission lines/towers,
- Staging areas and safety zones cannot be located under or near overhead transmission lines, and
- Minimize operation of heavy equipment under transmission lines (National Wildfire Coordinating Group, 2006).

Because of the risk of arcing, backfiring from Del Sur Ridge Fuelbreak would be unlikely. To minimize firefighter safety risk, the wildland fire may not be fought as aggressively as similar areas where no transmission lines are located. The outcome could include additional burned acres and suppression costs. Implementing Mitigation Measure F-6 would decrease this adverse affect to a less-than-significant level (**Class II**) because when the line is de-energized, the effect is instantaneous.

**F-6 De-energize the Transmission Line.** SCE shall provide ANF dispatch with a contact person (and 24-hour phone number) that has the authority to shut down the power and reroute it onto another transmission line. Prior to fire prevention or firefighting activities or during firefighting activities, when ANF feels continued power transmission on the proposed line will impact fire prevention activities, firefighter safety, or the ability to fight the fire aggressively, the ANF will contact SCE and SCE shall make every effort to immediately de-energize the transmission line. This shall be acknowledged through a Memorandum of Understanding between the ANF and SCE.

***Impact F-7: Project operation could adversely affect fire prevention activities.***

Smoke particles from a fire, water, fire retardant, and wire to wire contact can create electrical paths for a charge from an energized transmission line to the ground, resulting in an arc of electricity that could cause a fire. Because of the potential for arcing and safety measures, portions of Del Sur Ridge Fuelbreak maintenance and hazardous fuel treatment projects within or adjacent to the proposed Project area on NFS lands would not include the use of prescribed fire while the transmission line is energized. Prescribed fire is the most cost effective treatment method to treat hazardous fuels and fuelbreaks. Limiting vegetation treatment methods on and adjacent to Del Sur Ridge due to the location of the transmission line on the ridge would adversely affect fire prevention activities and would increase the costs to accomplish the work. This would be a significant impact, but implementation of Mitigation Measure F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF) would minimize the increased costs to the NFS as well as aiding in the protection of SCE's proposed improvements on Del Sur Ridge on NFS lands, reducing the impact to a less-than-significant level (**Class II**).

**F-7 SCE Shall Enter into a Fuelbreak Agreement with the ANF.** This agreement shall acknowledge that SCE will aid in the cost of and/or maintenance of the portions of Del Sur Ridge fuelbreak in locations where the proposed transmission line removed the option of using prescribed fire. These costs would involve the difference between prescribed fire and other maintenance options. The agreement shall acknowledge when sharing costs would not be appropriate (e.g., prescribed fire is an option for treatment). These shared costs and/or maintenance shall be for the life of the Special Use Authorization.

***Impact F-8: Project operation would adversely affect firefighter safety.***

One of the Forest's strategies in the Forest Plan is to improve firefighter safety (USDA Forest Service, 2005b). The Del Sur Ridge fuelbreak is an important factor in maintaining firefighting safety in this area of the Forest. Due to the need to use other fuel treatment methods that are more expensive than prescribed fire on the

fuelbreak, the proposed Project could result in maintenance of the fuelbreak becoming cost prohibitive. Because of this, the fuelbreak could be abandoned or require partial or longer treatment cycles. Although the effect would be indirect, this could jeopardize firefighter safety. Mitigation Measure F-5 (SCE Shall Enter into a Fuelbreak Agreement with the ANF) would ensure that any significant impacts (**Class II**) would be reduced to less-than-significant levels.

The proposed Project could also result in long-term adverse effects on the safety of firefighters on the ground working under or near the transmission lines. As discussed in Impacts F-6, F-7, and F-8, the Del Sur Ridge Fuelbreak is an important contributor to firefighting safety in this area of the Forest. Limiting the vegetation management of the Del Sur Ridge Fuelbreak would restrict the use of this firebreak and indirectly jeopardize firefighter safety by preventing access to safe zones. Firefighting in the vicinity of the transmission lines while the lines are energized would also jeopardize firefighter safety as smoke particulates and/or the use of water or retardant could cause arcing from the transmission lines. This impact would be significant, but with the implementation of Mitigation Measure F-6 (De-energize the Transmission Line) above, and Mitigation Measures F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) and F-8b (Provide Transmission Line Safety Training to ANF Staff) below, which would provide additional safety protection measures, impacts would be less than significant (**Class II**). By widening the fuelbreak, the ground firefighting resources could ensure they would be a safe distance from the transmission line during emergency wildfire events.

As described above in Impact F-4, the increased height of the transmission towers and lines under the proposed Project would increase the risk of aircraft or water buckets carried by helicopters colliding with transmission towers or lines. The potential for aircraft collisions with the proposed Project affects not only how wildfires are fought, but very directly affects the safety of aerial firefighter pilots. As described for Impact F-4, this is a significant impact for towers on ridge tops and other than relocating the towers off the ridgeline (as analyzed in Alternative 1, Alternative 2, and Alternative 5) there is no reasonable mitigation that can be recommended.

**F-8a SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak.** This agreement shall acknowledge that SCE will aid in the cost of construction and maintenance for widening the portions of Del Sur Ridge fuelbreak in locations where the proposed transmission line could adversely impact ground firefighter forces safety. These shared costs and/or maintenance shall be for the life of the Special Use Authorization.

**F-8b Provide Transmission Line Safety Training to ANF Staff.** SCE shall provide appropriate transmission line safety training to ANF staff prior to fire season on an annual basis.

***Impact F-9: Project operation would adversely affect community safety.***

One of the strategies of the Forest Plan is to improve public safety (USDA Forest Service, 2005b). As noted previously, because it would be more difficult to fight a fire aggressively both from the ground and air, the potential for a larger fire would be greater while the transmission line is energized. A wildfire in the area of the proposed Project could expand into Green Valley and Bouquet Canyon where cabins, homes, and other facilities are located, risking community safety. While this would be a significant impact, implementation of Mitigation Measures F-2 (Develop an Operation and Maintenance Plan with the Forest Service), F-3 (Helicopters Shall Cease Activity in the Event of Fire), F-6 (De-energize the Transmission Line), F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF), and F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) would reduce this potential impact, but the impact would remain significant (**Class I**).



## **C.7.6 Alternative 1 Partial Undergrounding of Antelope Pardee Transmission Line**

### **C.7.6.1 Alternative Description and Affected Environment**

Alternative 1 would place sections of the proposed 500-kV transmission line underground in specific high-impact segments of the proposed route. One of these sections would be between Mile 11.0 and Mile 15.0 along Del Sur Ridge Road in ANF and was designed specifically to improve fire defensibility, as well as to reduce visual impacts and avian collision effects. Alternative 1 would also deviate from the proposed Project route as an underground transmission line between Mile 22.7 and Mile 26.2 in the City of Santa Clarita. Consequently, while the route would be slightly different than the proposed Project, the jurisdictions potentially impacted by this alternative would be identical to those presented for the proposed Project in Section C.7.1, Affected Environment.

### **C.7.6.2 Impacts and Mitigation Measures**

#### **Project activities not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards (Criterion FIRE1)**

As noted earlier, the National Fire Plan, Forest Plan and Fire Management Plan do not provide specific directions to Special Use Holders on their responsibilities for Forest management activities. Impacts for Alternative 1 would be the same as described for the proposed Project. As with the proposed Project, Alternative 1 would require SCE through the Special Use authorization to comply with all federal, State, and local laws and regulations related to fire hazards on NFS lands. No impacts would occur.

#### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

As with the proposed Project, Alternative 1 construction activities on NFS lands (including the construction of 40 towers and construction and/or improvement of approximately 10.2 miles of access roads and approximately 3.1 miles of spur roads) could start a wildfire (Impact F-1). Because there would be four miles where heavy equipment would be used to construct and bury a portion of the transmission line on Del Sur Ridge and the access road would be upgraded to an all-weather road, the potential for the construction activities to cause a wildfire would be greater than the proposed Project. Equipment clearing vegetation, grading road and/or digging trenches could hit rock, causing sparks that could ignite vegetation or other combustible material. Implementation of SCE's FPRP and Mitigation Measure F-1 (Develop a Fire Plan with the Forest Service) would decrease the risk to less than significant (**Class II**) by ensuring appropriate fire suppression and prevention measures are in place.

Because Alternative 1 buries four miles of transmission line along Del Sur Ridge, the risk of operation and maintenance activities causing a wildfire (Impact F-2) under this alternative would be less than the proposed Project. The buried portion of conductor is encased in a concrete vault and surrounded by non-conductive, non-combustible fluid, preventing this section of line from causing a wildfire through arcing. The remainder of the overhead portion of the line would pose the same risk as the proposed Project. Consequently, impacts would be significant, but implementation of Mitigation Measure F-2 (Develop an Operation and Maintenance Plan with the Forest Service) would reduce the impact to a less-than-significant level (**Class II**) by ensuring adequate vegetation clearance occurs on the aboveground section of transmission line and fire prevention and suppression measures are in place. Routine inspections and maintenance of those portions of transmission line

above ground would also decrease the risk of a wildfire occurring from faulty equipment. Similar to the proposed Project, with construction and/or improvement of approximately 10.2 miles of access roads and approximately 3.1 miles of spur roads within NFS lands there would be the potential for OHV trespass and other forest users (e.g., hikers, campers) entering into areas normally not accessed by vehicle or foot. This could increase the potential for fire starts by forest users in areas normally not accessed by them. Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads) would reduce significant indirect impacts (**Class II**) to less-than-significant levels by obliterating these new access roads.

**Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

Because of the time needed for construction (i.e., 29 months) and the amount of construction needed, construction activities associated with Alternative 1 would result in adverse impacts to aggressive ground fire suppression activities during construction (Impact F-3). Work on the access road would include heavy maintenance and would likely cause temporary closures while it is upgraded to an all-weather road. Digging trenches on both sides of Del Sur Ridge Road for four miles would also delay emergency vehicle access into and beyond the construction area. This would be a significant impact, although the implementation of Mitigation Measure T-1a (Prepare Traffic Control Plans) from Section C.13 (Traffic and Transportation) would reduce any impacts to restricted emergency vehicle access to less-than-significant levels (**Class II**).

No visual resource mitigation measure for helicopter construction is proposed with this alternative; therefore, minimal aerial firefighting resources would be impacted. Helicopter use would be incidental and related to the removal of the 66-kV line improvements and one inaccessible 500-kV tower site. Consequently, impacts would not be significant (**Class III**). Mitigation Measure F-3 (SCE Helicopters Shall Cease Activities in the Event of Fire) is recommended to further reduce impacts by requiring SCE to contact ANF dispatch with appropriate information related to helicopter use on NFS lands. This measure would ensure no conflicts occur with aerial firefighting forces in the area.

Adverse impacts to aggressive fire suppression activities during operation (Impacts F-4, F-5, and F-6) would be largely alleviated by burying the transmission line in Alternative 1. Burying a portion of transmission line along the Del Sur Ridge would allow aerial and ground fire suppression resources to work largely unrestricted along four miles of this important strategic ridge top and fuelbreak. In this section of transmission line, most fire suppression resources would not be impacted by the Project. The removal of the 66-kV line would also aid in fire suppression activities on the ridge top. The access road to the project area would be continually maintained by SCE as an all-weather road. This higher standard of road would allow easier access to a wildfire within the project area.

Approximately two miles of aboveground transmission line would be located along the ridge top. The sections of ridge top impacted by the overhead line are approximately the first 0.5 miles west of Bouquet Reservoir and approximately 1.5 miles just south of Mile 15.0. Overhead lines in these areas would result in the same restrictions to firefighting activities as described for the proposed Project and would result in a significant impact. With the implementation of Mitigation Measure F-6 (De-energize the Transmission Line), impacts to ground firefighting resources by having SCE shut down power on the transmission line when there is an emergency need would not be significant (**Class II**).

The two miles of overhead transmission line would also adversely impact aerial firefighting resources due to the potential for collision. Impacts to aerial firefighting in this location would be the same as described for the proposed Project. The height of the new towers would increase the risk of collision and potentially restrict the

use of aircraft. This would be a significant adverse impact (**Class I**) for new towers on ridge tops. Other than a relocation of the towers off the ridgeline, such as analyzed in Alternative 5, there is no mitigation measure to decrease or avoid this significant impact. For the new towers near Bouquet Canyon Reservoir, however, this impact would be significant (**Class II**), but can be reduced to a less-than-significant impact with the implementation of Mitigation Measure F-5 (Site and Design Towers to Match Existing Height).

Operation of the buried transmission line under Alternative 1 would also alleviate some of the impacts to fire prevention activities (Impact F-7). Because vegetation growing on top of the four miles of buried transmission line would be restricted to low growing vegetation with shallow root systems, a portion of the fuelbreak (approximately 85 feet wide) would be maintained by SCE. Mechanical treatment for maintenance of the fuelbreak may be restricted to light-weight equipment to reduce the risk of damaging the buried lines but lower-cost prescribed fire could be used to maintain this section of fuelbreak. The four miles of buried transmission line would have a beneficial impact to fire prevention activities (**Class IV**) because fire treatment methods for the four miles of fuelbreak would be largely unrestricted and an 85-foot width of the same section of fuelbreak would be maintained by SCE.

Alternative 1 would still locate two miles of aboveground transmission line along the ridge top. While the transmission line is energized, prescribed fire treatment methods would not be allowed in these areas. This would be an adverse impact to fire prevention activities in these locations due to the inability to utilize the lower cost prescribed fire treatment method for that portion of fuelbreak. While this would be significant, implementation of Mitigation Measures F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF) would reduce the impact to less-than-significant levels (**Class II**) by having SCE aid in the cost of maintaining the two miles of fuelbreak impacted by the above-ground lines.

By burying four miles of the transmission line along Del Sur Ridge, Alternative 1 would decrease the adverse affect to firefighter and community safety (Impacts F-8 and F-9). A wildland fire could be fought aggressively above the buried lines with no risk of aerial collision with project improvements and arcing for ground firefighting resources. This buried section of four-mile line would have a beneficial indirect impact to firefighter and community safety (**Class IV**).

In the two miles of overhead transmission line on ridge tops, Alternative 1 would have an adverse indirect effect to safety for both firefighter (ground and aerial) resources and nearby communities. The inability to fight fires aggressively both from the ground and air along this portion of ridge top/fuelbreak would likely increase the fire perimeter towards and/or into a nearby community. If it is critical to utilize these sections of fuelbreak and ridge top, the ground firefighting resources risk the potential for the transmission line arcing and the aircraft (and/or buckets) risk the potential for collision into the towers and/or lines. This would be a significant impact. Implementation of Mitigation Measures F-6 (De-energize the Transmission Line) and F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) would reduce the adverse impacts to firefighting resources to a less-than-significant level (**Class II**) by widening the two miles of fuelbreak at SCE's cost and de-energizing the line to allow ground fire suppression forces on the ridgetop without risk to safety from arcing. For the new towers on ridge tops, there is no known mitigation measure to decrease or avoid aerial firefighter collision safety adverse impacts along these two miles of above ground power line along fuelbreak/ridge top and these impacts would be significant (**Class I**).

## **C.7.7 Alternative 2 Antelope-Pardee East Mid-Slope**

### **C.7.7.1 Alternative Description and Affected Environment**

This alternative would generally follow the proposed Project route, but would relocate most of the towers off the top of the Del Sur Ridge, placing the ROW on the east side of the ridge facing Bouquet Canyon in order to reduce visual impacts and avian collisions as well as to improve conditions for fire suppression. The route followed by Alternative 2 would differ only within a portion of the ANF. Consequently, while the route would be slightly different than the proposed Project, the jurisdictions potentially impacted by this alternative would be identical to those presented for the proposed Project in Section C.7.1 (Affected Environment).

### **C.7.6.2 Impacts and Mitigation Measures**

#### **Project activities not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards (Criterion FIRE1)**

As noted earlier, the National Fire Plan, Forest Plan and Fire Management Plan do not provide specific directions to Special Use Holders on their responsibilities for Forest management activities. As with the proposed Project, Alternative 2 would require SCE to comply with all federal, State, and local laws and regulations related to fire hazards on NFS lands through the Special Use Authorization. No impacts would occur.

#### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

As with the proposed Project, construction activities on NFS lands (including the construction of 66 towers construction and/or improvement of approximately 10.4 miles of access roads and approximately 0.3 miles of spur roads), could start a wildfire (Impact F-1). Alternative 2 proposes constructing 37 towers using helicopters without road access. Should a fire start at these 37 tower sites from construction activities, initial fire suppression activities by SCE and/or contractors would be difficult to access with water trucks. This would increase the risk of wildfires occurring from construction activities associated with Alternative 2. In addition, the 29 towers that would be accessed by roads would have similar risks as the proposed Project. Implementation of SCE's FPRP and Mitigation Measure F-1 (Develop a Fire Plan with the Forest Service) would reduce the fire hazard risk to less than significant (**Class II**) by ensuring appropriate fire suppression and prevention measures are in place.

Because 37 towers would be located mid-slope without road access for this alternative, routine inspections during operation and maintenance activities would be more difficult, take more time, and could potentially increase risks of starting wildfires (Impact F-2). While accessing the mid-slope facilities for operation and maintenance could be difficult, the impacts associated with operation and maintenance activities would be the largely same as the proposed Project. If SCE does not complete appropriate inspections and maintenance due to difficulties accessing the facilities, there would be an increased risk for a wildfire start from the improvements (either through vegetation causing arcing or faulty equipment starting a fire). Because SCE is required to comply with regulations requiring routine inspection and maintenance, this potential is unlikely. Even on portions of the alternative route that are easily accessible, impacts would be significant, but with the implementation of Mitigation Measure F-2 (Develop an Operation and Maintenance Plan with the Forest Service) to ensure adequate vegetation clearance, impacts would be reduced to a less-than-significant level (**Class II**). With construction and/or improvement of approximately 10.4 miles of access roads and

approximately 0.3 miles of spur roads within NFS lands there would be the potential for OHV trespass and other forest users (e.g., hikers, campers) entering into areas normally not accessed by vehicle or foot. This could increase the potential for fire starts by forest users in areas normally not accessed by them. Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads) would reduce significant indirect impacts (**Class II**) to less-than-significant levels by obliterating these new access roads.

**Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

The amount of vehicle traffic, road construction and maintenance, and location of access would be similar to the proposed Project; therefore, impacts from construction on (Impact F-3) fire suppression activities would be similar. The construction activity period for Alternative 2 would be 14 months (one month longer than the proposed Project). Because no direct construction activities would occur on Del Sur Ridge, it would be unlikely Del Sur Ridge Road would be temporarily closed due to construction activities. Although impacts would be less than described for the proposed Project, impacts would be significant (**Class II**), but the implementation of Mitigation Measure T-1a (Prepare Traffic Control Plans) from Section C.13 (Traffic and Transportation) reduce impacts to less-than-significant levels by ensuring that emergency vehicle access would not be substantially affected during construction.

Helicopters would be used extensively to construct the mid-slope towers and could substantially disrupt aerial firefighting resources in the area. Impacts would be the same type as described for the proposed Project and would be significant, but implementation of Mitigation Measure F-3 (SCE Helicopters Shall Cease Activities in the Event of Fire) would decrease the impact to less-than-significant levels (**Class II**) by allowing the Forest Aviation Officer to immediately cease SCE operations that could affect aerial fire fighting resources.

One of the purposes of Alternative 2 is to keep the transmission line away from the Del Sur Ridge and Fuelbreak and reduce the impact of Project operation on aggressive fire suppression activities (Impact F-4). Because the Alternative 2 route would be located away from this strategic firefighting location, this alternative would not adversely restrict ground and aerial firefighting resource tactics on the ridge top. Both ground and aerial firefighting resources could aggressively fight fire along this important strategic location. The proposed line would be located far enough away from the ridge top to not risk the safety of ground fire suppression resources on the ridge top/fuelbreak from the lines arcing horizontally towards them. Along with the removal of the 66-kV line, which would remove a potential collision hazard for aerial firefighting resources (Impact F-5), this alternative would result in a beneficial impact to aggressive fire suppression activities along the Del Sur Ridge/Fuelbreak (**Class IV**).

Should a fire start mid-slope, in or adjacent to the proposed transmission line, ground firefighting resources would not take a direct approach to fighting the fire due to the safety risk of the line arcing if the transmission line were energized. Under these conditions, ground firefighting resources would likely wait for the fire to reach the ridge to fight the mid-slope fire. This would be a significant impact, but implementing Mitigation Measures F-6 (De-energize the Transmission Line) and F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) would directly and indirectly decrease the impact to a less-than-significant level (**Class II**) by cutting power to allow immediate access for the firefighters without the risk to safety and decreasing the risk of losing the fire once it reaches the ridge top.

As Alternative 2 would located the transmission line off the ridge top, this alternative would not adversely affect fire prevention activities (Impact F-7). Fire prevention activities could be performed unrestricted under

this alternative. The proposed transmission line would be located mid-slope and would not affect the maintenance of Del Sur Ridge Fuelbreak. No impacts would occur and no mitigation is recommended.

By routing the 500-kV transmission line mid-slope away from the strategically critical Del Sur Ridge and Fuelbreak, Alternative 2 would reduce operational impacts to firefighter and community safety (Impacts F-8 and F-9). Firefighters (both ground and aerial) would not have safety issues fighting the fire from this site. The removal of the 66-kV line would also reduce the safety issue of potential collisions with the aircraft and/or buckets with the towers and/or lines. Along this important fire suppression strategic ridge, Alternative 2 would have a beneficial impact to firefighter safety (**Class IV**).

As noted in Impact F-6, however, should a fire start mid-slope in or adjacent to the transmission line, direct ground fire suppression tactics would not occur due to the safety risk of arcing if the transmission line is still energized. Because of this, there would be the potential with fires occurring mid-slope in the project area growing larger than if the transmission line was not located there. This would be a significant impact, but implementation of Mitigation Measures F-6 (De-energize the Transmission Line) F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) and F-8b (Provide Transmission Line Safety Training to ANF Staff) would directly and indirectly decrease the impact to less-than-significant levels (**Class II**). Cutting power to the transmission lines would allow immediate access for the firefighters without risking their safety and improves the potential for firefighters to contain the fire once it reaches the ridge top. Providing training to fire staff on how to work around transmission lines safely would also help reduce risks to firefighters.

If the wildfire were burning east (due to westerly winds), there would be no ground suppression tactic between the mid-slope fire and the structures located in Bouquet Canyon. Because portions of the alternative are less than half a mile from Bouquet Canyon Road, should a fire occur mid-slope in or adjacent to the proposed transmission line and the winds are blowing westerly, the adverse impact to safety for Bouquet Canyon would be significant. Depending on wind speeds, Mitigation Measure F-6 (De-energize the Transmission Line) would decrease this community safety concern, but if the wind speeds are high and the fire is moving quickly, the time to shut down the transmission line would not mitigate this concern. Mitigation Measure F-8b (Provide Transmission Line Safety Training to ANF Staff) would aid in educating fire staff on what they could safely accomplish during fire suppression efforts to minimize the risk. Depending on the weather conditions, community safety concerns in Bouquet Canyon would still be significant (**Class I**). No mitigation can be recommended to mitigate this impact such that it would not be significant.

## **C.7.8 Alternative 3: Antelope-Pardee Single-Circuit 500-kV Towers between Haskell Canyon and Pardee Substation**

### **C.7.8.1 Alternative Description and Affected Environment**

This alternative is a minor variation of the proposed Project and would include constructing single-circuit 500-kV towers between Haskell Canyon and the Pardee Substation (Mile 20.3 to 25.6), rather than constructing double-circuit 500-kV towers and removing the existing single-circuit 500-kV towers. The route followed by Alternative 3 would be the same as the proposed Project route. Therefore, the affected public service agencies potentially impacted by this alternative would be identical to those presented for the proposed Project in Section C.7.1 (Affected Environment).

### C.7.8.2 Impacts and Mitigation Measures

#### **Activities associated with Project activities are not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to fire hazards (Criterion FIRE1)**

As noted earlier, the National Fire Plan, Forest Plan and Fire Management Plan do not provide specific directions to Special Use holders on their responsibilities for Forest management activities. As with the proposed Project, Alternative 3 would require SCE to comply with all federal, State, and local laws and regulations related to fire hazards on NFS lands through the Special Use authorization. No impacts would occur.

#### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

Construction activities for Alternative 3 would be the same as described for the proposed Project and would have the same potential to start a wildfire (Impact F-1). Construction equipment or personnel could ignite vegetation or other combustible material and start a wildland fire. Although SCE has proposed the FPRP to reduce the risk and severity of fire occurrences, it would not reduce impacts to a less-than-significant level. Impacts would be significant, but with the implementation of Mitigation Measure F-1 (Develop a Fire Plan with the Forest Service) impacts would not be significant (**Class II**).

Operation of Alternative 3 would also be the same as described for the proposed Project and would have the same potential to start a wildfire (Impact F-2). Operation and routine maintenance have the potential to ignite a wildfire. Regular inspections and maintenance would minimize the risk of wildfire, but impacts would still be significant. Implementation of Mitigation Measure F-2 (Develop an Operation and Maintenance Plan with the Forest Service) would reduce impacts to less-than-significant levels (**Class II**). Similar to the proposed Project, with construction and/or improvement of approximately 9.7 miles of access roads and approximately 1.1 miles of spur roads within NFS lands there would be the potential for OHV trespass and other forest users (e.g., hikers, campers) entering into areas normally not accessed by vehicle or foot. This could increase the potential for fire starts by forest users in areas normally not accessed by them. Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads) would reduce significant indirect impacts (**Class II**) to less-than-significant levels by obliterating these new access roads.

#### **Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

As construction activities under Alternative 3 would be the same as for the proposed Project, the impacts of construction on aggressive fire suppression activities would be the same (Impact F-3). Construction could restrict access by emergency vehicles, resulting in a significant impact that could be mitigated to be a less-than-significant level (**Class II**) with the implementation of Mitigation Measure T-1a (Prepare Traffic Control Plans) from Section C.13 (Traffic and Transportation). Helicopter construction could also disrupt aerial fire suppression activities if a wildfire event occurred during construction. This would be a significant impact, but with the implementation of Mitigation Measure F-3 (SCE Helicopters Shall Cease Activities in the Event of Fire) these impacts would not be significant (**Class II**).

Operation of Alternative 3 would also be the same as the proposed Project and so would also have the same operational impacts on aggressive fire suppression activities (Impacts F-4, F-5, and F-6). The increased height of the transmission towers and lines would increase the risk of aircraft collision during firefighting activities,

resulting in a significant impact for the new towers on ridge tops (**Class I**) for which there is no mitigation. For the new towers near Bouquet Canyon Reservoir, however, this impact would be significant (**Class II**), but can be reduced to a less-than-significant impact with the implementation of Mitigation Measure F-5 (Site and Design Towers to Match Existing Height). Aerial water and fire retardant drops and ground firefighting would also be substantially hindered by the transmission lines if they are energized during a wildfire event. While this would be a significant impact, implementation of Mitigation Measure F-6 (De-energize the Transmission Line) would remove many of the restrictions to firefighting and so would reduce impacts to less-than-significant levels (**Class II**).

As operation of Alternative 3 would be the same as the proposed Project, it would have the same operational impacts on fire prevention activities (Impact F-7). Prescribed fires would not be allowed under energized transmission lines, reducing the effectiveness and increasing the cost of fire prevention activities. This would be a significant impact, but implementation of Mitigation Measure F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF) would minimize the increased costs to the NFS for other fuel treatments and impacts would not be significant (**Class II**).

Operation of Alternative 3 would also impact firefighter and community safety in the same way as the proposed Project (Impacts F-8 and F-9). The increased height of transmission towers would create additional safety risks for aerial firefighters due to increased risk of collision. This would be a significant impact (**Class I**) that has no mitigation for towers on ridge tops. Energized transmission lines would also create safety hazards for firefighters on the ground. Jeopardizing firefighter safety with risk of smoke particles, water, or retardant causing arcing would be a significant impact, but implementation of Mitigation Measures F-6 (De-energize the Transmission Line), F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF), F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) and F-8b (Provide Transmission Line Safety Training to ANF Staff) impacts would not be significant (**Class II**). Additionally, if firefighters were unable to aggressively fight a fire due to the transmission line being energized, the communities in Green Valley and Bouquet Canyon would be jeopardized. While this would be a significant impact, implementation of Mitigation Measures F-2 (Develop an Operation and Maintenance Plan with the Forest Service), F-3 (Helicopters Shall Cease Activity in the Event of Fire), F-4b (De-energize the Transmission Line), F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF), and F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) would reduce the potential impact, but would not make the impact less than significant (**Class I**).

## **C.7.9 Alternative 4: Antelope-Pardee Re-Routing of New Right-of-Way along Haskell Canyon**

### **C.7.9.1 Alternative Description and Affected Environment**

This alternative would follow the proposed Project route until approximately Mile 18.6, north of Haskell Canyon Road. At this point, the transmission line would proceed in a southerly direction as the proposed Project route shifts to the west-southwest. Traveling in a new ROW on NFS lands within the ANF, the transmission line would continue in a southerly direction for approximately 1.3 miles, crossing approximately 0.3 miles of private land in-holdings (non-NFS), before leaving the ANF. Once leaving the Forest, the transmission line would again proceed in a southerly direction before entering the existing Pardee-Vincent 500-kV ROW, where it would head west and rejoin the proposed Project route at approximately Mile 20.6 (proposed Project Mile 20.3). The route followed by Alternative 4 would be located within the same jurisdictions as proposed Project described in Section C.7.1 (Affected Environment).



### C.7.9.2 Impacts and Mitigation Measures

#### **Activities associated with Project activities are not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to fire hazards (Criterion FIRE1)**

As noted earlier, the National Fire Plan, Forest Plan and Fire Management Plan do not provide specific directions to Special Use holders on their responsibilities for Forest management activities. As with the proposed Project, Alternative 4 would require SCE to comply with all federal, State, and local laws and regulations related to fire hazards on NFS lands through the Special Use authorization. No impacts would occur.

#### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

Construction activities for Alternative 4 would be the same as described for the proposed Project and would have the same potential to start a wildfire (Impact F-1). Construction equipment or personnel could ignite vegetation or other combustible material and start a wildland fire. Although SCE has proposed the FPRP to reduce the risk and severity of fire occurrences, it would not reduce impacts to a less-than-significant level. Impacts would be significant, but with the implementation of Mitigation Measure F-1 (Develop a Fire Plan with the Forest Service) impacts would not be significant (**Class II**).

Operation of Alternative 4 would also be the same as described for the proposed Project and would have the same potential to start a wildfire (Impact F-2). Operation and routine maintenance have the potential to ignite a wildfire. Regular inspections and maintenance would minimize the risk of wildfire, but impacts would still be significant. Implementation of Mitigation Measure F-2 (Develop an Operation and Maintenance Plan with the Forest Service) would reduce impacts to less-than-significant levels (**Class II**). Similar to the proposed Project, with construction and/or improvement of approximately 9.6 miles of access roads and approximately 1.5 miles of spur roads within NFS lands there would be the potential for OHV trespass and other forest users (e.g., hikers, campers) entering into areas normally not accessed by vehicle or foot. This could increase the potential for fire starts by forest users in areas normally not accessed by them. Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads) would reduce significant indirect impacts (**Class II**) to less-than-significant levels by obliterating these new access roads.

#### **Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

As construction activities under Alternative 4 would be the same as for the proposed Project, the impacts of construction on aggressive fire suppression activities would be the same (Impact F-3). Construction could restrict access by emergency vehicles, resulting in a significant impact that could be mitigated to be less-than-significant (**Class II**) with the implementation of Mitigation Measure T-1a (Prepare Traffic Control Plans) from Section C.13 (Traffic and Transportation). Helicopter construction could also disrupt aerial fire suppression activities if a wildfire event occurred during construction. This would be a significant impact, but with the implementation of Mitigation Measure F-3 (SCE Helicopters Shall Cease Activities in the Event of Fire) these impacts would not be significant (**Class II**).

Operation of Alternative 4 would also be the same as the proposed Project and so would also have the same operational impacts on aggressive fire suppression activities (Impacts F-4, F-5, and F-6). The increased height of the transmission towers and lines would increase the risk of aircraft collision during firefighting activities,

resulting in a significant impact for the new towers on ridge tops (**Class I**) for which there is no mitigation. For the new towers near Bouquet Canyon Reservoir, however, this impact would be significant, but can be reduced to a less-than-significant impact with the implementation of Mitigation Measure F-5 (Site and Design Towers to Match Existing Height) (**Class II**). Aerial water and fire retardant drops and ground firefighting would also be substantially hindered by the transmission lines if they are energized during a wildfire event. While this would be a significant impact, implementation of Mitigation Measure F-6 (De-energize the Transmission Line) would remove many of the restrictions to firefighting and so would reduce impacts to less-than-significant levels (**Class II**).

As operation of Alternative 4 would be the same as the proposed Project, it would have the same operational impacts on fire prevention activities (Impact F-7). Prescribed fires would not be allowed under energized transmission lines, reducing the effectiveness and increasing the cost of fire prevention activities. This would be a significant impact, but with the implementation of Mitigation Measure F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF) would minimize the increased costs to the NFS for other fuel treatments and impacts would not be significant (**Class II**).

Operation of Alternative 4 would also impact firefighter and community safety in the same way as the proposed Project. The increased height of transmission towers would create additional safety risks for aerial firefighters due to increased risk of collision. This would be a significant impact (**Class I**) that has no mitigation for the new towers on ridge tops. Energized transmission lines would also create safety hazards for firefighters on the ground. Jeopardizing firefighter safety with risk of smoke particles, water, or retardant causing arcing would be a significant impact, but implementation of Mitigation Measures F-6 (De-energize the Transmission Line), F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF), F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) and F-8b (Provide Transmission Line Safety Training to ANF Staff) impacts would not be significant (**Class II**). Additionally, if firefighters were unable to aggressively fight a fire due to the transmission line being energized, the communities in Green Valley and Bouquet Canyon would be jeopardized. While this would be a significant impact, implementation of Mitigation Measures F-2 (Develop an Operation and Maintenance Plan with the Forest Service), F-3 (Helicopters Shall Cease Activity in the Event of Fire), F-6 (De-energize the Transmission Line), F-7 (SCE Shall Enter into a Fuelbreak Agreement with the ANF), and F-8a (SCE Shall Enter into an Agreement with the ANF to Widen the Del Sur Ridge Fuelbreak) would reduce the potential impact, but would not make the impact less than significant (**Class I**).

## **C.7.10 Alternative 5: Antelope-Pardee Sierra-Pelona Re-Route**

### **C.7.10.1 Alternative Description and Affected Environment**

As shown in Figure B.4-13, this alternative would provide for a completely overhead 500-kV transmission line, routed south from Antelope Substation to the Pardee Substation via the existing Pardee-Vincent corridor. Alternative 5 would involve the construction of an entirely separate route from the proposed Project. The alternative would begin at Antelope Substation, and would traverse the land under the jurisdiction of the BLM; the Cities of Lancaster, Palmdale, and Santa Clarita; and the unincorporated communities of Leona Valley, Agua Dulce, Forrest Park, and Bouquet Canyon in Los Angeles County. All of these cities and communities contract Los Angeles County Fire Department for their fire protection services.

### **C.7.10.2 Impacts and Mitigation Measures**

#### **Project activities not able to adhere to federal, State, and/or local laws, regulations, and/or standards relating to Forest management activities and fire hazards (Criterion FIRE1)**

As noted earlier, the National Fire Plan, Forest Plan and Fire Management Plan do not provide specific directions to Special Use holders on their responsibilities for Forest management activities. As with the proposed Project, Alternative 5 would require SCE to comply with all federal, State, and local laws and regulations related to fire hazards on NFS lands through the Special Use authorization. No impacts would occur.

#### **Activities associated with Project could cause a wildland fire, affecting Forest management activities (Criterion FIRE2)**

The potential for construction activities associated with Alternative 5 to start a wildfire on NFS lands is low relative to the rest of the alternative route (Impact F-1) as only 1.5 miles of the route would be on NFS lands compared to 35.7 miles of the route traversing non-NFS lands. However, this alternative would have the highest risk for activities to start a wildfire on non-NFS lands which could then enter into the ANF. Consequently, impacts would be significant, but by implementing SCE's FPRP and Mitigation Measures F-1 (Develop a Fire Plan with the Forest Service) and P-1 (Expansion of the Southern California Edison Fire Prevention and Response Plan) as described in C.11 (Public Services), fire suppression and prevention protection measures would reduce this potential impact of a fire start due to construction activities to a less-than-significant level (**Class II**).

Similar to Impact F-1 under Criterion FIRE2, the potential for operation and maintenance activities to start a fire on NFS lands would be low relative to the entirety of the route, but the risk for activities to start a wildfire on non-NFS lands and then enter into ANF would be the highest for this alternative (Impact F-2). Almost half the transmission line (18.4 miles) would be located in an existing utility corridor where three transmission lines are presently located. Operation and maintenance activities in this portion of line would be simpler and could occur for all the existing lines in the corridor at the same time. The remaining portion of transmission line (18.8 miles) would be located in a new ROW. As with the proposed Project and all the project alternatives, there would be a risk of operation and maintenance activities causing a wildfire. Impacts would be significant, but with the implementation of Mitigation Measures F-2 (Develop an Operation and Maintenance Plan with the Forest Service) and compliance with State and local laws and regulations related to transmission line maintenance impacts would be reduced to a less-than-significant level (**Class II**).

#### **Activities associated with the Project would adversely affect fire suppression activities, fire prevention activities, and firefighter and community safety (Criterion FIRE3)**

Because only four percent of the transmission line for Alternative 5 is located on NFS lands, construction activities would have a minimal adverse impact to fire suppression activities (Impact F-3) on the ANF (and would not have an adverse affect on other Forest management activities on the ANF). Construction activities from this alternative would not likely affect ground wildland fire suppression resources because access to the Forest would not be restricted by these activities. No helicopter construction is proposed as a part of the alternative, but is proposed as a part of visual mitigation. Although none of the towers constructed by helicopter would be on NFS lands, due to the proximity of this alternative to NFS lands, wildland fire aerial resources could be impacted by the construction activities. Impacts would be the same type as described for the proposed Project and would be significant, but implementation of Mitigation Measure F-3 (SCE Helicopters

Shall Cease Activities in the Event of Fire) would decrease the impact to less-than-significant levels (**Class II**) by allowing the Forest Aviation Officer to immediately cease SCE operations that could affect aerial fire fighting resources.

The proposed transmission line route for Alternative 5 does not follow strategic fire suppression locations and would not likely impact aggressive aerial or ground fire suppression activities during a wildfire event (Impacts F-4, F-5, and F-6). This alternative would also remove the existing 66-kV line from Del Sur Ridge and Fuelbreak, which would have a beneficial impact to aerial fire suppression resources (**Class IV**) by removing the collision hazard from this strategically important fire suppression site. The Alternative 5 route would be located near proposed future housing development areas adjacent to the ANF. Should a wildfire occur and travel into these developments, the proposed tower heights could restrict aerial firefighting resources next to the transmission line in these developed areas in the same way as discussed for the proposed Project. No mitigation measures are known to reduce the impact to a less-than-significant level (**Class I**).

Alternative 5 would not adversely affect fire prevention activities (Impact F-7) along the transmission line route. The proposed transmission line would be located away from any fuelbreaks located on the ANF. Removal of the 66-kV line through NFS lands would also eliminate SCE's maintenance of vegetation around and under this transmission corridor. The benefit of SCE maintaining the roads and fuelbreak on Del Sur Ridge would be lost with this alternative, but ANF would be able to conduct prescribed fires and other fuel treatment methods along the 66-kV corridor. Consequently, there would be no net impact and no mitigation is recommended.

Operation of Alternative 5 would affect firefighter and community safety in different ways (Impacts F-8 and F-9). Because the majority of Alternative 5 is located away from the ANF, operation of the transmission line would not adversely affect ground firefighter safety and would benefit aerial firefighter safety by removing the 66-kV line from Del Sur Ridge/Fuelbreak (**Class IV**). The proposed line is not located in strategic wildland fire fighting areas (i.e., ridge tops and fuelbreaks), and all but 1.5 miles is located off NFS lands. Removal of the 66-kV line would remove the potential for aerial collision with the aircraft and water buckets carried by helicopters and the line and/or towers.

As noted above under Criterion FIRE3 for Impact F-4, Alternative 5 could affect community safety where the proposed transmission line is located. The route would be located near proposed future housing development adjacent to the ANF and should a wildfire occur and travel through these developments, the proposed tower heights could restrict aerial firefighting resources next to the line. Impacts would be significant (**Class I**) and no mitigation is proposed.

### **C.7.11 No Project/Action Alternative**

Because the No Action Alternative does not propose any activities, this alternative would have no affect on adhering to federal, State, and/or local laws, regulations and/or standards relating to Forest management activities and fire hazards. The No Action Alternative would have no construction or operating activities; therefore, there would be no risk for a wildland fire occurring from the alternative.

The existing 66-kV transmission line and towers would continue to exist with the No Action Alternative and though the existing towers are one half to one third the height of the proposed 500-kV towers in the proposed Project, Alternatives 3, and 4, the 66-kV line and towers would still pose a risk for collision with aerial fire suppression resources. Because the 66-kV line is sometimes used by SCE, there would be ground fire suppression resources would be restricted in their activities, but this would be the same as current conditions. No impacts would occur.

## C.7.12 Impact and Mitigation Summary

Table C.7-1 presents a summary of the impacts and proposed mitigation measures for Forest Management Activities.

Impact	Impact Significance					
	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
F-1: Construction activities from the Project could start a wildfire.	Class II F-1	Class II F-1	Class II F-1	Class II F-1	Class II F-1	Class II F-1, P-1***
F-2: Operation and maintenance activities from the Project could start a wildfire.	Class II F-2, R-4*	Class II F-2, R-4*	Class II F-2, R-4*	Class II F-2, R-4*	Class II F-2, R-4*	Class II F-2
F-3: Construction activities could adversely affect aggressive fire suppression activities.	Class II T-1a**, F-3	Class II T-1a**, F-3	Class II T-1a**, F-3	Class II T-1a**, F-3	Class II T-1a**, F-3	No impact F-3
F-4: Project operation could adversely affect aggressive aerial fire suppression activities.	Class I None	Class I None	Class II None	Class I None	Class I None	Class I None
F-5: The Project would limit the ability of fixed-wing aircraft to fill up water tanks for aerial water drops.	Class II F-5	Class II F-5	Class II F-5	Class II F-5	Class II F-5	Class IV None
F-6: The Project would adversely affect ground firefighting activities and would create a hazard for firefighting personnel.	Class II F-6	Class II F-6	Class II F-6	Class II F-6	Class II F-6	Class II F-6
F-7: Project operation could adversely affect fire prevention activities.	Class II F-7	Class II F-7	No impact None	Class II F-7	Class II F-7	No impact None
F-8: Project operation could adversely affect firefighter safety.	Class II F-6, F-8a, F-8b	Class II F-6, F-8a, F-8b	Class II F-6, F-8a, F-8b	Class II F-6, F-8a, F-8b	Class II F-6, F-8a, F-8b	Class IV None
F-9: Project operation could adversely affect community safety.	Class I None	Class I None	Class I F-6, F-8b	Class I None	Class I None	Class I None

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.

\* Please see Section C.9.5, Land Use, Proposed Project/Action, Mitigation Measure R-4 (Permanent Closure and Re-vegetation of Construction Roads).

\*\* Please see Section C.13.5, Traffic and Transportation, Proposed Project/Action, Mitigation Measure T-1a (Prepare Traffic Control Plans).

\*\*\*Please see Section C.11.5, Public Services, Proposed Project/Action, Mitigation Measure P-1 (Expansion of the SCE Fire Prevention and Response Plan).

## C.7.13 Cumulative Effects

### C.7.13.1 Geographic Scope

The geographic extent for the analysis of cumulative impacts related to Forest management activities (specifically fire suppression and prevention) is the western “island” of the ANF and adjacent areas of Los Angeles County. This is defined as the geographic extent of the cumulative impact area because of the fire history in the area related to fire size and how a wildland fire could affect NFS lands, adjacent wildland areas, and the threat of fire to nearby urbanized areas. Fires originating in the ANF can readily spread to nearby cities and unincorporated areas of Los Angeles County, just as fires originating near the ANF can readily migrate to NFS lands under the right conditions.

### C.7.13.2 Existing Cumulative Conditions

Past development and population growth within the cities of Santa Clarita, Palmdale, and Lancaster and in adjacent unincorporated areas have expanded the potential for human-caused ignition of fires and have resulted

in large populations residing within or adjacent to wildland fire hazard areas. As the population has increased through the direct and indirect influences of development, fire safety hazards have also increased. The growing population near the boundaries of the ANF has also resulted in increased use of the ANF lands for public recreation, resulting in an increased potential for accidental ignition of fires by Forest visitors. While public fire fighting capabilities have increased over time in response to population growth, the size of the population and the number of properties that could be harmed by fires has also increased. As a result, the adverse consequences of a damaging fire are greater than ever and the potential impacts of wildland fires are cumulatively considerable. Existing fire hazards and available resources for fire suppression are described in Section C.7.1, Affected Environment.

### C.7.13.3 Cumulative Impact Analysis

Past, present, and reasonably foreseeable projects (or impacts) that are within the area of consideration and are included in this cumulative impact analysis are:

- Wildland fire locations within the past 5 years (Figure C.7-1),
- Fuelbreak network (Figure C.7-2) including the proposed maintenance of the fuelbreak known as Leona Divide South, recreation use (e.g., OHV, hunting, hiking, picnicking, camping, recreation residences in Bouquet Canyon),
- Other special uses (e.g. transmission lines (LADWP, PGE/SCE), annual recreation events on the access roads),
- Other LADWP facilities in San Francisquito Canyon and Bouquet Reservoir,
- Site seers and commuters traveling along Bouquet Canyon and San Francisquito Roads and communities existing and proposed in and around the project area (e.g. Antelope Valley, Santa Clarita, Bouquet Canyon).

In addition to these projects, fire fighting capability from the ANF is beginning to decrease due to decreased funding levels.

The potential for the utilities and service systems impacts of the proposed Project described in Sections C.14.5 through C.14.11 to combine with the effects of other past, present, and reasonably foreseeable projects within the geographic scope of the cumulative analysis are described below.

- **Construction activities from the Project could start a wildfire (Impact F-1).** As noted in Section C.7.1.2 (Fire Histories and Characteristics), over 85 percent of fires started on the ANF between 1970 and 1999 were caused by human activity. With the growing populations in the communities in the area of consideration, increased recreation use in the project area would be likely. In addition to past growth in the area surrounding the ANF, the following ongoing and proposed projects in the area would combine to further increase recreation use.
  - Meadow Peak Project
  - Copper Hill Project
  - North Park
  - Tesoro del Valley
  - Somerset Ridge
  - Anaverde/Remington Project
  - Burnham Property
  - Royal Equestrian Estates
  - Country Colony Estates
  - North Valencia II
  - Baywood Lane Apartments
  - Sonrisa Residential
  - Riverpark Project
  - Town Center Mall Project
  - Synergy “The Keystone” Project
  - Porta Bella
  - Center Pointe Residential Project
  - Newhall Land Residential Project
  - Jules Swimmer Residential Project
  - Henry Mayo Hospital Master Plan
  - Golden Triangle Apartment Complex
  - Penlon Residential Project
  - Centex Golden Valley Road Residential Project
  - Ritter Ranch Community Plan
  - City Ranch Specific Plan
  - Joshua Ranch Residential Development, and
  - 61 unnamed residential projects.

This part of the Forest historically experiences most of the wildfires in the ANF. Considering all cumulative projects, including the proposed Project, fire starts would likely increase. 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**). As this significant impact is affected by all the adjacent communities in northern Los Angeles County, no reasonable mitigation can be recommended.

- **Operation and maintenance activities from the Project could start a wildfire (Impact F-2).** Similar to the Cumulative Impact Analysis of Impact F-1, fire starts from the operation and maintenance of the proposed Project and all of the alternatives would combine with increased recreation use by a growing population in adjacent communities to result in a cumulatively significant impact (**Class I**). As this significant impact is affected by all the adjacent communities in northern Los Angeles County, no feasible mitigation can be recommended.
- **Construction activities could adversely affect aggressive fire suppression activities (Impact F-3).** Although the past, ongoing, and proposed projects listed in Tables B.5-1 (Cumulative Projects List: Approved and Pending Projects within Five Miles of the Proposed Project Route) and B.5-2 (Cumulative Scenario: Notable Approved and Pending Projects Greater Than Five Miles from the Proposed Project) would substantially increase the recreation use of the NFS lands, none of the projects would construct new facilities on NFS lands. Due to the site-specific nature of the proposed Project and all of the alternatives, these projects would not combine with the proposed Project or the alternatives to significantly impact aggressive fire suppression activities. However, 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. The impact of Alternative 2 would be less than significant (**Class III**) and Alternative 5 would result in a beneficial impact (**Class IV**) as the majority of improvements would be located off NFS lands and the existing 66-kV line would be removed, allowing for continued maintenance of the surrounding fuelbreak network on NFS lands.
- **Project operation could adversely affect aggressive aerial fire suppression activities (Impact F-4).** As described above for the Cumulative Impact Analysis of Impact F-3, none of the past, ongoing, and proposed projects listed in Tables B.5-1 (Cumulative Projects List: Approved and Pending Projects within Five Miles of the Proposed Project Route) and B.5-2 (Cumulative Scenario: Notable Approved and Pending Projects Greater Than Five Miles from the Proposed Project) would locate facilities within NFS lands and so would not cumulatively combine with the operation and maintenance of the proposed Project or any of the alternatives to significantly impact aggressive fire suppression activities. 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. The cumulative impact of Alternative 2 would not be significant (**Class III**) as existing 66-kV line would be removed, allowing for continued maintenance of the surrounding fuelbreak network on NFS lands.
- **The Project would limit the ability of fixed-wing aircraft to fill up water tanks for aerial water drops (Impact F-5).** Similar to Impact F-4 above, any limitations on the ability of aerial tankers to utilize Bouquet Reservoir to fill their tanks would hinder the ability to aggressively fight wildland fires from the air. For the proposed Project and Alternatives 1 through 4, this impact can be mitigated to a less-than-significant level and, therefore, there would be no adverse cumulative effect associated with this impact. For Alternative 5, the removal of the existing 66-kV towers at the edge of the Reservoir would be a beneficial effect and would not create adverse cumulative effects.
- **The Project would adversely affect ground firefighting activities and would create a hazard for firefighting personnel (Impact F-6).** Approximately five miles of the proposed Project route is located on or directly adjacent to the important Del Sur Ridge Fuelbreak. With the proposed transmission line located on and adjacent to the fuelbreak, ground firefighting resources would be at risk due to the potential for arcing if the line is energized,

which could prevent backfiring along the fuelbreak. Since no other projects are planned that would place additional restrictions on backfiring along the Del Sur Ridge Fuelbreak, no cumulative impacts are anticipated. However, if similar restrictions occur in the future along other important fuelbreaks, the cumulative effect on the ability to aggressively fight wildland fires could be significant and could result in more acres being burned.

- **Project operation could adversely affect fire prevention activities (Impact F-7).** As described above for the Cumulative Impact Analysis of Impact F-3 and Impact F-4, none of the past, ongoing, and proposed projects listed in Tables B.5-1 (Cumulative Projects List: Approved and Pending Projects within Five Miles of the Proposed Project Route) and B.5-2 (Cumulative Scenario: Notable Approved and Pending Projects Greater Than Five Miles from the Proposed Project) would locate facilities within NFS lands and so would not cumulatively combine with the operation of the proposed Project or any of the alternatives to significantly impact fire prevention activities. Similar to the discussion of the proposed Project on fire suppression activities, 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, 4, and 5 would be significant (**Class I**) and unavoidable. Alternatives 2 and 5 would not contribute to cumulative impacts related to fire prevention.
- **Project operation could adversely affect firefighter safety (Impact F-8).** The increased community development as described above for the Cumulative Impact Analysis of Impact F-1 and potential decrease in ANF fire staffing would have a significant cumulative adverse effect on firefighter safety. The communities surrounding ANF are at risk for wildfire occurring. Increased community growth would increase the safety risk for firefighting forces attempting to suppress wildfires in these areas. This risk, with or without the project, to safety would vary dependent on where the fire start occurs and weather patterns at the time. Impacts would be significant (**Class I**) with no recommended mitigation.

For the proposed Project, Alternative 3, and Alternative 4, the cumulative adverse impact to the safety of wildland firefighters would be particularly high because of the proposed transmission line location on Del Sur Ridge.

- **Project operation could adversely affect community safety (Impact F-9).** The communities surrounding ANF are at risk for wildfire occurring. Increased community growth would increase the safety risk for these communities. This risk, with or without the project, to safety would vary dependent 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.

For the proposed Project and Alternatives 3 and 4, the cumulative adverse impact to the safety for communities in the area would be particularly high because of the proposed transmission line location on Del Sur Ridge.

Alternative 5 could also have particularly high adverse cumulative impacts on those proposed homes adjacent to the proposed line (due to the inability for aerial fire suppression resources to drop water and/or retardant on and adjacent to the homes alongside the transmission line).

#### C.7.13.4 Cumulative Effects on National Forest System Lands

As all of the impacts analyzed in this section specifically address impacts to National Forest System lands, the cumulative effects on NFS lands are those described above in Section C.7.13.3, Cumulative Impact Analysis.