

3 Environmental Impacts and Mitigation Measures

3.1 Introduction to the Environmental Analysis

Impact Assessment Methodology. The analysis of environmental impacts is based upon the environmental setting for each resource/issue and the manner in which the construction, operation, and maintenance of the proposed Project or alternatives would affect the environmental setting and related resource conditions. In accordance with CEQA and NEPA requirements and guidelines, the impact assessment methodology also considers the following three topics: (1) the regulatory setting, and evaluates whether the proposed Project or alternatives would be consistent with adopted federal, State, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts. Regulatory compliance issues and cumulative impacts are discussed in each resource/issue area. However, the discussion of growth-inducing is included within Chapter 5 (Other Required NEPA and CEQA Considerations) of the EIR/EIS. The EIR/EIS analysis is organized according to the following major technical issue area categories:

- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Environmental Contamination and Hazards
- Geology, Soils, and Paleontology
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services and Utilities
- Traffic and Transportation
- Visual Resources
- Wilderness and Recreation
- Wildfire Prevention and Suppression
- Electrical Interference and Hazards

In a number of instances, SCE has proposed measures to reduce impacts to potentially affected resources or areas. These types of actions are termed “Applicant-Proposed Measures (APMs)” in the EIR/EIS and are considered in the impact assessment as part of SCE’s proposed Project description. As such, these measures are different from CEQA/NEPA mitigation measures, described below.

Mitigation Measures. The EIR/EIS describes feasible measures that could minimize significant adverse impacts (State CEQA Guidelines §15126.4, and CEQ Regulations 40 CFR 1502.16h). Within each issue/resource area, mitigation measures are recommended where environmental effects could be substantially minimized. The recommended mitigation measures are described in the impact assessment sections of the EIR/EIS.

The major findings of the EIR/EIS analysis are summarized below according to issue/resource area. Regulatory issues pertinent to each resource are identified, along with a summary of the significant impacts that would be expected from the construction and operation of the proposed Project. Comparative effects of the alternatives are discussed in Section 5 of this document.

3.2 Agricultural Resources

Section 3.2 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to agricultural resources. A summary of the effects on agricultural resources is presented below.

3.2.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, impacts associated with the proposed Project and alternatives, as described in the following sections, would not occur. As a result, the No Project/Action Alternative would have no impact to agricultural resources.

However, in the absence of the proposed Project or project alternative, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet the power transmission needs and, consequently, would likely result in impacts to agricultural resources similar to, or in addition to, those resulting from the proposed Project and alternatives.

Cumulative Impacts

Under Alternative 1, no impacts to agricultural resources associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution, resulting in similar activities that would temporarily or permanently preclude the agricultural use of established Farmland.

3.2.2 Alternative 2: SCE’s Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE’s proposed Project, would result in the following significant direct and indirect effects on agricultural resources:

- Construction activities would temporarily or permanently preclude the agricultural use of established Farmland. The Project would traverse 9.08 miles of Farmland, including 7.98 miles of Prime Farmland, 0.92 miles of Unique Farmland, and 0.18 miles of Farmland of Statewide Importance. In total, 44 transmission towers, 10 stringing and pulling areas, and roughly three miles of new roads would be installed on designated Farmland. In total, approximately 54.75 acres of Farmland would be temporarily converted to non-agricultural uses during construction activities.

Mitigation. The measure proposed to reduce this impact is as follows: Coordination of construction activities with agricultural landowners, and coordination of operation and maintenance activities with agricultural landowners.

- Construction activities or operation and maintenance activities would temporarily or permanently interfere with agricultural operations. Temporary disruption of agricultural operations would be expected to occur as a result of the presence and use of heavy equipment such as road graders, dozers, excavators, and trucks. Such temporary disruption of activities could occur through damage to crops or soil, restriction of access to certain fields or plots of land, obstruction of farm vehicles, or disruption to drainage and irrigation systems; any such effects would have the potential to result in temporarily reduced agricultural productivity. In addition, operation and maintenance of Alternative 2 would result in the presence of transmission tower structures and wire as well as permanent spur roads, which would interfere with agricultural operations along the Project route.

Mitigation. The measure proposed to reduce this impact is as follows: Coordination of construction activities with agricultural landowners, and coordination of operation and maintenance activities with agricultural landowners.

Implementation of the proposed Project would also have minor impacts related to agricultural resources. Operation and maintenance of the proposed transmission line would result in 5.83 acres of Farmland being permanently converted to non-agricultural uses; however, this total area is less than the minimum area of ten acres necessary for sustainable agriculture and such conversion of land use is therefore not considered to be significant.

Cumulative Impacts

As discussed in Section 3.2 of the EIR/EIS, development in the Northern and Southern Regions of the proposed Project area is rapid and ongoing. Other projects in the Cumulative Scenario (including past, present, and future) introduce impacts to agricultural resources that are similar to the impacts described above. Mitigation which includes coordination with agricultural landowners for all phases of Project construction, operation, and maintenance would help to reduce project impacts, but would not prevent such impacts from combining with past, present, and reasonably foreseeable future projects. All agricultural resources impacts identified under Alternative 2 would be cumulatively considerable and, with consideration of other projects in the cumulative scenario, most agricultural resources impacts would be significant and unavoidable. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.2.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

This alternative introduces a re-route of part of the proposed transmission line in northern Los Angeles County, but the re-route would not cross any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, effects of Alternative 3 on the preclusion of Farmland from being used for agricultural purposes would be the same as Alternative 2.

Although this alternative would not traverse any more Farmland than the proposed Project, the Alternative 3 re-route would traverse an additional 0.4 miles of grazing land than Alternative 2; as a result, impacts to grazing land would be slightly greater for Alternative 3. All other effects of Alternative 3 to agricultural resources would be the same as described for Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 3 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of the proposed Project transmission line associated with Alternative 3 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.2.4 Alternative 4: Chino Hills Route Alternatives

Direct and Indirect Impacts

Impacts associated with the conversion of Farmland to non-agricultural uses for Alternative 4 would be similar to the impacts associated with Alternative 2, although the impacts to Farmland along Segments 8A, 8B, and 8C would be absent in Alternative 4. Routes A, B, C, and D would traverse grazing land, but would not cross any Farmland so impacts would be the same for each of the routes. Consequently, the impacts of Alternative 4 on Farmland would be the same as the impacts on Segments 4 and 5 under Alternative 2. In Farmland traversed by Segments 4 and 5, 24 transmission towers would be constructed, 8 stringing and pulling areas would be cleared, and approximately 2.13 miles of access and spur road would be graded. Construction of access and spur roads, transmission towers, and stringing and pulling sites would temporarily convert a total of approximately 33.07 acres of Farmland to non-agricultural uses.

Interference with agricultural operations resulting from construction activities or from operation and maintenance of Alternative 4 would be similar to Alternative 2, but instead of traversing 19.94 miles of agricultural land under Segments 8A, 8B, and 8C, Alternative 4 would instead cross grazing land as shown below for each re-route:

- Route A – 1.66 miles of grazing land
- Route B – 4.25 miles of grazing land
- Route C – 8.8 miles of grazing land
- Route D – 5.22 miles of grazing land

Additionally, each of these routes would affect between 4 and 12 acres of grazing land for installation and use of the switching station. All other impacts would be the same as described for Alternative 2. Route A would result in the least agricultural land disrupted, Route B would have the next most agricultural land disrupted, Route D would have second-most agricultural land disrupted, and Route C would have the most agricultural land disrupted.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 4 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The

minor re-route of the proposed Project transmission line associated with Alternative 4 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 4 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.2.5 Alternative 5: Partial Underground Alternative

Alternative 5 would be the same as the proposed Project, with the exception that the line would be installed underground for approximately four miles through Chino Hills, between MP 21.9 and 25.4 of Segment 8A.

Direct and Indirect Impacts

The impacts of Alternative 5 on Farmland would be the same as Alternative 2. Construction of access and spur roads, T/L towers, and stringing and pulling sites would temporarily convert a total of approximately 54.75 acres of Farmland to non-agricultural uses.

Interference with agricultural operations resulting from construction activities or from operation of Alternative 5 would be similar to Alternative 2, but instead of traversing 19.94 miles of agricultural land under Segment 8A, Alternative 5 would instead cross approximately 19.04 miles of agricultural land. Additionally, boring at the Western Transition Station would affect approximately 1.84 acres of grazing land for installation and use of the station.

All other impacts would be the same as described for Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 5 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 5 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 5 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.2.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The proposed route for this alternative is exactly the same as that of Alternative 2. Under Alternative 6, helicopter staging and landing areas would be required within the ANF to facilitate helicopter construction, but such areas would not affect the setting for agricultural resources; there are no agricultural resources within the ANF.

Direct and Indirect Impacts

All potential effects and impacts of Alternative 6 on Farmland and agricultural uses would be exactly the same as described for Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 6 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of the proposed Project transmission line associated with Alternative 6 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 6 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.2.7 Alternative 7: 66-kV Subtransmission Alternative

The proposed route for this alternative is exactly the same as that of Alternative 2, with the only change to the Project being the inclusion of three 66-kV subtransmission lines. Under Alternative 7, 66-kV subtransmission lines would be constructed in Segment 7 and the western portion of Segment 8A, but such areas would not affect the setting for agricultural resources; there are no agricultural resources within these areas.

Direct and Indirect Impacts

All potential effects and impacts of Alternative 7 on Farmland and agricultural uses would be exactly the same as described for Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 7 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The construction of 66-kV subtransmission lines in addition to construction of the proposed Project transmission line associated with Alternative 7 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 7 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.3 Air Quality

Section 3.3 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to Air Quality. A summary of the effects on air quality is presented below.

3.3.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, impacts associated with the proposed Project and alternatives, as described in the following sections, would not occur. As a result, the No Project/Action Alternative would have no impact to air quality.

However, in the absence of the proposed Project or project alternative, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet the power transmission needs and, consequently, would likely result in impacts to air quality similar to, or in addition to, those resulting from the proposed Project and alternatives.

Cumulative Impacts

Under Alternative 1, no impacts to air quality associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution, resulting in similar activities that would most likely exceed the South Coast Air Quality Management District (SCAQMD), Antelope Valley Air Quality Management District (AVAQMD), and Kern County Air Pollution Control District (KCAPCD) regional emission thresholds.

3.3.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on air quality:

- Construction emissions would exceed the SCAQMD, AVAQMD, and KCAPCD regional emission thresholds. The use of construction equipment and vehicles during the expected construction period between July 2009 and November 2013 would result in both on-site and off-site air quality impacts. On-site air quality impacts would result from activities such as surface clearing, excavation, tower foundation construction, tower steel construction, power cable stringing, and substation upgrades (among other possible activities), while off-site air quality impacts would result from activities such as construction-related haul trips, construction worker commuting, and helicopter usage.

Mitigation. Measures proposed to reduce these impacts include: (1) Implementation of a fugitive dust control plan during construction activities; (2) Compliance with off-road diesel-fueled equipment standards; (3) Minimization of construction-related vehicle traffic and equipment use; (4) Equipment standards for heavy duty diesel haul vehicles; (5) Equipment standards for on-road construction vehicles (including passenger cars); (6) Proper maintenance of mechanical equipment; (7) Restriction of engine idling to five minutes or less; (8) Deliveries scheduled outside of peak traffic areas; (9) Off-road gasoline-fueled equipment standards; and (10) Reduction of helicopter emissions.

- Construction of the Project would cause localized emissions above the SCAQMD Localized Significance Thresholds (LSTs), including after mitigation, and would expose sensitive receptors such as residences and schools to substantial pollutant concentrations.

Mitigation. The measure proposed to reduce this impact is as follows: Implementation of a fugitive dust control plan during construction activities.

- The Project would cause annual emissions that exceed the General Conformity *de minimus* thresholds. Because the Project's estimated emissions have been determined to be above the General Conformity applicability thresholds, a complete conformity analysis would be required by statute and approved before the Record of Decision (ROD) is approved for this Project.

Mitigation. Measures proposed to reduce these impacts include: (1) Implementation of a fugitive dust control plan during construction activities; and (2) General Conformity emission offset mitigation.

- The Project would not conform to Angeles National Forest air quality strategies, including the following: AIR 1 (Minimize Smoke and Dust) and AIR 2 (Forest Air Quality Emissions). The AIR 1 strategy generally addresses fugitive dust control, as related to human health, safety, and the moderation or elimination of environmental impacts. The AIR 2 strategy relates to providing an air quality inventory for

prescribed burns and wildfires and therefore does not directly relate to the proposed Project's construction and operation emissions.

Mitigation. Measures proposed to reduce these impacts include: (1) Implementation of a fugitive dust control plan during construction activities; (2) Compliance with off-road diesel-fueled equipment standards; (3) Minimization of construction-related vehicle traffic and equipment use; (4) Equipment standards for heavy duty diesel haul vehicles; (5) Equipment standards for on-road construction vehicles (including passenger cars); (6) Proper maintenance of mechanical equipment; (7) Restriction of engine idling to five minutes or less; (8) Deliveries scheduled outside of peak traffic areas; (9) Off-road gasoline-fueled equipment standards; and (10) Reduction of helicopter emissions.

- Construction of the Project would result in emissions that would not be in full compliance with the requirements of all applicable federal, State, and local Air Quality Management Plans. (Emissions resulting from operation and maintenance activities would be minimal).

Mitigation. Measures proposed to reduce these impacts include: (1) Implementation of a fugitive dust control plan during construction activities; (2) Compliance with off-road diesel-fueled equipment standards; and (3) Equipment standards for heavy duty diesel haul vehicles.

Implementation of the Project would also have air quality impacts that would be less than significant. For example, operation and maintenance of the Project would not result in significant direct operational emissions within any affected jurisdiction, including the SCAQMD, AVAQMD, and KCAPCD. Therefore, the operational direct impacts of the Project would not conflict with any air quality management plan, and the Project's direct operations would not have a significant impact on any affected jurisdiction. Furthermore, indirect Project operational impacts would create beneficial impacts due to a substantial indirect emission decrease and an overall emissions decrease associated with operation of the Project.

Activities associated with operation and maintenance of the Project would not cause localized emissions above the SCAQMD LST thresholds and would not have a significant effect on local sensitive receptors such as schools and residences.

Construction or operation and maintenance of the Project would not generate toxic air contaminant emissions that would exceed SCAQMD risk thresholds. The Project covers a very large area and does not generate large quantities of emissions at any one site (such as a major stationary source). In addition, the Project would not generate large quantities of toxic air contaminants, with the potential exception of diesel particulate matter.

Construction equipment and construction operations (such as the potential for some small areas of asphalt paving), as well as the use of certain equipment types during operation and maintenance activities, may create mildly objectionable odors. However, this would be temporary and would not affect a substantial number of people.

Demand for electricity would not change as a result of the Project, and power generated by power plants in response to the demand would occur at some location regardless of whether the Project is approved or disapproved. In this way, by increasing the use of renewable energy and improving the distribution efficiency of the California transmission grid, the proposed Project would partially implement one of the key strategies of the Intergovernmental Panel on Climate Change (IPCC) for mitigating climate change. Additionally, the Project's purpose would implement key strategies for mitigating climate change proposed by the California Energy Commission and the IPCC to improve transmission and increase

renewable energy use. Therefore, the Project would provide a beneficial impact for Greenhouse Gas (GHG) emissions.

Cumulative Impacts

In addition to the proposed Project, other projects in the Cumulative Scenario (including past, present, and future projects) also introduce air quality impacts that are similar to the impacts described above. Mitigation such as described above would reduce impacts somewhat. However, when combined with past, present, and reasonably foreseeable future projects in the area, cumulative air quality impacts of the proposed Project would be considerable and unavoidable.

In addition, some of the air quality impacts described in Section 3.3 of the EIR/EIS are strictly applicable to single project evaluation and would not contribute to the cumulative scenario. As such, cumulative effects would not occur with regard to the following: General Conformity Rules; ANF Air Quality Strategies; and conformity with applicable Air Quality Management Plans.

3.3.3 Alternative 3: West Lancaster Alternative

This alternative would deviate from the proposed Project route along Segment 4, at approximately S4 MP 14.9, where the new 500-kV transmission line would turn south down 115th Street West for approximately 2.9 miles and turn east for approximately 0.5 mile, rejoining the proposed route at S4 MP 17.9. This re-route would increase the overall distance of Segment 4 by approximately 0.4 mile. This alternative remains within the same local air district jurisdictions, air basins, and SCAQMD SRAs as the proposed Project; the affected regional environment under Alternative 3 is the same as under the proposed Project.

Direct and Indirect Impacts

This alternative's construction methods do not change from those described for Alternative 2. The proposed route for this alternative does not change from that of Alternative 2 within the KCAPCD or SCAQMD jurisdictions; therefore, the construction emissions for this alternative only differ within the AVAQMD jurisdiction, where one fewer transmission tower would be required and the overall length of the transmission line would increase by 0.4 mile. The maximum daily construction emissions for this very minor route change are identical to that assumed for the proposed Project. Annual emissions are identical to that estimated for the proposed Project for every year other than 2010. Air quality impacts would be the same under Alternative 3 as under the proposed Project.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize air quality impacts. No additional mitigation is recommended.

Cumulative Impacts

Air quality impacts associated with Alternative 3 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of the proposed Project transmission line associated with Alternative 3 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.3.4 Alternative 4: Chino Hills Route Alternatives

This alternative is identical to the proposed Project for all Segments except Segment 8. The route would deviate from the proposed Project beginning approximately 0.6 mile east of Tonner Canyon Road or two miles east of State Route 57 along Segment 8A. The proposed routes for Alternative 4 would cross through parts of Orange County, which Alternative 2 would not enter, and San Bernardino County. The routing options for Alternative 4 would also cross through the Chino Hills State Park (CHSP).

Direct and Indirect Impacts

This set of four route alternatives remains within the same local air district jurisdictions and air basins as Alternative 2. However, these transmission route alternatives cover one more SCAQMD SRA (16 – North Orange County) than Alternative 2. This alternative's construction methods do not change from those described for Alternative 2. The proposed route for this alternative does not change from that of the proposed Project within the KCAPCD or AVAQMD jurisdictions; therefore, the construction emissions for this alternative would only deviate from those for Alternative 2 within the SCAQMD jurisdiction.

The maximum daily construction emissions for this route change alternative are assumed to be identical, with no additional overlapping construction activities, to that assumed for the proposed Project. Annual emissions are identical to that estimated for the proposed Project for every year other than 2010, 2011, and 2012. Any differences in emissions between Alternative 4 and the proposed Project are described in detail in Sections 2 and 3.3 of the EIR/EIS.

Mitigation described above for the proposed Project would also be required under Alternative 4, in order to minimize air quality impacts. No additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 4 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of the proposed Project transmission line associated with Alternative 4 would not differ from the proposed Project's contribution to cumulative impacts. Therefore, cumulative impacts of Alternative 4 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.3.5 Alternative 5: Partial Underground Alternative

The proposed route for Alternative 5 would be the same as the proposed Project, with the exception that the line would be installed underground for approximately 3.5 miles through Chino Hills, between MP 21.9 and 25.4 of Segment 8A. This underground portion of the line is within SRA 33.

Direct and Indirect Impacts

Due to the underground construction methods utilized under Alternative 5, this alternative introduces completely different construction methods (compared to the proposed Project). The proposed route for this alternative does not change from that of the proposed Project within the KCAPCD or AVAQMD jurisdictions. However, the maximum daily construction emissions and annual emissions for this alternative are different from Alternative 2 in the SCAQMD jurisdiction. This difference is due to the fact that Alternative 5 would require the construction of 3.5 miles of underground facilities (within SRA 33), and it would decrease the number of new towers by fifteen. Despite the Project differences between Alternative 2 and Alternative 5, air quality impacts are expected to generally be the same. Any differences in construction emissions expected under Alternative 5 are described in detail in Section 2 of the EIR/EIS.

Implementation of all mitigation measures described above for Alternative 2 is also recommended under Alternative 5. Additionally, the following mitigation measures which specifically address underground construction activities are recommended: (1) Minimization of tunnel waste trip distances; and (2) Tunnel waste truck capacity with total effective capacity of 20 cubic yards. As mentioned, these mitigation measures specifically address underground construction activities along the 3.5-mile underground portion of Segment 8A in Chino Hills.

Cumulative Impacts

Impacts associated with Alternative 5 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 5 would not differ from the proposed Project's contribution to cumulative impacts. Therefore, cumulative impacts of Alternative 5 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.3.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The proposed route for this alternative is exactly the same as that of the proposed Project (Alternative 2). However, this alternative would change the construction method utilized in the more remote areas of Segments 6 and 11 by increasing the number of towers that are constructed by helicopter through the ANF.

Direct and Indirect Impacts

Helicopter construction would impact air quality emissions within the South Coast Air Basin (SCAB) and AVAQMD portion of the MDAB from 2010 through 2013. This alternative would cause construction activities similar to those of the proposed Project, except it would include the following that would not be included under the proposed Project: construction of 115 additional towers; helicopter wreck-out of 112 additional towers; construction of additional helicopter staging areas; and less road construction and road rehabilitation work.

The maximum daily construction emissions and annual emissions for this alternative are different from Alternative 2 in the SCAQMD and AVAQMD jurisdictions, as described in detail in Section 2 of the EIR/EIS. Alternative 6 has higher construction NO_x emissions for project construction during 2010 through 2014, and has the same overall findings with respect to exceeding General Conformity applicability triggers in the SCAB but creates a new exceedance of the AVAQMD/MDAB applicability trigger for NO_x.

Implementation of all mitigation measures described above for Alternative 2 is also recommended under Alternative 6. Additionally, in order to address increased air quality effects resulting from helicopter construction, the following mitigation measure is also recommended: General Conformity emission offset mitigation (requires the Project to obtain emission offsets for the years and in the quantities that the Project is estimated to exceed the NO_x and/or VOC emission applicability thresholds).

Cumulative Impacts

Impacts associated with Alternative 6 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 6 changes the construction methods but does not change the transmission line route from that proposed under Alternative 2. Therefore, this alternative has the same general geographic extent, existing

cumulative conditions, reasonably foreseeable future projects and changes, and cumulative impacts as those expected under Alternative 2. The significance of cumulative impacts identified under Alternative 2 would be the same for Alternative 6, despite differences in construction resulting from helicopter activities.

3.3.7 Alternative 7: 66-kV Subtransmission Alternative

This alternative changes the amount of construction method and the routing in Segments 7 and 8, by additional 66-kV construction and wreck out requirements. This will impact emissions within the SCAB from 2009 through 2013. This alternative would cause construction activities similar to those of the proposed Project, except it would require the underground construction of approximately 3,300 feet and another 6,000 feet of 66 kV line in Segment 7, the construction of approximately 1.63 miles of new overhead 66 kV poles/line, and require the demolition of the existing 66 kV poles/lines being replaced in Segment 7 and 8.

Direct and Indirect Impacts

Due to the underground construction methods utilized under Alternative 7, this alternative introduces different construction methods (compared to the proposed Project). The proposed route for this alternative does not change from that of the proposed Project within the KCAPCD and AVAQMD jurisdictions. However, the maximum daily construction emissions and annual emissions for this alternative are different from Alternative 2 in the SCAQMD jurisdiction. Despite the Project differences between Alternative 2 and Alternative 7, air quality impacts are expected to generally be the same. Any differences in construction emissions expected under Alternative 7 are described in detail in Section 3.3.11.1 of the EIR/EIS.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize air quality impacts. No additional mitigation is recommended.

Cumulative Impacts

Alternative 7 does not significantly change the construction route; therefore, it has the same general geographic extent, existing cumulative conditions, reasonably foreseeable future projects and changes, and impacts as Alternative 2. Therefore, Alternative 7 would have the same cumulative impact levels as Alternative 2 (see Section 3.3.6.2 of the EIR/EIS).

3.4 Biological Resources

Section 3.4 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to biological resources. A summary of the effects on biological resources is presented below.

3.4.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, the impacts associated with the proposed Project and alternatives described in the following sections would not occur. As a result, the No Project/Action Alternative would not impact biological resources.

However, in the absence of the proposed Project or project alternative, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet the power transmission needs and, consequently, would likely result in

impacts to biological resources similar to, or in addition to, those resulting from the proposed Project and its alternatives.

Cumulative Impacts

Under Alternative 1, no impacts to biological resources associated with the proposed Project would occur. However, as noted above, a similar project would be required to accommodate electricity loads generated from the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution, resulting in similar activities that would result in impacts to plants, vegetation communities, wildlife, wildlife habitat, and nesting birds. Direct impacts to plants and vegetation communities would include removal, trampling, and alteration of soil conditions, including the loss of native seed banks and changes to the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired. Indirect impacts to plants and vegetation communities include the establishment and spread of nonnative, invasive species and fugitive dust. Direct impacts to wildlife associated with construction of an alternative transmission project would include mortality from trampling or crushing; increased noise levels due to heavy equipment and helicopter use; increased vehicular and human presence along existing access roads and riparian areas; displacement due to habitat modifications, including vegetation removal, alterations of existing soil conditions; fugitive dust; and increased erosion and sediment transport. Indirect effects to wildlife include the introduction of non-native, invasive plant species, alterations to existing hydrological conditions, and exposure to contaminants. Direct impacts to nesting birds or raptors as a result of construction activities could include the removal or disturbance of vegetation that supports nesting birds, increased noise levels from heavy equipment and helicopter operations, increased human presence, and exposure to fugitive dust. Indirect impacts could include the loss of habitat due to the colonization of noxious weeds and a disruption of breeding activity due to facilitated use of new or improved spur and access roads by the public.

3.4.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on biological resources:

- Rare and common native vegetation communities, which also provide habitat for wildlife and nesting birds, would be disturbed during implementation of the proposed Project. Habitats potentially impacted include coastal sage scrub, chaparral habitats, oak woodland, riparian areas, desert wash, and other rare and common habitats. Direct impacts to native vegetation communities would occur as a result of the removal of vegetation during construction activities. These ground-disturbing construction activities would include clearing and grading for tower pad preparation, tower removal sites, pulling and tensioning sites, helicopter staging areas, and construction, grading, and widening of new spur roads and existing access roads. Indirect impacts to native vegetation communities could include alterations in existing topography and hydrology regimes, the accumulation of fugitive dust, disruptions to native seed banks from ground disturbance, and the colonization of non-native, invasive plant species.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Methods to reduce the spread of fungal annosus root disease; (4) Implement a Riparian Conservation Areas (RCA) Treatment Plan; (5) Implementation of a Construction Fugitive Dust Control plan; and (6) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits.

- The proposed Project would have the potential to contribute to the establishment and spread of noxious weeds. The potential introduction or spread of noxious and invasive weeds would occur primarily during construction activities, but would also continue to occur during operation and maintenance phases of the proposed Project. The introduction of noxious and invasive weeds would be related to ground disturbance from clearing and grading; expansion of access roads; construction of spur roads; road maintenance; the use of vehicles, construction equipment, or earth materials contaminated with non-native plant seed; use of straw bales or wattles that contain seeds of non-native plant species; and enhanced public access to the project corridor during and after construction. Additionally, weed seeds are often spread on equipment or clothing by construction or maintenance personnel. This would provide many avenues for new propagules (any part of a plant that may generate a new individual plant) to be carried into areas that previously were isolated from sources of noxious weed seeds.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implement RCA Treatment Plan; (3) Preparation and implementation of a Weed Control Plan; and (4) Removal of weeds seed sources from construction routes, assembly yards, and other areas of Project disturbance.

- Impacts to wildlife, wildlife habitat, and nesting birds would occur during implementation of the proposed Project. Direct impacts to wildlife associated with construction of the proposed Project would include mortality from trampling or crushing; increased noise levels due to heavy equipment and helicopter use; increased vehicular and human presence along existing access roads and riparian areas; displacement due to habitat modifications, including vegetation removal and alterations to existing soil conditions; fugitive dust; and increased erosion and sediment transport. Indirect effects to wildlife as a result of the proposed Project include the introduction of non-native, invasive plant species; alterations to existing hydrological conditions; and exposure to contaminants. Direct impacts to nesting birds or raptors as a result of construction activities for the proposed Project could include the removal or disturbance of vegetation that supports nesting birds, increased noise levels from heavy equipment and helicopter operations, increased human presence, and exposure to fugitive dust. Indirect impacts could include the loss of habitat due to the colonization of noxious weeds and a disruption of breeding activity due to facilitated use of new or improved spur and access roads by the public.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Implement RCA Treatment Plan; (4) Preparation and implementation of a Weed Control Plan; (5) Implementation of a Construction Fugitive Dust Control plan; (6) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits; and (7) Pre-construction surveys and monitoring for breeding birds.

- Seven State or federally listed or proposed plant species have the potential to occur in the proposed Project area. These include the federally listed Braunton's milk-vetch, Nevin's barberry, slender-horned spineflower, and thread-leaved brodiaea; the California State-listed Mt. Gleason Indian paintbrush; and the federal candidate species Brand's phacelia and San Fernando Valley spineflower. Critical habitat has been designated for three of these plant species: thread-leaved brodiaea (USFWS, 2005), Braunton's milk-vetch (USFWS, 2006), and Nevin's barberry (USFWS, 2008). However, the proposed Project is not located in designated or proposed critical habitat for any of these species. Direct impacts to listed plant species could occur from construction activities that remove vegetation, grade soils, or cause sedimentation, including tower pad preparation, clearing helicopter staging areas, and the construction, grading, and widening of new spur roads and existing access roads. Indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, and the colonization of non-native, invasive plant species.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Pre-construction surveys for listed plants and avoidance of any located listed plant populations; (5) Implementation of a Construction Fugitive Dust Control plan; and (6) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits.

- Habitat in the proposed Project area has the potential to support a variety of State and federally listed wildlife species. Twelve State or federally listed species or species proposed for listing were identified with the potential to occur in the proposed Project area. These include: California red-legged frog, arroyo toad, desert tortoise, Santa Ana sucker, threespine stickleback, California condor, southwestern willow flycatcher, least Bell's vireo, yellow-billed cuckoo, coastal California gnatcatcher, Swainson's hawk, and Mohave ground squirrel. Ground-disturbing activity, including tower pad preparation and construction, grading of new access roads, tower removal, and use or improvement of existing access roads has the potential to disturb listed wildlife species. In addition, helicopter construction would generate noise, vibration, dust, and air turbulence.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Implement RCA Treatment Plan; (4) Preparation and implementation of a Weed Control Plan; (5) Protocol or presence/absence surveys for California red-legged frog, arroyo toad, and desert tortoise and avoidance measures; (6) Biological monitoring; (7) Implementation of a Construction Fugitive Dust Control plan; (8) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits; (9) Dry weather construction; (10) Monitoring of construction in condor habitat and removal of trash and microtrash from the work area; (11) Protocol or focused surveys for listed riparian birds and avoidance of occupied habitat; (12) Pre-construction surveys and monitoring for breeding birds; (13) Focused or protocol surveys for coastal California gnatcatcher and Swainson's hawk and implementation of avoidance measures; (14) Preservation of off-site habitat and/or restore habitat for the coastal California gnatcatcher; (15) Removal of nest trees for Swainson's hawks; (16) Compensation for loss of Swainson's hawk foraging habitat; (17) Protocol surveys, construction monitoring, and preservation of off-site habitat for Mohave ground squirrel; and (18) Implementation of avoidance and minimization measures for Santa Ana sucker and other aquatic organisms.

- At least seventy candidate, sensitive, or special-status plant species have the potential to occur in areas of suitable habitat in the Project area. Direct impacts to special-status plant species would be the same as described for listed plant species and may occur in a variety of ways, including the direct removal of plants during the course of construction. Clearing and grading associated with the placement of towers or the grading of access or spur roads may also result in the alteration of soil conditions, including the loss of native seed banks and changes to the topography and drainage of a site such that the capability of the habitat to support special-status species is impaired. Indirect impacts include the creation of conditions that are favorable for the invasion of weedy exotic species that prevent the establishment of desirable vegetation and may adversely affect wildlife. Construction on steep hill sides may also result in off-site sediment transport that may bury rare plants in adjacent habitat or alter soil conditions. Dust from road travel, grading, or other construction activities may also reduce photosynthetic capacity in plants over time or inhibit reproduction by physically coating reproductive structures or excluding insect pollinators.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Preconstruction surveys for rare plants and avoidance of listed plant populations; (5) Preservation of off-site habitat and management of existing

populations of special-status plants; (6) Implementation of a Construction Fugitive Dust Control plan; and (7) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits.

- Special-status reptiles and amphibians would also be affected by implementation of the proposed Project. Species potentially impacted include: southwestern pond turtle, two-striped garter snake, Coast Range newt, San Gabriel Mountains slender salamander, western spadefoot, San Diego horned lizard, California horned lizard, silvery legless lizard, orange-throated whiptail, coastal rosy boa, San Bernardino ringneck snake, San Bernardino mountain kingsnake, coast patch-nosed snake, and northern red diamond rattlesnake. Direct impacts to these species include mechanical crushing; loss of nesting, breeding or basking sites; fugitive dust; and human trampling. Disturbance would be associated with the removal of vegetation, construction and widening of access and spur roads, excavation of footings, and tower construction adjacent to areas that support these species. Indirect impacts include alteration of habitat that would preclude use, degradation of water quality over time due to siltation and sedimentation, and the spread of noxious weeds.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Focused surveys for southwestern pond turtle, two-striped garter snake, south coast garter snake, and coast range newt, and the implementation of monitoring, avoidance, and minimization measures; (5) Monitoring, avoidance, and minimization measures for special-status terrestrial herpetofauna; (6) Implementation of a Construction Fugitive Dust Control plan; (7) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits; and (8) Dry weather construction.

- Several special-status birds species, including burrowing owl, California spotted owl, vermilion flycatcher, loggerhead shrike, yellow warbler, yellow-breasted chat, summer tanager, and tricolored blackbird, have been identified as either nesting or potentially nesting within the proposed Project. Direct impacts to nesting birds could include disruption of breeding activity due to increased dust, noise, and human presence associated with construction activities, and the loss of habitat due to improvement of access roads. Additional loss of habitat could occur through the construction of towers, crane pads, staging areas, pulling/splicing locations, and concrete batch plants. Indirect impacts include the loss of habitat due to the establishment of noxious weeds and a disruption of breeding activity or the flushing of adult or fledging birds through the use of the new or improved access and spur roads by the public.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Implementation of CDFG protocol for burrowing owls; (5) Pre-construction nest surveys for spotted owl; (6) Implementation of an RCA Treatment Plan; (7) Pre-construction surveys and monitoring for breeding birds; and (8) Implementation of a Construction Fugitive Dust Control plan.

- The proposed Project area supports a variety of special-status mammal species including several species of bats, small rodents, larger carnivores, and the rarely observed ringtail. Direct impacts to special-status mammals are similar to those described for other small, fossorial animals and include mechanical crushing by vehicles and construction equipment, trampling, dust, and loss of habitat. Additionally, temporary disturbance during construction (noise, air turbulence, dust, and ground vibrations from helicopters and construction equipment) would occur. Construction disturbance can also result in the flushing of small animals from refugia which increases the predation risk for small rodents. Indirect impacts include alteration of soils, such as compaction that could preclude burrowing, and the spread of exotic weeds.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Surveys for bat maternity colonies or hibernacula; (5) Provision of substitute bat roosting habitat; (6) Exclusion of bats prior to demolition of roosts; (7) Implementation of an RCA Treatment Plan; (8) Focused surveys and passive relocation of San Diego desert woodrat, ringtail, and American badger; and (9) Implementation of a Construction Fugitive Dust Control plan.

- The Project ROW crosses numerous drainages that could qualify as jurisdictional waters. While SCE has indicated that the proposed transmission lines would span these areas, many tributaries and drainages are crossed by access roads that could utilize these crossings during periods of water flow. Direct impacts to wetland habitats could include the removal of native riparian vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Most of these impacts would occur during access road improvements and heavy equipment and vehicle passage where jurisdictional waters traverse access roads. Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species.

Mitigation. Measures proposed to reduce these impacts include: (1) Restoration/compensation for impacts to native vegetation communities; (2) Implementation of a Worker Environmental Awareness program; (3) Preparation and implementation of a Weed Control Plan; (4) Implementation of an RCA Treatment Plan; (5) Implementation of a Construction Fugitive Dust Control plan; and (6) Implementation of an Erosion Control Plan and demonstration of compliance with water quality permits.

The implementation of the proposed Project would also have minor impacts related to biological resources. For example, the introduction of new and larger transmission towers and substation infrastructure would introduce potential nest sites for common raven, a predator of the federally and State threatened species. However, nest sites in the region are currently relatively abundant, and the addition of the proposed Project is not expected to increase raven populations.

Mountain plovers nest in the Great Plains but winter in portions of Central California, including the Antelope Valley. In the project area, this species is known to winter in the Northern Region where they forage and roost mainly in recently tilled agricultural fields, although they are also known to roost in recently graded road beds. The proposed Project will affect approximately 24 acres of agriculture scattered along Segment 4 in the Northern Region. Because the total acreage of impacted habitat is small compared to what is available regionally, and implementation of the proposed Project would not restrict the range of the species, impacts to wintering mountain plovers resulting from construction disturbance are considered less than significant.

The proposed Project would result in the electrocution of special-status birds or their mortality through collision with overhead lines and towers. Direct impacts from the proposed Project would include electrocution of large aerially perching bird species. Indirect effects associated with this impact would include increased risk of wildfire due to electrocuted birds or nests contacting flammable vegetation or other materials. In addition, mortality of bird species due to collision with overhead power lines, towers, cranes, or other Project components could also occur. However, current guidelines for constructing transmission lines have been developed to reduce or minimize the potential effects from bird strikes and electrocution. To reduce the effects of the proposed Project SCE shall implement APMs BIO-4 and BIO-9, which state that SCE construction and operations crews will use BMPs, and that transmission facilities will be designed to be raptor-safe in accordance with the *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC, 2006). On NFS lands raptor safety protection in the

form of swan wrap will be required on tower/conductor (lines) where feasible. Additional mitigation is not warranted.

The western mastiff bat, big free-tailed bat, pocketed free-tailed bat, spotted bat, hoary bat, and western red bat are special-status species that all fly high enough to potentially be impacted by additional transmission lines. However, given that most bat species can use echolocation to discriminate objects as small as 0.4 to 0.004 inch in size (Vaughan 1986), and the size of guard lines and 500-kV or 220-kV transmission lines are typically equal to or greater than 0.5 inch in diameter (SCE 2007), the frequency of transmission line strikes is expected to be extremely low. Therefore, the number of fatal strikes is still expected to be quite low and insufficient to substantially reduce the number of these species.

Additionally, the proposed Project is not expected to interfere substantially with established bird and bat migratory corridors. There are no known bird or bat migratory corridors that would be directly impeded by the proposed Project. Large concentrations of migrants are not known to utilize any portion of the proposed Project (See Appendix B of the *Biological Resources Specialist Report* [Aspen, 2008], Avian Risk Assessment). Further, bats are expected to avoid transmission lines because they can detect objects as small as 0.4 to 0.004 inch in size through echolocation (Vaughan, 1986), and the size of guard lines and transmission lines is typically greater than or equal to 0.5 inch in diameter (SCE, 2007). Therefore, the impact to bird and bat migratory corridors from the proposed Project would be less than significant.

The effects of corona noise on wildlife are poorly understood, and it is difficult to predict the degree to which the increase in corona noise will impact local wildlife. In the project area, animals are already subject to existing corona noise and while the proposed Project will result in louder corona noise for most segments, wildlife can be expected to have already been exposed and likely habituated to this disturbance.

The proposed Project does not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and it does not conflict with any adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or State HCP.

Cumulative Impacts

As discussed in Section 3.4 of the EIR/EIS, development in the Northern and Southern Regions of the proposed Project is rapid and ongoing, which is impacting biological resources at a regional scale. Mitigation such as restoration/compensation, weed control, pre-construction surveys, construction monitoring, and avoidance and relocation of sensitive species would reduce impacts somewhat. However, cumulative impacts to biological resources, when combined with past, present, and reasonably foreseeable future projects in the area, would be considerable and unavoidable.

3.4.3 Alternative 3: West Lancaster Alternative

As described in Section 2.3 of the EIR/EIS, this alternative would deviate from the proposed route along Segment 4, at approximately S4 MP 14.9, where the new 500-kV transmission line would turn south down 115th Street West for approximately 2.9 miles and turn east for approximately 0.5 mile, rejoining the proposed route at S4 MP 17.9. This re-route would increase the overall distance of Segment 4 by approximately 0.4 mile.

The portion of Segment 4 that would be re-routed for Alternative 3 is situated in an area that has previously been used for agriculture. Land use on either side of the re-routed segment is characterized primarily as California annual grassland, with several areas of native wildflower fields and desert wash. Compared to the proposed Project, with the exception of several additional desert washes and additional

areas of California annual grassland and wildflower fields that may be impacted, no new impacts to biological resources would be introduced under Alternative 3. Mitigation described above for the proposed Project would also be required under this alternative to minimize impacts to biological resources. No additional mitigation is recommended.

Cumulative Impacts

As described in Section 3.4.6.2 of the EIR/EIS, impacts associated with Alternative 3 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The minor re-route of the proposed Project transmission line associated with Alternative 3 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2. Mitigation measures introduced for Alternative 3 in Section 3.4.7.1 of the EIR/EIS (Direct and Indirect Effects Analysis) and described above would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.4.4 Alternative 4: Chino Hills Alternatives

As described in Section 2.4 of the EIR/EIS, this alternative is identical to the proposed Project for all Segments except Segment 8A. The route would deviate from the proposed Project beginning approximately 0.6 mile east of Tonner Canyon Road or two miles east of State Route 57 along Segment 8A. The proposed routes for Alternative 4 would cross through parts of Orange County, which the proposed Project (Alternative 2) would not enter, and San Bernardino County. The routing options for Alternative 4 would also cross through the Chino Hills State Park (CHSP). The four different routing options (Routes A through D) which are included under Alternative 4 are discussed in further detail below.

Route A

This alternative would deviate from the proposed Project route 0.6 mile east of Tonner Canyon Road along Segment 8A and run parallel to the existing Walnut/Olinda-Mira Loma 220-kV transmission line for 6.2 miles, 2.3 miles of which would be within the CHSP. Route A would be situated within an existing utility corridor, but would require that the corridor be widened by 150 feet along the length of Route A. In addition, Route A would require the installation of a new switching station within the CHSP. The size of new switching station would be a minimum of 4 to 5 acres in size (gas-insulated technology) and a minimum of 11 to 12 acres in size (air-insulated technology).

Route B

The proposed Route B would follow the same path as Route A into CHSP but would continue to just beyond the eastern Park boundary and terminate at a new switching station immediately outside of the CHSP. As with the Route A alternative, the new switching station for Route B would be between 4 and 12 acres in size. Route B would travel through CHSP for approximately 4.3 miles.

Route C

The proposed Route C alternative would follow the same path as Routes A and B up to the CHSP boundary and continue east along this boundary just north of the CHSP. Proposed Route C would require the construction of 2.3 miles of new transmission line and a new switching station (4 to 12 acres) just north of the CHSP, re-routing of 1.8 miles of two existing lines within the CHSP, and the removal of

existing transmission lines from within the CHSP. The proposed switching station for Route C would be located immediately north of Raptor Ridge and adjacent to Southern sycamore and coast live oak riparian forest.

Route D

The proposed Route D alternative would follow the same path as Route C but would follow the northern boundary of CHSP for approximately 2.4 miles before crossing through the northeastern corner of the CHSP and terminating at a new switching station just outside the eastern Park boundary. The proposed switching station for Route D would be the same size (4 to 12 acres) and in the same location as that proposed for Route B.

Impacts to biological resources under this alternative would be the same as the proposed Project for all areas except the reroute near and within Chino Hills State Park (CHSP). Alternative 4 traverses similar habitats as the proposed Project but also crosses two new habitats (Mixed Chaparral, Recently Burned; Mexican Elderberry/Giant Wild Rye Scrub), and comprises a net increase in the size and magnitude of direct and indirect impacts to native vegetation and riparian habitats as a result of increased construction activity in undeveloped areas. This in turn results in an increase in the magnitude of effects to wildlife and vegetation that occur in the CHSP area. However, mitigation introduced for the proposed Project would be required for this alternative as well, and would reduce impacts to biological resources. No additional mitigation is recommended for Alternative 4.

Cumulative Impacts

As described in Section 3.4.6.2 of the EIR/EIS, impacts associated with Alternative 4 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The minor re-route of the proposed Project transmission line associated with Alternative 4 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 4 would be exactly the same as cumulative impacts for the proposed Project. Mitigation measures introduced for Alternative 4 in Section 3.4.8.1 of the EIR/EIS (Direct and Indirect Effects Analysis) and described above would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.4.5 Alternative 5: Partial Underground Alternative

As described in Section 2.5 of the EIR/EIS, this alternative would be the same as the proposed Project, with the exception that the line would be installed underground for approximately four miles through Chino Hills, between MP 21.9 and 25.4 of Segment 8A (3.5 miles). This underground portion would occur underneath the City of Chino Hills and increase the overall impact acreage of Segment 8 by approximately nine acres (seven acres of disturbed/developed and two acres of California annual grassland). Additionally, a large marshalling yard (estimated to be 20 to 30 acres in size) would be required for the storage of all electrical components and specialized materials associated with the GIL system. The location of the marshalling yard would be established as close to the boring site as possible; however, an exact location has not been identified. Depending on the final location for the marshalling yard, temporary impacts associated with ground disturbance could be potentially significant if the final location were to occur within habitat suitable for special-status plants or wildlife species.

The portion of Segment 8 that would be placed underground for Alternative 5 is situated in an area that is primarily located on developed land within the City of Chino Hills, although the Western Transition

Station is located in California annual grassland. Land use on either side of the re-routed segment is characterized as disturbed/developed. Compared to the proposed Project, with the exception of an additional seven acres of disturbed/developed and two acres of California annual grassland that will be impacted by Alternative 5, impacts to biological resources would be identical (See Section 3.4.6.1 of the EIR/EIS). Mitigation recommended for the proposed Project would also be required under this alternative to reduce impacts to biological resources. No additional mitigation is recommended.

Cumulative Impacts

This alternative consists of a 3.5 mile underground re-route of the proposed transmission line. The remainder of this alternative route (north of Segment 8A) would be identical to that of the proposed Project and would, therefore, result in identical impacts as the proposed Project. The rerouted underground portion of the Alternative 5 route follows the same path as the proposed aboveground Project route. As a result, this alternative traverses the same habitat types as the portion of the proposed Project route it is proposed to replace, and additional impacts are limited primarily to barren/developed habitats. Based on the substantial similarity of Alternative 5 to the proposed Project, this alternative's contribution to cumulative impacts would be virtually identical to that of the proposed Project. Mitigation measures introduced for Alternative 5 in Section 3.4.6.1 of the EIR/EIS (Direct and Indirect Effects Analysis) would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.4.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

As described in Section 2.6 of the EIR/EIS, Alternative 6 includes the maximum amount of helicopter construction on the ANF (Segments 6 and 11). This alternative follows the same route for the transmission line as the proposed Project in all three regions. The affected environment for the Alternative 6 transmission line route would be exactly the same as the proposed Project, with regard to biological resources. Therefore, the habitats and special-status plant and animal species described above apply to Alternative 6 as well as the proposed Project. However, preliminary surveys have found that several sensitive plant and animal species occur alongside access roads or within spur roads proposed under Alternative 2. Under Alternative 6 these populations would not be adversely impacted because the roads would not be utilized.

As compared to the proposed Project, this alternative is expected to decrease the overall impact to biological resources, with the exception of the short term additional noise and disturbance caused by helicopter operation, by limiting the amount of ground disturbance and therefore, loss of vegetation and habitat (See Section 3.4.10.1 of the EIR/EIS). Mitigation recommended for the proposed Project would also be required under this alternative to reduce impacts to biological resources. No additional mitigation is recommended.

Cumulative Impacts

Alternative 6 follows the same route as the proposed Project through the ANF, impacting similar habitats and species, but comprising a net decrease in the size and magnitude of direct and indirect impacts as a result of decreased ground-disturbing activity, including an approximate 42.5-mile reduction in the amount of access and spur roads to be constructed or improved. Alternative 6 is still encompassed by the geographic extent of the cumulative analysis defined for Alternative 2.

The implementation of Alternative 6 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 6 would be the same as cumulative impacts for Alternative 2. Mitigation recommended for the proposed Project would also be required under this alternative to reduce impacts to biological resources. No additional mitigation is recommended.

3.4.7 Alternative 7: 66-kV Subtransmission Alternative

As described in Section 2.7 of the EIR/EIS, Alternative 7 consists of an underground 66-kV subtransmission line segment through the Duck Farm along Segment 7, a brief underground re-route of the 66-kV subtransmission line along Durfee Avenue around the Whittier Narrows Recreation Area, and an above-ground re-route of the 66-kV subtransmission line in the vicinity of the Whittier Narrows Recreation Area and the San Gabriel River. The remainder of this alternative route and the transmission line components of this alternative would be identical to that of the proposed Project and would, therefore, result in identical impacts as the proposed Project.

Compared to the proposed Project, this alternative would traverse slightly more land, including coastal sage scrub, barren/developed lands, ruderal grasslands, nonnative woodlands, and a variety of riparian plant communities. Many of these communities provide habitat for listed and sensitive species, including the coastal California gnatcatcher and the least Bell's vireo. Mitigation recommended for the proposed Project would also be required under this alternative to reduce impacts to biological resources. No additional mitigation is recommended.

Cumulative Impacts

Alternative 7 only differs from the proposed Project for a very small portion of the proposed 66-kV subtransmission line route in the vicinity of the Whittier Narrows Recreation Area along Segments 7 and 8A and the Duck Farm along Segment 7. These areas are still encompassed by the geographic extent of the cumulative analysis defined for Alternative 2. The minor re-routes of the proposed Project 66-kV subtransmission lines associated with Alternative 7 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 7 would be exactly the same as cumulative impacts for Alternative 2. Mitigation recommended for the proposed Project would also be required under this alternative to reduce impacts to biological resources. No additional mitigation is recommended.

3.5 Cultural Resources

Section 3.5 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to cultural resources. A summary of the effects on cultural resources is presented below.

3.5.1 Alternative 1: No Action/Project

No Project-related cultural resource impacts would result from Alternative 1 (No Project/Action), since the proposed facilities would not be built. Under Alternative 1, likely resource impacts within the Project area would be confined to natural erosion, disturbances associated with the routine maintenance of existing transmission lines and service roads, as well as periodic unauthorized surface artifact collecting or more severe site vandalism. However, additional cultural resource impacts may occur outside of the existing Project area as a result of efforts by others to interconnect and integrate new wind generation in the TWRA. Such additional impacts would be comparable to those anticipated for the proposed Project.

In the absence of the proposed Project, it is assumed that some currently unknown plan would be developed to provide the transmission upgrades necessary to interconnect renewable generation projects in

the Tehachapi area and to address the existing transmission problems south of Lugo Substation and to provide the needed capacity and reliability to serve growing electrical load in the Antelope Valley. Construction methods, resulting impacts to cultural resources, and regulatory requirements associated with transmission projects that might occur without the proposed Project would be similar to those identified for the proposed Project. It is also assumed that the number of projects would most likely increase from a single project to several smaller projects that would be constructed in the same general area as the proposed Project with potentially overlapping construction schedules, in order to meet the RPS goals. The impacts of several smaller projects with overlapping timeframes would likely be greater than impacts associated with the proposed Project because of the probable need for increased transmission line miles and their associated roads, staging areas, and other ancillary facilities.

Cumulative Impacts

Under Alternative 1, no impacts to cultural resources associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution. Cumulative impacts would be significant and unavoidable.

3.5.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on cultural resources:

- Properties that are eligible or potentially eligible for the National Register of Historic Place or the California Register for Historical Resources occur within and near several tower sites. Other eligible or potentially eligible cultural resource sites are located within or adjacent to the general transmission corridor. Direct impacts are any ground-disturbing activities that have the potential to disturb known cultural resources. Impacts could also result from inadvertent trespass out of designated work areas or roads.

Mitigation. Measures proposed to reduce impacts include: (1) Conduct a final inventory of cultural resources once the final design is completed and APE has been determined; (2) Avoid and protect resources through Project redesign and engineering modifications; (3) Evaluate the significance of cultural resources that cannot be avoided; (4) Develop and implement Historic Properties Treatment Plan for significant resources that cannot be avoided; (5) Conduct data recovery excavation or other actions to reduce adverse effects; (6) Monitor construction; (7) Train construction personnel to ensure discovery, evaluation, and treatment of unknown buried prehistoric and historical archaeological sites; and (8) Protect and monitor NRHP-eligible properties. In addition, SCE has also included APMs to reduce impacts.

- Native American human remains or sacred features, in the form of primary inhumations, cremations, ceremonial bundles, or mourning ceremony features, could be inadvertently uncovered, exposed, and/or otherwise damaged during construction.

Mitigation. The measure proposed to reduce this impact is as follows: Treatment of human remains discovered during construction requires that such remains be treated in accordance with relevant federal and state laws, statutes, and regulations. Applicant also will assist and support the CPUC and USFS in all required government-to-government consultations with Native Americans and appropriate agencies and commissions, as requested. In addition, SCE has also included APMs to reduce impacts.

Background research and local policy screening revealed that no properties listed on local registers of historical resources will be affected by the proposed Project. As a result, no impact would occur.

Cumulative Impacts

The significance of the TRTP's cumulative impacts on cultural resources is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. Adverse effects to individual sites cannot be precisely identified for all Project areas until the final tower locations are defined, specific tower sites are determined, detailed engineering plans for all Project roads and facilities are completed, and the final NRHP and CRHR eligibility of cultural resources has been evaluated. If direct impacts to significant sites cannot be avoided, then a significant impact may occur. The magnitude of the Project's impacts on cultural resources, and thus its cumulative effect in combination with similar impacts from other projects, would depend on the number of sites affected adversely and the nature and extent of individual effects. The combination of Project impacts with similar impacts of other projects would not be cumulatively considerable if the following occurred: only a few sites are impacted significantly; the extent of impacts is minor relative to the nature and extent of the individual site; the types of sites impacted by the Project are common throughout the region; and if the impacts mentioned can be mitigated to less than significant through application of the Project APMs and other mitigation measures. However, if the impacts mentioned above could not be mitigated to less than significant by application of the Project APMs and other mitigation measures, the overall loss of cultural resources and cumulative degradation of the regional resource base would result significant and unavoidable cumulative impacts.

3.5.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Effects Analysis

The direct and indirect effects on cultural resources of construction activities associated with Alternative 3, as well as subsequent mitigation measures, are identical to those presented for Alternative 2 because they follow the same route and use the same construction methods. No additional cultural resources were identified along the West Lancaster re-route, and thus the affected environment is identical to Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to cultural resources. No additional mitigation is recommended.

Cumulative Impacts

As with Alternative 2, the significance of cumulative impacts for Alternative 3 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until it is know how many sites are impacted significantly; the extent of the impacts; and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region. Once this information is available, the cumulative significance of the combination of these impacts with similar impacts of other projects can be determined. If the overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures, these cumulative impacts would be significant and unavoidable.

3.5.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Effects Analysis

The direct and indirect effects on cultural resources of construction activities associated with Alternative 4, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific

impacts would be slightly different because the Chino Hills route alternatives would avoid five identified cultural resources along Segment 8A. However, one previously identified cultural resource is located along Alternative 4B, and others may be identified when intensive pedestrian surveys are completed. Impacts along all other segments would remain the same. Thus, overall direct and indirect impacts of this alternative are expected to be comparable to Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to cultural resources. No additional mitigation is recommended.

Cumulative Impacts

As with Alternative 2, the significance of cumulative impacts for Alternative 4 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. However, the cumulative impacts of Alternative 4 may be greater than for Alternative 2 because of the potential for new disturbance of previously undisturbed cultural sites along the new ROW required for the Chino Hills reroutes. Cultural resources along the new ROW would not have suffered from disturbance associated with construction, operation, and maintenance of the existing lines.

The additional information that is need is the number of sites that would be impacted significantly; the extent of the impacts; and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region. When this information is available, the cumulative significance of the combination of these impacts with similar impacts of other projects can be determined. If the overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significance by application of the Project APMs and other mitigation measures, these cumulative impacts would be significant and unavoidable.

3.5.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Effects Analysis

The direct and indirect effects on cultural resources of construction activities associated with Alternative 5, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts may be slightly different because of the construction methods unique to Alternative 5, including portals, air/service shafts, bore holes, and other features related to underground construction. The direct and indirect impacts of these unique construction methods would be comparable, though they may be greater, than those presented for Alternative 2.

Depending on the number of bore holes, vents, portals, shafts, access roads, and other facilities associated specifically with underground construction, the magnitude of impacts along Segment 8A associated with historic properties and resources could be greater than impacts associated with Alternative 2. These specific underground construction features may disturb a greater area than their comparable above ground construction methods, thus resulting in greater physical impacts to cultural resources that cannot be avoided. In addition, although the likelihood of encountering human remains along Segment 8A is low, the potential exists and increased ground disturbance associated with specific underground construction techniques could result in greater physical impacts to cultural resources that cannot be avoided. Construction activities and methods along other Project segments would be identical to those of Alternative 2 and there would be no substantial increase in the potential for impacts to occur in those segments. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to cultural resources. No additional mitigation is recommended.

Cumulative Impacts

As with Alternative 2, the significance of cumulative impacts for Alternative 5 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until the following information is available: the number of sites that would be impacted significantly; the extent of the impacts; and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region. When this information is available, the combination of these impacts with similar impacts of other projects can be determined. If the overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures, these cumulative impacts would be significant and unavoidable.

3.5.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The direct and indirect effects on cultural resources of construction activities associated with Alternative 6, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts would be slightly different because cultural resources at proposed helicopter staging areas may be affected, while impacts associated with construction in Segments 6 and 11 using standard techniques may be reduced. Impacts along all other segments would remain the same. Thus, overall direct and indirect impacts of this alternative are expected to be comparable to Alternative 2.

Cumulative Impacts

As for Alternative 2, the significance of cumulative impacts for Alternative 6 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. However, the cumulative impacts of Alternative 6 may be greater than for Alternative 2 if effects on significant resources at the proposed helicopter staging areas are not offset by the reduced effects of helicopter construction. Nonetheless, in order to determine the significance of the combination of these impacts with similar impacts of other project, the following information is needed: the number of sites that would be impacted significantly; the extent of the impacts; and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region. If the overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures, these cumulative impacts would be significant and unavoidable.

3.5.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Effects Analysis

The direct and indirect effects on cultural resources of construction activities associated with Alternative 7, as well as subsequent mitigation measures, are similar to those presented for Alternative 2. Specific impacts may be greater because of the number of identified resources, greater archaeological and historical sensitivity of the reroute and underground alignments, and higher potential for buried remains, including human remains. Impacts along all other segments would remain the same. Thus, overall direct and indirect impacts of this alternative are expected to be greater than Alternative 2.

Cumulative Impacts

As for Alternative 2, the significance of cumulative impacts for Alternative 7 is unknown because the magnitude of the Project's impacts on cultural resources cannot be determined until more information is available. However, the cumulative impacts of Alternative 7 may be greater than for Alternative 2 because there are more resources recorded along the alternative elements, and a comparable number are

not avoided by the proposed re-routes and undergrounding. Nonetheless, in order to determine the significance of the combination of these impacts with similar impacts of other project, the following information is needed: the number of sites that would be impacted significantly; the extent of the impacts; and/or if the types of sites impacted by the Project are unique, unusual, or uncommon in the region. If the overall loss of cultural resources and cumulative degradation of the regional resource base would not be mitigated to less than significant by application of the Project APMs and other mitigation measures, these cumulative impacts would be significant and unavoidable.

3.6 Environmental Contamination and Hazards

Section 3.6 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to environmental contamination and hazards. A summary of the effects of potential environmental contaminations and hazards is presented below.

3.6.1 Alternative 1: No Action/Project

Selection of the No Project/Action Alternative would mean that the TRTP, as proposed, would not be implemented. As such, the environmental impacts associated with the Project would not occur. However, in the absence of the proposed Project or an alternative to the Project, the purposes and need for the power transmission capabilities that would be met by the proposed Project (or an alternative) would not be achieved. As a result, it is possible that another, similar transmission line project would be constructed in the future to meet the power transmission needs of developing wind farms in the Tehachapi Wind Resource Area. Such a project would likely introduce similar environmental contamination and hazardous impacts that would be introduced through the proposed TRTP or an alternative.

Environmental conditions in the Project Area are expected to naturally change or evolve over time and therefore, independently of the proposed Project or an alternative to the Project (including the No Project/Action Alternative), the regional setting and baseline conditions in the Project Area would not remain static. If the No Project/Action Alternative is implemented, soil and groundwater conditions within the Project Area will continue to naturally evolve over time, independently of the potential impacts associated with the proposed TRTP.

The continued development of lands within the Counties of Kern, Los Angeles, and San Bernardino will result in the continued potential for public health and safety risk factors as former contaminated sites undergo cleanup or developed for new uses. However, sites with known environmental contamination will be required by law to be investigated and remediated in accordance with regulatory agency standards prior to redevelopment. In addition, areas with previously unknown contamination will likely be discovered during planning, followed by the required reporting and cleanup.

Cumulative Impacts

Under Alternative 1, no impacts to environmental contamination and hazards associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. With regard to cumulative environmental contamination impacts, the proposed Project's contribution to a cumulative impact was not considered significant as it would not combine with other projects to result in substantial volumes of contaminated soil that require off-site treatment and that, as a combined volume, exceeded the capacity of available treatment facilities or resulted in substantial exposure of hazardous materials to the public. Therefore, the contribution to cumulative impacts for similar transmission line project in the future to meet the power

transmission needs of developing wind farms in the Tehachapi Wind Resource Area would not be cumulatively considerable.

3.6.2 Alternative 2: SCE's Proposed Project

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on environmental contamination and potential hazards:

- Significant impacts would be related to the mobilization of known and unknown contamination as a result of construction of the proposed Project. Excavation or grading could result in the mobilization of existing or unanticipated preexisting soil or groundwater contamination; and the potential for encountering toxic gas or natural gas located near landfills or active, inactive or abandoned oil wells could result in explosions or exposure of workers to toxic gases.

Mitigation. Measures proposed to reduce impacts include: (1) Perform Phase I ESAs along existing transmission line right-of-ways (ROWs); (2) Perform Phase II investigations for potentially contaminated sites; (3) Verify presence of landfill gases; (4) Implement personnel safety monitoring measures; (5) Verify location and status of abandoned oil and natural gas wells; (6) Appoint individuals with correct training for sampling, data review, and regulatory coordination; and (7) Document compliance with APM HAZ-3. In addition, SCE has also included APMs to reduce impacts.

Implementation of the proposed Project could also have minor impacts related to environmental contamination or hazards. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination, or soil or groundwater contamination could result from accidental spill or release of hazardous materials at the substations during facility operation or along the transmission line during maintenance operations. This could potentially result in exposure of facility workers and the public to hazardous materials. However, implementation of APMs would reduce potential impacts to less-than-significant levels.

Cumulative Impacts

With regard to cumulative environmental contamination impacts, the proposed Project's contribution to a cumulative impact would only be considered significant if it combined with other projects to result in substantial volumes of contaminated soil that require off-site treatment and that, as a combined volume, exceeded the capacity of available treatment facilities or resulted in substantial exposure of hazardous materials to the public. For the reasons discussed in Section 3.6.6.2 of the EIR/EIS, the proposed Project's contribution to cumulative impacts would not be cumulatively considerable.

3.6.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Effects Analysis

Impacts associated with Alternative 3 would be the same as impacts associated with the proposed Project. Although this alternative introduces a re-route of Segment 4 of the proposed Project, the re-route would not cross through or adjacent be to any areas with known or suspected contamination, landfills or oil wells, and construction in this area would therefore not be expected to encounter methane or natural gas. In addition, the proposed route would not traverse areas of intensive agricultural use where pesticides and herbicides would be applied regularly. Consequently, there is no potential to expose workers during construction to residual pesticides and herbicides in the soil.

Alternative 3 is identical to the proposed Project with respect to the operational use of hazardous materials at substations and the transmission line. Accidental spills during operation and maintenance of the Project could cause soil contamination and expose workers or the public to hazardous materials. In addition, SCE

plans to minimize and/or avoid unforeseen spills of hazardous materials during operation at the substations by utilizing Spill Prevention, Countermeasure, and Control (SPCC) plans and Hazardous Materials Business Plans (HMBPs) for the substations. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to cultural resources. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, impacts for Alternative 3 would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects. Therefore impacts associated with environmental contamination and hazards for Alternative 3 would not be cumulatively considerable.

3.6.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Effects Analysis

Construction activities and methods for this alternative would be identical to those of the proposed Project, resulting in the same potential for soil contamination to occur. However, the shorter length of all four routes of this alternative compared to the proposed Project would result in incrementally decreased opportunity for soil or groundwater contamination to occur.

In addition, implementation of Alternative 4 would result in the following significant effects, which would not be applicable to the proposed Project:

- Significant impacts would be related to the mobilization of known and unknown contamination as a result of construction of Alternative 4. Excavation or grading could result in the mobilization of existing soil contamination or encountering ordnance from known munitions testing and disposal sites. In addition, landfill gas and/or natural gas located near active, inactive or abandoned oil wells could be encountered during excavation or grading. The impacts associated with this alternative would be the same as the proposed Project with the exception of the four routing options which are described below.

Route A. Route A would be located near 59 fewer sites with known contamination than the proposed Project, and would avoid landfill sites located near Segments 8B MP 0.3 and 8B MP 4.4 of Alternative 2.

Route B. Impacts of Route B would be identical to impacts of Route A.

Route C. Route C would also avoid the 59 contaminated sites located in Chino and Ontario near which the proposed Project would be located. However, Route C would traverse within approximately 100 to 400 feet (re-routed 220-kV and new 500-kV lines, respectively) of the former burn area #18 at the Aerojet Chino Hills munitions testing facility (McLaren/Hart, 1999a).

Route D. Route D of Alternative 4 would also traverse within approximately 100 to 400 feet of the former burn area #18 at the Aerojet Chino Hills facility. With respect to proximity to landfill sites, Route D would be identical to Route A. However, according to oil field maps (DOGGR, 2005), portions of Route D approach either plugged and abandoned wells or dry holes, or active oil wells. There is potential for encountering natural gas during construction.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. In addition, the following mitigation measure would be required for Alternative 4:

Mitigation. Measures proposed to reduce impacts include: (1) Provide ordinance recognition training; and (2) Detect and remove MEC from access roads.

Cumulative Impacts

As discussed for the proposed Project, the impacts for Alternative 4 would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects. Therefore, impacts associated with environmental contamination and hazards for Alternative 4 would not be cumulatively considerable.

3.6.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Effects Analysis

The more extensive amount of ground disturbance and increased duration of construction activities associated with underground installation would incrementally increase the potential the impacts associated with environmental contamination and hazards to occur. However, the impacts would be the same under Alternative 5 as the proposed Project. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts of environmental contamination. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, the impacts for Alternative 5 would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects. Therefore, impacts associated with environmental contamination and hazards for Alternative 5 would not be cumulatively considerable.

3.6.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The more extensive use of helicopter-supported construction within the ANF would increase the amount of helicopter fueling and maintenance within undeveloped areas not fully suited for these activities compared to Alternative 2 and Alternative 3 and could increase the potential for spills and leaks of fuel, lubricants and other chemicals due to the maximum use helicopter-supported construction along Segment 6 and Segment 11. The increased opportunity for chemical and fuel spills would result in an incremental increase in the potential for construction-related soil contamination to occur compared to the proposed Project. However, the impacts would be the same under Alternative 6 as the proposed Project. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts of environmental contamination. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, impacts of Alternative 6 would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects. Therefore impacts related to environmental contamination and hazards for Alternative 6 would not be cumulatively considerable.

3.6.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Effects Analysis

Underground construction of two short segments (1 mile and 0.6 mile) of 66-kV subtransmission line would incrementally increase the potential for spills and leaks of fuel, oil, and other chemicals during construction to cause contamination of soil. In addition, underground construction of a shallow trench in

commercial land use areas with preexisting on potentially previously unknown soil contamination could result in an incremental increase to encounter and mobilize these contaminants. However, the impacts would be the same under Alternative 7 as the proposed Project. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts of environmental contamination. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, impacts of Alternative 7 would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects. Therefore impacts related to environmental contamination and hazards for Alternative 7 would not be cumulatively considerable.

3.7 Geology, Soils, and Paleontology

Section 3.7 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to geology, soils, and paleontology. A summary of the effects on geology, soils and paleontologic resources is presented below.

3.7.1 Alternative 1: No Action/Project

Selection of the No Project/Action Alternative would mean that the proposed TRTP would not be implemented. As such, the environmental impacts associated with the Project, as described in Section 3.7.6 of the EIR/EIS, would not occur. However, in the absence of the proposed Project or an alternative to the Project, the purposes and need for the power transmission capabilities that would be met by the proposed Project (or an alternative) would not be achieved. As a result, it is possible that another, similar transmission line project would be constructed in the future to meet the power transmission needs of developing wind farms in the Tehachapi Wind Resource Area. Such a project would likely introduce similar impacts to geology, soils, and paleontology that would be introduced through the proposed TRTP or an alternative.

Environmental conditions in the Project Area are expected to naturally change or evolve over time and therefore, independently of the proposed Project or an alternative to the Project (including the No Project/Action Alternative), the regional setting and baseline conditions in the Project Area would not remain static. If the No Project/Action Alternative is implemented, geologic and soil conditions as well as paleontologic resources preserved in the natural formation within the Project Area will remain unchanged over a short geologic time period, and will be independent of the potential impacts associated with the proposed TRTP.

Cumulative Impacts

Under Alternative 1, no impacts to geology, soils, and paleontology associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution. An alternative transmission solution would result in impacts that would be cumulatively considerable.

3.7.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on geologic, soil and paleontologic resources:

- Segments 7, 11, and 8A of the proposed Project would be adjacent to or cross access roads through three oil and gas fields. Because these alignments do not cross within the active well fields, operation of the Project in the existing ROWs is not expected to interfere in access to or operation of these existing oil fields. Nonetheless mitigation would be required to avoid potential interference.

Mitigation. The measure proposed to reduce this impact is as follows: Coordination with oil field operations.

- Excavation and grading during construction activities could trigger erosion, landslides, or slope instability. Excavation and grading for tower, substation, and switching station foundations, staging and work areas, access roads, and spur roads could loosen soil and trigger or accelerate erosion. The alignments also cross numerous mapped; therefore, destabilization of the natural or constructed slopes could occur.

Mitigation. Measures proposed to reduce impacts include: (1) Implement an Erosion Control Plan and demonstrate compliance with water quality permits; and (2) Conduct geological surveys for landslides and protect against slope instability. In addition, SCE has also included APMs to reduce impacts.

- Unsuitable soils where proposed Project structures and facilities will be constructed could cause damage to these structures and facilities. Soils along the proposed Project segments have a potential to corrode steel and concrete ranging from low to high. In areas where corrosive subsurface exist along the proposed route, the corrosive soils could have a detrimental effect on concrete and metals. Some of the soils along the proposed Project have moderate to high clay contents and many have moderate to high shrink-swell potential. Expansive soils may cause differential and cyclical foundation movements that can cause damage and/or distress to structures and equipment.

- **Mitigation.** The measure proposed to reduce this impact is as follows: Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design. In addition, SCE has also included APMs to reduce impacts. Project facilities and transmission line structures would be subject to hazards of surface fault rupture at crossings of eight active faults. Moderate to severe groundshaking should be expected in the event of an earthquake on the faults in the Project area and from other major faults in the region. It is likely that the Project facilities would be subjected to at least one moderate or larger earthquake occurring close enough to produce local strong to severe groundshaking along portions of Segments 4, 5, 6, 7, 9, and 11.

Mitigation. Measures proposed to reduce impacts include: (1) Minimize Project structures within active fault zones; (2) Prepare fault rupture contingency plans to minimize repair time for damaged transmission lines; (3) Reduce effects of groundshaking; (4) Conduct geotechnical investigation for liquefaction; (5) Conduct geological surveys for landslides and protect against slope instability. In addition, SCE has also included APMs to reduce impacts.

- Grading and excavation could destroy paleontologic resources. In particular, grading activities for new access and spur roads, and excavation for tower and substation building foundations could encounter potentially fossil-bearing deposits throughout nearly all of the proposed Project segments underlain by Quaternary alluvial deposits (Segments 4, 5, 7, 8, 9, 10, and 11) and Tertiary sedimentary rock in the Montebello, Puente, and Chino Hills (Segment 8). Construction activities could destroy fossils contained in the earth materials and the opportunity to properly retrieve, study, catalog and archive them would be lost.

Mitigation. No additional mitigation is required beyond implementation of the SCE included APMs which results in a less than significant impact. Implementation of the proposed Project is not expected to disturb or otherwise adversely affect unique geologic features or geologic features of unusual scientific value for study or interpretation.

Cumulative Impacts

It has been determined that three impacts associated with the proposed Project, as identified in Section 3.7.6.1 of the EIR/EIS, would not be cumulatively considerable and therefore would not contribute to cumulative impacts. These impacts include the following: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. The potential for these impacts to combine with similar effects of other projects would only occur if other projects were implemented in the same area at the same time as the proposed Project. However, construction of the proposed Project would preclude other projects from being implemented concurrently in the same location. Therefore, these proposed Project impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.

The following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; and grading and excavation could destroy paleontologic resources. Mitigation measures introduced for the proposed Project in Section 3.7.6.1 of the EIR/EIS (Direct and Indirect Effects Analysis) would help to reduce the proposed Project's incremental contribution to cumulative impacts. No additional mitigation measures would be needed to reduce cumulative impacts to a less-than-significant level for geologic, soils, and paleontologic resources.

3.7.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Although this alternative introduces a re-route of part of Segment 4 of the proposed transmission line, impacts associated with Alternative 3 would be the same as impacts associated with the proposed Project. There are no known mineral resource sites along the re-route; and this alternative would pass the same oil fields noted above and would therefore not interfere with oil field operations.

The geologic materials, soils, and very gentle slopes would be identical to those of the proposed Project and there would be no substantial increase in the potential for erosion or slope failure triggered or accelerated due to construction activities.

There are no fault crossings along the re-route, and the potential for liquefaction and earthquake induced slope failures along Alternative 3 are identical to the proposed Project. Therefore, the potential of surface fault rupture is the same as Alternative 2. However, the minimally longer length of the reroute for this alternative compared to the proposed Project would result in incrementally increased opportunity for damage to Project structures from seismically induced groundshaking along the reroute.

The geologic materials would be identical to those of the proposed Project and there would be no substantial increase in the potential for grading and excavation to destroy paleontologic resources.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to energy resources, erosion, landslides, and active fault zones and earthquakes. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, the following impacts would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. And the following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; and grading and excavation could destroy paleontologic resources. There are no significant cumulative effects of Alternative 3 related to geology, soils, and paleontology and no additional mitigation is required.

3.7.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

This alternative would follow the same route as the proposed Project with the exception that it would diverge from the proposed Project route along Segment 8A, MP 19.2. Therefore, any impacts of the proposed Project that would occur between S8A MP 19.2 and 35.2 (16 miles) through Chino Hills, Chino, and Ontario would not occur under Alternative 4. Where the proposed route for Alternative 4 diverges from the proposed Project route, it would turn to the southeast, crossing through part of Orange County, San Bernardino County, and the CHSP. Therefore, Alternative 4 would introduce the potential to result in Geology, Soils, and Paleontology impacts in these areas which would not be affected by the proposed Project.

There are no known mineral resource sites along the re-route; and this alternative would pass the same oil fields noted above and would therefore not interfere with oil field operations. The shorter length of all four routes of Alternative 4, compared to the proposed Project, would result in incrementally decreased opportunity to impact geologic, soil and paleontologic impacts. However, in comparison to the proposed Project, the lengths of each route alternative would increase through the Puente Formation (ranging from 6.2 to 12.4 miles versus 5.9 miles for the comparable portion of Segment 8A), or would cross through the Chino Fault instead of the Chino-Central Ave Fault; therefore, resulting in slightly different impacts than the proposed Project. For the purposes of this impact analysis, the routing options for Alternative 4 are discussed in comparison to each other throughout the following discussion.

Route A. Route A would be approximately 9.8 miles shorter than the proposed Project resulting in reduced ground disturbance. However, Route A would be 0.3 miles longer than the proposed Project within hillside areas with slope stability issues resulting in slightly greater potential to cause slope instability, trigger landslides, or result in problematic soils that could damage Project structures. Impacts related to fault crossings would be the same as the proposed Project, with the exception of one less fault crossing (would not cross the Chino-Central Ave fault). However, the increased length (approximately 0.3 mile longer) of transmission line within hillside areas with slope stability issues results in a slightly greater potential for earthquake induced slope failure.

Route B. Erosion or construction-triggered slope instability impacts of Route B would be incrementally greater than Route A due to the longer alignment (2.4 miles longer). Route B would be similar to Route A with regards to active faults, with the exception that the eastern end of Route B and its associated switching station cross the Alquist-Priolo zoned Chino fault. In addition, the potential for earthquake induced slope failures along Route B would be incrementally greater than Route A due to the 2.4 mile longer alignment.

Route C. Route C would consist of about 6.2 more miles of transmission line alignment than Route A, resulting in an incremental increase in potential to cause erosion or construction-triggered slope instability. Removal of about 5.7 miles of transmission line/structures with nominal ground disturbance and site restoration is not anticipated to result in an increase in slope instability or trigger landslides. Impacts related to active faults would be exactly the same as Route A, and the increased length of Route C would result in an incremental increase in potential for earthquake induced slope failures.

Route D. Route D of Alternative 4 is about 3.4 miles longer than Route A, therefore resulting in incrementally greater construction-related erosion or construction-related slope instability impacts. Impacts related to active faults to Route A, with the exception that eastern end of Route D and its associated switching station cross the Alquist-Priolo zoned Chino fault, the increased length of Route D would result in an incremental increase in the potential for earthquake induced slope failures.

The shorter length of all four routes of this alternative compared to the proposed Project would result in incrementally decreased opportunity to encounter and destroy paleontologic resources as a whole. However, each of the Alternative 4 route options is within the paleontologic-rich Puente Formation (high sensitivity) and is longer than the comparable portion of the proposed Project within these same formations (0.3 to 6.5 miles longer). Alternative 4 would eliminate approximately 3.6 to 9.2 miles of paleontologically sensitive Puente Formation and alluvium along Segment 8A, and 6.8 and 6.4 miles of paleontologically sensitive alluvium along Segments 8B and 8C, respectively.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts related to potential interference with energy resources, erosion, landslides, and active fault zones and earthquakes. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, the following impacts would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. And the following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; and grading and excavation could destroy paleontologic resources. There are no significant cumulative effects of Alternative 4 related to geology, soils, and paleontology and no additional mitigation is required.

3.7.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

The underground portion of the alignment would require excavation and grading of transition stations at either side of the underground portion (approximately 1.8 acres each), that would equal more ground disturbance than that required for the towers that would be replaced by construction of the underground portion of Alternative 5, resulting in incrementally greater ground disturbance compared to Alternative 2 and would result in increased opportunity to cause construction triggered erosion. Construction of the tunnel and transition stations would incrementally decrease the potential of construction triggered landslides due to the decreased number of construction sites along potentially unstable slopes underlain by landslide prone Puente Formation. Existing structure could be damaged by ground settlement along the tunnel.

Erosion would be greater under Alternative 5 than it would for Alternative 2. The proposed underground portion of Alternative 5 and the associated transition stations are located along moderate to gentle hillside areas on the eastern slopes of the Chino Hills on soils with severe to very severe erosion potential. Alternative 5 would require the excavation and grading of large transition stations at either side of the underground portion (approximately 1.8 acres each), resulting in a slightly greater potential for erosion along Alternative 5 due to the smaller amount of ground disturbance that would be required for construction of the towers for the equivalent section of Alternative 2.

Although Alternative 5 is located in hillside areas with mapped landslides and significant potential for slope failure identical to the equivalent portion of Alternative 2, the tunneling required to complete the underground installation of transmission lines for Alternative 5 would bypass slopes underlain by potentially unstable Puente Formation where tower foundations would otherwise be constructed, thus decreasing the potential that project excavation would result in slope instability or landslides along the underground portion of the alignment.

The trend to the active Chino fault, potentially places the fault within or adjacent to the planned location for the eastern transition station for the underground portion of Alternative 5, which results in a potential for damage at these facilities due to surface fault rupture. The remainder of the Alternative 5 alignment would be identical to Alternative 2 and have the same fault rupture impacts. Additionally, the portions of the Alternative 5, equivalent to the Segments 11 and 8A where the routes cross and then run parallel to and within the Sierra Madre and Whittier fault zones, respectively, are at substantial risk of damage to multiple structures should an earthquake and ground rupture occur along these portions of the respective faults.

There is potential for tunneling activities to encounter unstable geologic units or cause geologic units to become unstable and cause local subsidence and settlement of the overlying ground surface and result in damage to structures adjacent to the alignment. Tunneling through the unconsolidated alluvium from approximately MP S8A-24.5 to 25.5 could encounter flowing or running sands although the use of an earth-pressure balance tunnel boring machine (EPB TBM) or slurry-pressure balance machine (SPB TBM) to create a pressurized-face will effectively control rapid or excessive inflows. Similarly, excavation of the large eastern access shaft in saturated unconsolidated alluvium could encounter soft sediment or flowing sands. The access shaft excavation will be advanced as the permanent shoring is set and grouted to prevent entry of groundwater. This approach would effectively control inflows and limit the amount of ground settlement around the perimeter of the shaft. Excavation of the tunnel and shafts in the Tertiary

age bedrock of eastern Chino Hills (MP S8A-21.9 to 24.5) is not anticipated to cause ground settlement and the use of a conventional (non-pressure balance) TBM may be adequate.

Mitigation. The following proposed measure would reduce potential impacts: Conduct geotechnical analysis of settlement potential during design and implement a Subsidence Monitoring Program during construction to protect against ground settlement.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts related to potential interference with energy resources, erosion, landslides, and active fault zones and earthquakes.

Cumulative Impacts

As discussed for the proposed Project, the following impacts would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. And the following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; grading and excavation could destroy paleontologic resources; and existing structures could be damaged by ground settlement along the tunnel. There are no significant cumulative effects of Alternative 5 related to geology, soils, and paleontology and no additional mitigation is required.

3.7.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Alternative 6 is identical to the proposed Project (Alternative 2), except along Segment 6 and Segment 11 where helicopter construction would be used to the maximum extent feasible in the ANF portion of the route. This alternative would include construction of 10 helicopter staging areas in the ANF, several of which would require significant grading (cut and fill). As a result of helicopter construction, some access and most spur roads would not be created and/or upgraded for ground access to towers along these portions of Segment 6 and Segment 11. However, many unpaved access roads would still require some upgrading and or regrading for access by construction personnel. This alternative would result in approximately 37 fewer acres of temporary ground disturbance in the ANF, 20 fewer acres of temporary ground disturbance total, and approximately 24 fewer acres of permanent ground disturbance than Alternative 2. Despite the increased use of helicopter construction techniques for the ANF portions of Segment 6 and Segment 11, the transmission line route traversed by Alternative 6 would be identical to that of Alternative 2.

Although Alternative 6 would require ground disturbance and grading for ten helicopter staging areas through the ANF that are not included in any of the other alternatives, the associated decrease in grading that would be required for the fewer number of access and spur roads that would be needed results in slightly less ground disturbance compared to the equivalent portion of Alternative 2. The helicopter staging areas are located in soils with similar erosion characteristics as other features of the proposed Project, roads and towers, and therefore the decrease in ground disturbance in the ANF portion of

Alternative 6 would correspondingly decrease the potential for construction triggered erosion as compared to the equivalent portion of Alternative 2.

Additionally, despite the location of most of the helicopter staging areas in steep landslide prone terrain, the overall decrease in ground disturbance and grading in steep landslide prone terrain reduces the potential for construction triggered landslides and slope instability as compared to the equivalent portion of Alternative 2.

None of the helicopter staging sites would be located at known mineral resource sites, would cross faults, or be located in areas of paleontologic sensitivity and therefore would not change the potential for the impacts as compared to Alternative 2. As the transmission alignments for Alternative 6 are identical to Alternative 2, the potential for seismic impacts and impacts from landslide during project operation would be identical to impacts associated with Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to potential interference with energy resources, erosion, landslides, and active fault zones and earthquakes. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, the following impacts would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. And the following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; and grading and excavation could destroy paleontologic resources. There are no significant cumulative effects of Alternative 6 related to geology, soils, and paleontology and no additional mitigation is required.

3.7.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Alternative 7 is identical to the proposed Project (Alternative 2), except along Segments 7 and 8A where three 66-kV subtransmission line elements would be undergrounded or relocated. The three 66-kV subtransmission line elements include the following: (1) Undergrounding the 66-kV subtransmission line in Segment 7 through the River Commons or Duck Farm Project (between Valley Boulevard – S7 MP 8.9 and S7 MP 9.9); (2) Re-routing and undergrounding the 66-kV subtransmission line around the Whittier Narrows Recreation area in Segment 7 (S7 MP 11.4 to 12.025); and (3) Re-routing the 66-kV subtransmission line around the Whittier Narrows Recreation Area in Segment 8A between the San Gabriel Junction (S8A MP 2.2) and S8A MP 3.8. Other than the minor 66-kV re-routes and underground construction described above for the three elements of Alternative 7, this alternative would be identical to the proposed Project (Alternative 2) as discussed in Sections 3.7.2.1 and 3.7.2.2 of the EIR/EIS. All substation and information technology facilities would also be identical to the proposed Project. Therefore, with the exception of the minor differences in alignment for the three 66-kV re-routes, Alternative 7 would be identical to that of Alternative 2 and thus the geologic, seismic, and paleontologic setting and impacts along the Alternative 7 would be identical to the proposed Project (Alternative 2).

The geologic and seismic setting along the three 66-kV re-routes is nearly identical to the corresponding nearby portions of the proposed Project alignment due to their close proximity. Therefore impacts associated with Alternative 7 would be the same as impacts associated with the proposed Project.

The geologic materials and soils along Alternative 7 are the same as for the corresponding portions of the proposed Project, however Alternative 7 includes two short segments (1.625 miles total) of underground construction for two of the 66-kV re-routes, consisting primarily of trenches and vault excavations, and construction of several new poles for the overhead re-route which slightly increases ground disturbance for this alternative, resulting in a corresponding slight increase in the potential for construction related erosion. Additionally, the increase ground disturbance for excavations for underground construction and new poles for the 66-kV re-routes in the San Gabriel Valley and Whittier Narrows areas also slightly increases the potential to damage or destroy paleontologic resources in young alluvium which has moderate paleontologic sensitivity in comparison to Alternative 2. All other impacts related to this alternative are identical to Alternative 2.

There are no known mineral resource sites along the re-route; and this alternative would pass the same oil fields noted above and would therefore not interfere with oil field operations. The gently sloping to flat terrain along the 66-kV re-routes is the same as for the corresponding portions of the proposed Project and would not be subject to construction triggered or accelerated slope failures, or slope failure during project operation.

There are no fault crossings along the re-routes, and the potential for damage to Project structures from seismically induced groundshaking, liquefaction, and earthquake induced slope failures along Alternative 7 are identical to the proposed Project. Therefore, the potential seismic related impacts are the same as Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to energy resources, erosion, landslides, and active fault zones and earthquakes. No additional mitigation is recommended.

Cumulative Impacts

As discussed for the proposed Project, the following impacts would not have the potential to combine with impacts of other past, present and reasonably foreseeable projects: project activities could interfere with access to known energy resources; erosion could be triggered or accelerated due to construction activities; and excavation and grading during construction activities could cause slope instability or trigger landslides. And the following impacts would combine but not be cumulatively significant with impacts of other past, present and reasonably foreseeable projects: project structures could be damaged by surface fault rupture at crossings of active faults, by seismically induced groundshaking and/or ground failure, or by problematic soils; transmission line structures could be damaged by landslides, earth flows, or debris slides during operation; and grading and excavation could destroy paleontologic resources. There are no significant cumulative effects of Alternative 7 related to geology, soils, and paleontology and no additional mitigation is required.

3.8 Hydrology and Water Quality

Section 3.8 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to hydrology and water quality. A summary of the effects on hydrology and water resources is presented below.

3.8.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Under the No Project/Action Alternative, construction, operation, and maintenance of the proposed Project or an alternative would not occur. As such, the hydrology and water quality impacts that would occur under the proposed Project or an alternative would not occur. However, in the absence of the proposed Project or an alternative to the Project, the purposes and need for the power transmission capabilities that would be met by TRTP would not be achieved. As a result, it is possible that another, similar transmission line project would be constructed in the future to meet the power transmission needs of developing wind farms in the Tehachapi Wind Resource Area. Such a project would likely introduce similar impacts to hydrology and water quality that would be introduced through the proposed TRTP or an alternative.

Cumulative Impacts

Under Alternative 1, the hydrology and water quality impacts identified for Alternatives 2 through 7 would not occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA and therefore, potential adverse hydrology and water quality impacts would occur similar to the proposed Project and alternatives, and would likely produce cumulatively considerable impacts. As with the proposed Project, implementation of mitigation measures would reduce cumulative impacts to a less-than-significant level.

3.8.2 Alternative 2: SCE's Proposed Project

Implementation of Alternative 2, SCE's proposed Project, would result in the following direct and indirect hydrology and water quality impacts:

- Project construction, operation, and maintenance activities would cause and/or contribute to surface and groundwater degradation through soil-disturbing activities that result in erosion and sedimentation, including but not limited to the following: excavation and grading work at all tower sites; clearing of vegetation at tower sites and other work areas; and road construction and improvements, including widening of access and spur roads. Project construction, operation, and maintenance activities would also cause and/or contribute to the degradation of surface water and groundwater quality through the accidental release of potentially harmful or hazardous materials, particularly substances associated with the use of construction vehicles and equipment, such as the following: diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, and cement slurry, among others.

Mitigation. In addition to the Applicant-Proposed Measures (APM) included as part of the proposed Project, implementation of the following mitigation measures are required: (1) Implement an Erosion Control Plan and demonstrate compliance with water quality permits; and (2) Dry weather construction.

- Encroachment of a Project structure (transmission tower) into a stream channel or floodplain could result in the following: flooding of or erosion damage to the encroaching structure; diversion of flows and increased flood risk for adjacent property; and/or or increased erosion on adjacent property. The proposed transmission line route crosses through a number of FEMA-designated Flood Hazard Areas; according to FEMA, development is permitted in designated Flood Hazard Areas providing that development activities are in compliance with all local floodplain management ordinances.

Mitigation. The measure proposed to reduce this impact is as follows: Implement an Erosion Control Plan and demonstrate compliance with water quality permits.

- Damage to Project structures would occur as a result of inundation by mudflow. A mudflow event is caused by a combination of factors, including soil type, precipitation, and slope, and may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. As a result of this super-saturation, soil and rock materials become unstable and eventually slide away from their initial location.

Mitigation. The measure proposed to reduce this impact is as follows: Conduct geological surveys for landslides and protect against slope instability.

Cumulative Impacts

With regard to cumulative hydrology and water quality impacts, the proposed Project's contribution to a cumulative impact would only be considered significant if it combines with similar impacts of other projects. For the reasons discussed in Section 3.8.6.2 of the EIR/EIS (Hydrology and Water Quality: Cumulative Effects Analysis), the proposed Project's contribution to cumulative impacts would be cumulatively considerable.

3.8.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Impacts associated with Alternative 3 would be similar to the impacts associated with those of the proposed Project. This alternative would introduce a re-route of part of the proposed transmission line in the Northern Region, which would cross three of the same unnamed streams as the proposed Project as well as two additional unnamed streams. The two additional unnamed streams do not differ in channel type or flow characteristics from the other unnamed nearby streams that are crossed by the proposed Project. Therefore, the hydrology and water quality impacts of Alternative 3 would be nearly identical to the proposed Project but of a slightly greater magnitude. The hydrology and water quality impacts that are expected to occur under Alternative 3 can be mitigated to a level of less than significant with the same measures that are outlined above for the proposed Project. No additional mitigation measures would be necessary.

Cumulative Impacts

The minor re-route of the proposed Project transmission line associated with Alternative 3 would not affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2.

3.8.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

This alternative includes four separate routing options: Route A, Route B, Route C, and Route D and would follow the same route as the proposed Project through the Northern and Central Regions, diverging from the proposed Project route along Segment 8A in the Southern Region, at S8A MP 19.2. Therefore, any hydrology and water quality impacts of the proposed Project that would occur between S8A MP 19.2 and 35.2 (16 miles) through Chino Hills, Chino, and Ontario would not occur under Alternative 4. Where the proposed route for Alternative 4 diverges from the proposed Project route at S8A MP 19.2, it would turn to the southeast, crossing through part of Orange County, San Bernardino County, and the Chino Hills State Park (CHSP). As such, Alternative 4 would introduce hydrology and water quality impacts to these areas which would not be introduced through the proposed Project, and different streams and/or groundwater basins would be avoided and/or affected under each routing option.

The expected degree to which water quality degradation would occur as a result of Alternative 4 would be slightly greater than the proposed Project due to the increased potential for erosion and sedimentation through CHSP. In addition, as mentioned above, the four different routing options included under Alternative 4 would avoid some surface water and groundwater resources along the proposed Project alignment and would introduce other stream crossings associated with each of the four routing options. All routing options for Alternative 4 would cross nine unnamed streams before they diverge near the border of CHSP. After the four routing options for Alternative 4 diverge, they differ in terms of number of streams crossed. Route A would cross five unnamed streams. Route B would cross eight streams, including Aliso Creek and seven unnamed streams. Route C would cross ten unnamed streams. Route D would cross four streams, including Aliso Creek and three unnamed streams. Nonetheless, under Alternative 4, all potential impacts related to water quality and flood damage can be mitigated to a level of less than significant with the same measures that are outlined above for the proposed Project. No additional mitigation measures would be necessary.

Cumulative Impacts

The proposed routing options included under Alternative 4 would have the potential to incrementally increase or decrease the proposed Project's contribution to cumulative impacts because they would affect surface and groundwater resources that would not be affected by the proposed Project, and they would likewise avoid effects to some surface water and groundwater resources that would be impacted by the proposed Project. The analysis of the Alternative 4 routing options provided in Section 3.8.8.1 of the EIR/EIS (Hydrology and Water Quality: Cumulative Effects Analysis) indicates that although there would be some location-specific differences between the proposed Project and the Alternative 4 routing options, such location-specific differences are limited to a portion of the Southern Region and across the entirety of the proposed routes (including the proposed Project), the nature of impacts that would occur are the same between the proposed Project and Alternative 4. As such, the contribution of Alternative 4 to cumulative impacts would be the same as the proposed Project's contribution.

3.8.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

This alternative places a portion of the proposed transmission line underground through the City of Chino Hills. This would avoid eight stream crossings that would otherwise be crossed by the proposed Project, including three unnamed streams and five crossings of Little Chino Creek. Aside from the eight stream crossings that would be avoided, all remaining stream crossings for Alternative 5 are the same as for the proposed Project. Impacts associated with Alternative 5 would be similar to the impacts associated with the proposed Project except for the impacts noted below.

- This alternative would place transmission infrastructure between 100 and 400 feet below ground, thereby encountering the Chino Subbasin of the Upper Santa Ana Valley Groundwater Basin. Construction of the eastern access shaft for this alternative would require excavation down to 100 feet, where the groundwater level is approximately 75 feet below ground surface (bgs). As a result, dewatering activities would likely be required to accommodate construction of this underground segment. Improper design and/or implementation of a dewatering plan could result in discharge of contaminated groundwater to a surface waterbody, which would subsequently lead to degradation of surface water quality.

Mitigation. The measure proposed to reduce this impact is as follows: Implement an Erosion Control Plan and demonstrate compliance with water quality permits. Under Alternative 5, all potential impacts

can be mitigated to a level of less than significant with the same mitigation measures that are outlined above for the proposed Project. No additional mitigation measures would be necessary.

Cumulative Impacts

Alternative 5 would introduce one new impact compared to the proposed Project: the potential degradation of surface water quality from discharge of contaminated groundwater during dewatering operations. However, this impact would not be cumulatively considerable because implementation of project mitigation measures would require demonstrated compliance with National Pollutant Discharge Elimination System (NPDES) discharge permits and therefore any dewatered groundwater would be tested and treated prior to discharge. The discharge of clean and/or treated groundwater would not have the potential to combine with impacts from other projects because the clean and/or treated discharge would not contribute to the degradation of surface water. As such, the contribution of Alternative 5 to cumulative impacts would be the same as the proposed Project's contribution.

3.8.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Hydrology and water quality impacts that would occur as a result of Alternative 6 would be the same as those under the proposed Project, but would occur to a lesser magnitude because the decreased ground construction activities required for Alternative 6 would introduce a slightly lesser potential for erosion and sedimentation. The proposed route for Alternative 6 is the same as the proposed Project and therefore, the streams that would be traversed by Alternative 6 are largely the same as those that would be traversed under the proposed Project. This alternative includes helicopter construction of 146 transmission towers in the ANF, thereby reducing or avoiding the need to install spur roads to these towers; additionally, some access roads that would be improved or widened for the proposed Project would not be altered under Alternative 6. Therefore, Alternative 6 requires less road construction in the ANF and would introduce less of a potential for erosion and sedimentation to occur as a result of road construction. The hydrology and water quality impacts of Alternative 6 would be nearly identical to the proposed Project but of a slightly lesser magnitude. For a list of streams within the ANF that would be affected by access and spur roads (both under the proposed Project and this alternative), see Section 3.4 of the EIR/EIS (Biological Resources).

Cumulative Impacts

Impacts associated with Alternative 6 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The introduction of helicopter construction within the ANF associated with Alternative 6 would not affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 6 would be exactly the same as cumulative impacts for Alternative 2.

3.8.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Impacts associated with Alternative 7 would be similar to the impacts associated with the proposed Project. This alternative places a portion of the 66-kV subtransmission line underground in Segment 7. All stream crossings for Alternative 7 are the same as for the proposed Project. Additionally, because this alternative would place subtransmission infrastructure below ground, the San Gabriel Valley Groundwater

Basin would be encountered. Impacts associated with Alternative 7 would be similar to the impacts associated with the proposed Project except for the impacts noted below.

- This alternative would increase the potential for degradation of the groundwater in the San Gabriel Valley Groundwater Basin through the accidental release of potentially harmful or hazardous materials. Although depth to groundwater in this Basin is approximately 150 feet bgs or more, locally elevated pockets of groundwater could be encountered while routing the subtransmission line under the San Gabriel River. Dewatering may be necessary. Therefore, this alternative would increase the potential for degradation of groundwater quality through release of potentially harmful or hazardous materials, such as hydraulic fluid, engine oil, and lubricants.

Mitigation. The measure proposed to reduce this impact is as follows: Implement an Erosion Control Plan and demonstrate compliance with water quality permits. Under Alternative 7, all potential impacts can be mitigated to a level of less than significant with the same measures that are outlined above for the proposed Project. No additional mitigation measures would be necessary.

Cumulative Impacts

This alternative would introduce one new impact compared to the proposed Project: the potential degradation of surface water quality from discharge of contaminated groundwater during dewatering operations. However, this impact would not be cumulatively considerable because implementation of project mitigation measures would require demonstrated compliance with National Pollutant Discharge Elimination System discharge permits and therefore any dewatered groundwater would be tested and treated prior to discharge. The discharge of clean and/or treated groundwater would not have the potential to combine with impacts from other projects because the clean and/or treated discharge would not contribute to the degradation of surface water. As such, the contribution of Alternative 7 to cumulative impacts would be the same as the proposed Project's contribution.

3.9 Land Use

Section 3.9 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to land use. A summary of the effects on land uses is presented below.

3.9.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented; therefore, the land use impacts associated with either the proposed Project or Alternatives 3 through 7, as described in the following sections, would not occur. However, in the absence of either the proposed Project or one of its alternatives, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet power transmission needs, and it would likely result in impacts to land use similar or in addition to those resulting from either the proposed Project or one of its alternatives.

Cumulative Impacts

Under the No Project/Action Alternative, none of the impacts to land use that are associated with the proposed Project (Alternative 2) would occur. However, as noted above, SCE would still need to upgrade the existing power transmission infrastructure in order to accommodate the power load. As discussed in the Section 3.9.5.1 (Land Use, Alternative 1 – Cumulative Effects Analysis) of the EIR/EIS, it is possible

that a similar type of transmission line project would be constructed in the future to meet the power transmission needs of developing wind energy in the Tehachapi Wind Resource Area (TWRA) which would introduce similar types of impacts as the proposed Project to land use such as: a preclusion, disruption, or division of planned and permitted land uses; short- or long-term conflicts with surrounding land uses; or, inconsistencies with federal, State or local land use policies or regulations. Construction would not contribute to a long-term cumulatively considerable effect. Operation and maintenance would cause long-term disruption of existing and planned residential land uses in combination with other energy projects; however they would result in a less-than-significant cumulative impact.

3.9.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following direct and indirect effects on land use:

- Construction-related activities would require the temporary use of lands for purposes other than their existing or planned use. The use of these lands may, in turn, restrict access to, or otherwise impede the use of, the properties that surround them. Construction would also cause temporary disturbances due to site-specific access limitations and parking restrictions, increased traffic and congestion along construction routes and detour routes, increased dust generation and noise, and changes in the overall character of a given area due to the presence of construction-related equipment, personnel and associated activities. All of these effects would temporarily disrupt, displace or preclude existing and planned residential and non-residential land uses within and adjacent to the ROW, as well as within and adjacent to staging areas, pulling, tensioning and splicing sites, substation sites, and new and improved access and spur roads. Indirect impacts due to construction could occur at locations as much as 1,000 feet away from construction zones. Additionally, the proposed Project would be within 20,000 linear feet (approximately 3.79 miles) of several airports, and construction-related activities (tower erection and pulling and stringing) could potentially affect aircraft movement and navigable airspace.

Mitigation. Measures proposed to reduce construction-related impacts include: (1) establishing a point of contact for the duration of construction to address to construction-related comments, questions and conflicts (Construction liaison – Property owners); (2) providing notification of the start of construction to affected property owners (Advance notification of construction – Residential Property owners and Construction plan provisions – Non-residential property owners); (3) providing on-going construction schedules to affected property owners (Bi-monthly construction updates - Property owners); and, (4) ensuring that construction-related activities do not conflict with aircraft operations and flight paths (Aircraft flight path and safety provisions and consultations).

- Operation and maintenance of the proposed Project along segments that require new or expanded ROW (such as Segment 10), the new Whirlwind Substation, and expansion of the existing Antelope and Vincent Substations outside of their existing boundaries would cause the long-term disruption of existing land uses, and prevent any future planned land uses within their respective site or ROW boundaries. Additionally, the proposed Project would fall within one-half mile of lands managed by several State and federal agencies, and within 20,000 linear feet (approximately 3.79 miles) of several public and private airports and heliports. The proposed Project's proximity to these lands could conflict with or otherwise compromise their respective land management activities.

Mitigation. Long-term impacts to existing and planned residential land uses due to operation and maintenance of the proposed Project would be expected to be adverse but less than significant. However, operation and maintenance of the proposed Project could preclude or restrict the management and uses of

non-residential lands. The measure proposed to reduce this impact to less than significant is for SCE to consult with affected federal, State and local land management agencies, as needed, for the lifetime of the proposed Project to avoid, or otherwise reconcile conflicts with, land management practices (Consult with federal, State and local agencies).

- The proposed Project traverses or falls within one-half mile of multiple federal, State and local jurisdictions (counties and incorporated cities), all of which have adopted plans related to land use planning, development, and management. As noted above, the proposed Project also falls within 20,000 linear feet (approximately 3.79 miles) of several public and private airports and heliports. Construction, operation and maintenance of the proposed Project could conflict with the land management plans and related policies, goals and objectives of these jurisdictions. Additionally, the proposed Project would require three amendments to USDA Forest Service's Land Management Plan for the ANF. Potential conflicts with existing land use plans, policies, goals and objectives could result in potentially significant impacts.

Mitigation. To avoid significant conflicts with adopted land use plans, policies, goals and objectives, the following measures have been proposed: (1) coordinate with applicable federal, State and local jurisdictions, as needed, prior to construction and for the lifetime of the proposed Project to avoid or otherwise reconcile conflicts with land use plans and practices (Consult with federal, State and local agencies); and, (2) ensure that construction, operation and maintenance of the proposed Project do not conflict with aircraft operations and flight paths (Aircraft flight path and safety provisions and consultations).

Cumulative Impacts

Other projects in the North, Central and South Regions of the cumulative impact scenario (including past, present, and future projects) introduce impacts to land use that would be similar to the impacts described above. As discussed in Section 3.9.6.2 (Land Use, Alternative 2 – Cumulative Effects Analysis) of the EIR/EIS, the proposed Project's impacts related to the short- and long-term disruption, displacement or preclusion of existing and planned residential and non-residential land uses would not create an incremental effect that, in combination with other projects, would result in any cumulative impacts that cannot be mitigated to a level of less than significant. Similarly, with implementation of recommended mitigation measures, the proposed Project would not incrementally contribute to any significant and unavoidable impacts associated with conflicts with adopted land use plans, policies, goals and objectives.

3.9.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Implementation of Alternative 3 would introduce a re-route to part of the proposed Project's Segment 4 between MP14.9 and MP 17.9. In comparison to the proposed Project, this re-route would avoid construction-related impacts to existing rural residential homes situated along the east and west sides of 100th Street between Avenues I and J. All other residential and non-residential land uses affected by this alternative in the North, Central and South Regions would be identical to the proposed Project during both construction and operation and maintenance. Similarly, the same land use plans, goals and policies that would apply to the proposed Project would be applicable to Alternative 3. Consequently, potential impacts related to conflicts with these land use plans, goals, or policies would be identical to the proposed Project. Under Alternative 3, all potential land use impacts can be mitigated to a level of less than significant with the same measures that are outlined above for the proposed Project. No additional mitigation measures would be necessary.

Cumulative Impacts

Impacts associated with Alternative 3 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of Segment 4 that would occur under Alternative 3 would not differ from the proposed Project's contribution to cumulative impacts. Consequently, the cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2. No significant and unavoidable cumulative impacts to land use would occur.

3.9.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

Under Alternative 4, no construction-related activities or operational and maintenance activities along MP 19.2 through MP 35.2 of Segment 8A, MP 0.0 through MP 6.8 of Segment 8B, or MP 0.0 through MP 6.4 of Segment 8C would occur. Consequently, there would be a significant decrease in the short- and long-term impacts to residential and non-residential uses within the cities of Chino Hills, Chino and Ontario. Along all other Project segments the short- and long-term impacts of Alternative 4 on residential and non-residential land uses would be identical to Alternative 2, as described above. All potential land use impacts can be mitigated to a level of less than significant with the same measures that are outlined for the proposed Project. No additional mitigation measures would be necessary.

Alternative 4 would, however, require routing the Project through Chino Hills State Park (Park), and could require the construction and operation of a switching station within the Park as well (Route A). Within the Park, conflicts with existing non-residential land uses and management activities would be considered adverse and significant, and no additional mitigation measures have been identified to reduce the resulting impacts of these conflicts to a level of less than significant.

Alternative 4 would be located within the same jurisdictions as the proposed Project along Segments 4, 5, 6, 7, 10 and 11. However, under Alternative 4, lands under the jurisdiction of Orange County and the City of Brea would also be traversed, and no jurisdictions associated with proposed Segments 8B and 8C or east of MP 19.2 of proposed Segment 8A would be affected. As a result, the land use plans and policies associated with the cities of Chino and Ontario would not apply, but the land use plans and policies for the City of Brea and Orange County would be applicable. Potential impacts related to inconsistencies with the City of Brea and Orange County General Plans can be mitigated to a level of less than significant with the same measures that are outlined for the proposed Project. No additional mitigation measures would be necessary. Implementation of Alternative 4 would not, however, be consistent with the Chino Hills State Park General Plan. Because the CPUC's General Order No. 131-D, Section XIC B, does not apply to State agencies with jurisdiction over facilities constructed for public utilities, consistency with the Chino Hills State Park General Plan would be required. Without amendment to the Park's General Plan, and subsequent approval of the amendment by the State Department of Parks and Recreation Commission, Alternative 4's resulting inconsistency with this General Plan would be considered a significant and unavoidable impact.

Cumulative Impacts

Impacts associated with Alternative 4 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 4 would result in significant and unavoidable impacts due to conflicts with existing non-residential land uses and management activities within Chino Hills State Park, and inconsistencies with the

Chino Hills State Park General Plan. Therefore, Alternative 4 would combine with the effects of other past, present and reasonably foreseeable projects to create cumulatively significant and unavoidable impacts. No additional mitigation measures have been identified that would reduce these cumulative impacts to a less-than-significant level. All other cumulative impacts associated with Alternative 4 would be identical to Alternative 2.

3.9.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

Implementation of Alternative 5 would be identical to the proposed Project, except between MP 21.9 and MP 25.8 of Segment 8A, where the Project would be placed underground. To accommodate one of Alternative 5's below- to above-ground transition stations, a portion of the Project's existing ROW width would need to be expanded by 100 feet; the expanded ROW would result in the permanent removal of a commercial car wash, a retail business, and a portion of a commercial parking lot. If the CPUC was required to exercise eminent domain to take these properties, the permanent loss of these non-residential land uses would be considered to be an unavoidable and significant impact. No mitigation measures have been identified to reduce this impact to a level of less than significant.

All other impacts would be the same as described for Alternative 2. Under Alternative 5, the mitigation described above for the proposed Project would be applicable to minimize impacts to land use. No additional mitigation is recommended.

Cumulative Impacts

As with Alternatives 2 through 4, the impacts associated with Alternative 5 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Implementation of Alternative 5 would potentially result in a significant and unavoidable impact on non-residential land uses if these uses are forced into abandonment from their current locations via eminent domain. Under this scenario, Alternative 5 would combine with the effects of other past, present and reasonably foreseeable projects to create a cumulatively significant and unavoidable impact on non-residential land uses. No additional mitigation measures have been identified that would reduce these cumulative impacts to a less-than-significant level. All other cumulative impacts associated with Alternative 5 would be identical to Alternative 2.

3.9.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

The proposed route for Alternative 6 would be exactly the same as that of the proposed Project (Alternative 2). However, under Alternative 6, helicopter staging and landing areas would be required within the ANF to maximize helicopter construction of Segments 6 and 11. All potential land use impacts associated with Alternative 6 would be identical to Alternative 2. However, under Alternative 6 the duration of construction-related temporary impacts to residential and non-residential land uses within the ANF would be anticipated to occur for a longer period of time due to the limited availability of specialized helicopters and personnel. Outside of the ANF, temporary impacts to land use would be identical to Alternative 2. The mitigation measures described above for the proposed Project would be required under this alternative; however, no additional mitigation is recommended.

Cumulative Impacts

Impacts associated with Alternative 6 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 6 changes the Project's construction method within the ANF, but is otherwise identical to Alternative 2. Consequently, this alternative has the same geographic extent for existing cumulative conditions as the proposed Project, and would result in the same cumulative effects as the proposed Project. No significant and unavoidable cumulative impacts to land use would occur. No additional mitigation is recommended.

3.9.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Under Alternative 7, two underground re-routes and one overhead re-route would be implemented along Segments 7 and 8A. As a result, this alternative would introduce a new construction method for undergrounding the transmission lines at two locations, and would also require new ROW for the eastern-most section of the overhead re-route to tie-into Segment 8A. Although construction of the underground re-routes would result in greater construction-phase land disturbances in comparison to Alternative 2, these disturbances would be temporary in nature. Additionally, assuming that SCE is able to secure the land needed for the new ROW referenced above, construction related disturbances along the overhead re-route would be anticipated to be the same as for the proposed Project. All other short-term, construction-related impacts to land use in the North, Central and South Regions would be identical to Alternative 2.

Activities associated with operation and maintenance of Alternative 7 essentially would be the same as for Alternative 2. However, under Alternative 7 it would be anticipated that the partial removal (e.g., undergrounding) of the existing Hondo-Amador-Jose-Mesa 66-kV and Jose-Mesa 66-kV subtransmission lines would likely be considered a beneficial impact to those residential and non-residential land uses that are adjacent to their respective ROWs. All other long-term impacts to land use in the North, Central and South Regions would be the same as for the proposed Project.

The same mitigation measures described for the proposed Project (Alternative 2) would be required under Alternative 7 to minimize impacts to land use. However, no additional mitigation is recommended.

Cumulative Impacts

As with all of the other alternatives, impacts associated with Alternative 7 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-routes associated with Alternative 7 would not, geographically, differ from the proposed Project's contribution to cumulative impacts. Consequently, the cumulative impacts of Alternative 7 would be exactly the same as the cumulative impacts for Alternative 2. No significant and unavoidable cumulative impacts to land use would occur.

3.10 Noise

Section 3.10 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to noise issues. A summary of the noise impacts is presented below.

3.10.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, impacts associated with the proposed Project and alternatives, as described in the following sections, would not occur. However, in the absence of the proposed Project or project alternative, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet the power transmission needs.

New construction activities and operating facilities would need to comply with local noise ordinances and the local licensing process, which would include strategies to reduce noise impacts. Substantial noise effects would occur for any noise sensitive uses near possible power plants, substations, and new transmission facilities could cause substantial operational and transmission line corona noise. Any new generation by wind turbines can also lead to excessive noise impacts near wind farms. The interaction of turbine rotors and uneven wind streams can cause annoying low-frequency noise that would disturb nearby noise-sensitive areas. Therefore, it is likely that under the No Project/Action Alternative, similar short-term and temporary construction noise impacts and adverse operational noise impacts similar to those described below for the proposed Project would occur.

Cumulative Impacts

Under Alternative 1, SCE would need to upgrade the existing infrastructure in order to accommodate the power load. As a result, cumulative noise impacts would be expected with construction of an alternative solution similar to those described below for the proposed Project.

3.10.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect noise impacts:

- Sensitive receptors located within 200 feet of proposed Project construction zones would be impacted by noise generated during construction. Although construction noise would be temporary and would be reduced by implementation mitigation and applicant proposed measures (APMs) to the extent feasible, the level of construction noise would violate a number local noise ordinances and standards pertaining to construction noise thresholds.

Mitigation. Mitigation and APMs proposed to reduce these impacts include: (1) Limit hours and days for construction; (2) Advance notification to receptors of times when and where noise impacts would occur; (3) Establish toll free number for receptors to call in noise complaints (4) The construction contractor shall implement best management practices for construction noise to reduce the effects of construction noise on sensitive receptors during construction; and (5) Aircraft flight path and safety provisions and consultations.

- Corona noise generated by the proposed Project along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by the proposed Project would violate a number of local noise ordinances and standards pertaining to operational noise thresholds.

Mitigation. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by the proposed Project, the increase in corona noise levels due to operation of the proposed Project within these segments would result in a significant impact.

Cumulative Impacts

Impacts associated with the proposed Project would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. If construction activities of the proposed Project and other identified nearby projects occurs concurrently, the combined effect of construction noise would be cumulatively significant. Similarly, construction activities associated with other projects in close proximity to the proposed Project could potentially occur at the same time as the proposed Project also violating local ordinances and standards pertaining to construction noise thresholds and further impact nearby sensitive receptors. Specific mitigation and APMs as identified above would reduce the proposed Project's contribution to cumulative noise impacts to the extent feasible, but cumulative impacts would remain significant.

Sensitive receptors located directly adjacent to the proposed Project along Segments 5, 6, 7, 8, 10, and 11 would be disturbed by operational corona noise. Future residential, commercial and industrial projects will result in the development of both sensitive receptors and noise-generating uses along the proposed Project route. Corona noise from the proposed Project would combine with noise from reasonably foreseeable projects within 0.25 mile to result in a cumulative significant impact to sensitive receptors and further escalate ambient noise conditions in excess of identified local policies and ordinance standards and thresholds.

3.10.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Although Alternative 3 introduces a re-route of part of Segment 4 of the proposed transmission line that would impact slightly fewer sensitive receptors than the proposed Project (Alternative 2), overall impacts to sensitive receptors along the approximate 170-mile long transmission route would be the same as identified for the proposed Project. Sensitive receptors located within 200 feet of Alternative 3 construction zones would be impacted by noise generated during construction. Mitigation and APMs described above for the proposed Project (Alternative 2) would also be required under this alternative, in order to minimize construction noise to the extent feasible. Although construction noise would be temporary and would be reduced by implementation of mitigation and APMs to the extent feasible, the level of construction noise would violate several local noise ordinances and standards pertaining to construction noise thresholds.

Although Alternative 3 would impact slightly fewer sensitive receptors than the proposed Project (Alternative 2), corona noise generated by Alternative 3 along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by Alternative 3 would violate a number of local noise ordinances and standards pertaining to operational noise thresholds. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 3, the increase in corona noise levels due to operation of Alternative 3 within these segments would result in a significant impact.

Cumulative Impacts

Although Alternative 3 would impact slightly fewer sensitive receptors than the proposed Project (Alternative 2), overall construction and operational impacts would remain significant for Alternative 3

and would contribute to cumulatively significant noise impacts. Therefore, the cumulative impacts of Alternative 4 would be similar as cumulative impacts for the proposed Project (Alternative 2). No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.10.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

Alternative 4 Routes A-D would affect substantially fewer sensitive receptors within Segment 8 as compared to the proposed Project (Alternative 2). However, impacts to sensitive receptors from construction noise would be significant under all four routes because noise-sensitive receptors would be located within 200 feet of Alternative 4 construction zones within Segment 8 and the remainder of the Alternative 4 route. Mitigation and APMs described above for the proposed Project (Alternative 2) would also be required under this alternative, in order to minimize construction noise to the extent feasible. Although construction noise would be temporary and would be reduced by implementation of mitigation and APMs to the extent feasible, the level of construction noise would violate several local noise ordinances and standards pertaining to construction noise thresholds.

Operational corona noise of the transmission lines and substations in the vicinity of sensitive receptors would be the same under Alternative 4 as it would for the proposed Project (Alternative 2), with the exception that substantially fewer receptors along the portion of Segment 8. Corona noise generated by Alternative 4 as a whole along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by Alternative 4 would violate a number of local noise ordinances and standards pertaining to operational noise thresholds. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 4, the increase in corona noise levels due to operation of Alternative 3 within these segments would result in a significant impact.

Cumulative Impacts

Alternative 4 Routes A-D would affect substantially fewer sensitive receptors within Segment 8 as compared to the proposed Project (Alternative 2). However, Overall construction and operational impacts would remain significant for Alternative 4 and would contribute to cumulatively significant noise impacts. Therefore, the cumulative impacts of Alternative 4 would be similar as cumulative impacts for the proposed Project (Alternative 2). No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.10.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

Construction of the underground segment as part of Alternative 5 of the proposed transmission line would avoid temporary noise impacts to a number of sensitive receptors within the City of Chino Hills as compared to the proposed Project. However, while construction noise would be eliminated at receptors between the two tunnel access points, construction noise would be elevated at receptors near the tunnel entrances due to the increased duration of construction vehicle use at these two locations. Mitigation and APMs described above for the proposed Project (Alternative 2) would also be required under this alternative, in order to minimize construction noise to the extent feasible. Although construction noise would be temporary and would be reduced by implementation of mitigation and APMs to the extent

feasible, the level of construction noise would violate several local noise ordinances and standards pertaining to construction noise thresholds.

Construction of the underground segment of Alternative 5 would avoid permanent noise impacts to a number of sensitive receptors within the 3.5-mile underground segment of transmission line within the City of Chino Hills as compared to the proposed Project. Receptors along the underground segment of transmission line would not be subject to any corona noise because any corona noise that would occur would be located within a tunnel underground. However, while operational corona noise would be eliminated at these receptors, operational noise along the rest of the transmission route would be the same. Corona noise generated by Alternative 5 as a whole along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by Alternative 5 would violate a number of local noise ordinances and standards pertaining to operational noise thresholds. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 5, the increase in corona noise levels due to operation of Alternative 5 within these segments would result in a significant impact.

Cumulative Impacts

Alternative 5 would reduce the number of sensitive receptors exposed to both construction and operational noise within the City of Chino as compared to the proposed Project (Alternative 2). However, some receptors located near underground tunnel access points would be exposed to an increase in construction noise. Overall construction and operational impacts would remain significant for Alternative 5 and would contribute to cumulatively significant noise impacts. Therefore, the cumulative impacts of Alternative 4 would be similar as cumulative impacts for the proposed Project (Alternative 2). No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.10.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Construction of the helicopter staging areas and increased use of helicopters during construction as part of Alternative 6 would increase temporary noise impacts to a number of sensitive receptors within and around the ANF as compared to the proposed Project (Alternative 2). Mitigation and APMs described above for the proposed Project (Alternative 2) would also be required under this alternative, in order to minimize construction noise to the extent feasible. Although construction noise would be temporary and would be reduced by implementation of mitigation and APMs to the extent feasible, the level of construction noise would violate several local noise ordinances and standards pertaining to construction noise thresholds, including FAA Advisory Circular (AC 91-36 C), "Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas."

Once constructed, Alternative 6 would be identical to the proposed Project (Alternative 2) and expose the identical sensitive receptors to operational corona noise. Corona noise generated by Alternative 6 along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by Alternative 6 would violate a number of local noise ordinances and standards pertaining to operational noise thresholds. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 6, the increase in corona noise levels due to operation of Alternative 6 within these segments would result in a significant impact.

Cumulative Impacts

Construction of the helicopter staging areas and increased use of helicopters during construction as part of Alternative 6 would increase temporary noise impacts to a number of sensitive receptors within and around the ANF as compared to the proposed Project (Alternative 2). This increase in construction noise would result in an increase to cumulative construction noise to receptors located near helicopter staging areas and routes. Operational corona noise impacts would be identical to those of the proposed Project (Alternative 2) and would be significant for Alternative 6, contributing to a cumulatively significant operational noise impacts. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.10.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

This additional construction required for underground placement of the 66-kV subtransmission line associated with Alternative 7 would result in an increase to both stationary and mobile construction equipment noise used along these routes. While no sensitive receptors appear to be located in close proximity of the underground 66-kV subtransmission line routes the remainder of the Alternative 7 route would result in identical construction noise impacts as those described above for the proposed Project (Alternative 2). Mitigation and APMs described above for the proposed Project (Alternative 2) would also be required under this alternative, in order to minimize construction noise to the extent feasible. Although construction noise would be temporary and would be reduced by implementation of mitigation and APMs to the extent feasible, the level of construction noise would violate several local noise ordinances and standards pertaining to construction noise thresholds.

Once operational, the proposed 66-kV subtransmission lines are expected to have no significant operational noise due to the underground placement of two of the lines and the distance to sensitive receptors from the above ground relocation of other 66-kV subtransmission line routes. However, as a whole, corona noise generated by Alternative 7 as a whole along Segments 5, 6, 7, 8, 10, and 11 would substantially increase existing ambient noise conditions to sensitive receptors located along the ROW of these segments. Corona noise generated by Alternative 7 would violate a number of local noise ordinances and standards pertaining to operational noise thresholds. Because there is no feasible mitigation to reduce or eliminate the corona noise that would be generated by Alternative 7, the increase in corona noise levels due to operation of Alternative 6 within these segments would result in a significant impact.

Cumulative Impacts

Underground construction as part of Alternative 7 would increase temporary noise impacts to any sensitive receptors in vicinity as compared to the proposed Project (Alternative 2). This increase in construction noise would result in an increase to cumulative construction noise to receptors located near underground routes. As no sensitive receptors appear to be located in close proximity of the underground 66-kV subtransmission line routes, operational corona noise impacts would be similar to those of the proposed Project (Alternative 2). As a whole, operational corona noise would be significant for Alternative 6, contributing to a cumulatively significant operational noise impacts. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.11 Public Services and Utilities

Section 3.11 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to public services and utilities. A summary of the effects on public services and utility systems is presented below.

3.11.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, the impacts associated with the proposed Project and alternatives described in the following sections would not occur. As a result, the No Project/Action Alternative would not impact the public services or utility systems.

However, in the absence of the proposed Project, other actions would occur. Some wind projects in Kern County would be postponed or cancelled, or other alternatives would be developed that would meet the Renewable Portfolio Standard goal by 2010. SCE would need to accommodate the new wind generation in the TWRA by upgrading existing transmission infrastructure or building new transmission facilities along a different alignment. Construction methods, resulting impacts, and regulatory requirements associated with other transmission projects would be similar to those identified for the proposed Project; as such, impacts to utility providers would be expected to be similar to that identified for the proposed Project.

Cumulative Impacts

Under Alternative 1, no public services or utilities impacts associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. With regard to cumulative public services or utilities impacts, potential interference with public services and disruptions in utility systems services would occur similar to those of the proposed Project and would likely produce cumulatively considerable impacts. However, as with the proposed Project, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on public services and utilities:

- Fire protection or other emergency response services would be necessary if a construction accident or other emergency incident occurred at a Project construction site. As a result, the potential of an increased demand for public services during the construction period could require fire protection or other emergency response services.

Mitigation. Measures proposed to reduce these impacts include: (1) A revision of the Fire Plan; (2) A review construction methods with county fire departments; (3) Ensure the practice of safe welding procedures; and (4) Use of fire preventive construction equipment.

- Temporary lane closures during Project construction could potentially interfere with emergency response vehicles. The loss of a lane and the resulting increase in congestion could lengthen the response time required for emergency vehicles passing through the construction zone. In addition, emergency aircraft response teams can be critical for firefighting and search and rescue operations, particularly in areas of mountainous terrain, such as the ANF.

Mitigation. Measures proposed to reduce these impacts includes: (1) Submit Traffic Control Plans; and (2) Coordinate with the ANF and the California Department of Forestry and Fire Protection prior to construction.

- During the construction and operation periods, there would be potential for interruption of the flow of utility services, and potential disruption of public works maintenance yards located in the proximity of the proposed site during the construction period.

Mitigation. Measures proposed to reduce these impacts include: (1) Require SCE to notify all affected parties no less than seven days prior to the outage; and (2) Require SCE to notify the Los Angeles County Public Works Department if a disruption were to occur.

- Construction waste generated by the proposed Project would need to adhere to recycling requirements set forth by State standards. The total amount of waste generated by construction is not expected to exceed the available capacity of landfills within proximity of the proposed transmission line. However, recycling plans noted by SCE do not include cities that have not adopted a Source Reduction and Recycling Element for their general plans.

Mitigation. The measure proposed to reduce this impact is as follows: Recycling of a minimum of 50 percent of waste generated along the entire proposed route.

Implementation of the alternative would also have minor impacts related to the availability of water resources, and the ability of wastewater treatment and solid waste facilities to adequately supply services. Construction of the proposed Project may result in the need for new or expanded water entitlements. However, the water entitlements noted in the Affected Environment in Section 3.11 of the EIR/EIS reveal sufficient entitlements; therefore, expanded resources would not be necessary. Similarly, construction and operation of the Project would generate minimal wastewater and solid waste, and therefore, would not require expansion of existing services.

Cumulative Impacts

Under Alternative 2, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7 and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Alternative 3 would re-route a portion of Segment 4 0.5 mile west of the proposed route in the City of Lancaster. As this re-route would be so close to the Project route, the impacts under Alternative 3 would be identical to the proposed Project. Implementation of the mitigation measures presented in 3.11 of the EIR/EIS would reduce impacts to a less-than-significant level.

Cumulative Impacts

Under Alternative 3, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7 and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.4 Alternative 4: Chino Hills Alternatives

Alternative 4 includes four route options (A-D) that would deviate from the proposed route about two miles east of State Route 57. Each line would turn southeast and either traverse or border the Chino Hills State Park (CHSP). Implementation of any of the route options would terminate the Project at a switching located either in or just outside the CHSP. This alternative would avoid construction of the remainder of Segment 8A and all of Segments 8B and 8C, and would therefore avoid potential interference or disruptions with public services or utility systems through the cities of Chino and Ontario. Consequently, the impacts associated with Public Services and Utilities would be less than those of the proposed Project. Otherwise, the impacts for Alternative 4 would be the same.

Cumulative Impacts

Under Alternative 4, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7, and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.5 Alternative 5: Partial Underground Alternative

The route for Alternative 5 would follow the same route as the proposed Project with the exception of 3.5-mile portion along Segment 8A that would be installed underground. Under this alternative, the proposed transmission line would shift from overhead to underground at approximately MP 21.9 of Segment 8A and would continue underground through the City of Chino Hills to approximately MP 25.4 of Segment 8A, where the underground line would shift back to overhead.

The impacts associated with Alternative 5 would be the same as the proposed Project, with the exception of the potential for rolling blackouts if system failures were to occur during the operation period. Implementation of the mitigation measure presented in Section 3.11.6.1 of the EIR/EIS would reduce this impact to a less-than-significant level.

Cumulative Impacts

Under Alternative 5, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7 and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Alternative 6 would follow the same route as the proposed Project; however, this alternative was developed to reduce ground disturbance through the ANF by minimizing new road construction. As a result, this alternative would utilize helicopter construction in the ANF to the maximum feasible extent. The impacts associated with public services and utility systems under Alternative 6 would be identical to the proposed Project. Implementation of the mitigation measures presented in 3.11 of the EIR/EIS would reduce impacts to a less-than-significant level.

Cumulative Impacts

Under Alternative 6, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7, and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.11.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Alternative 7 would re-route and underground 66-kV transmission lines. This would occur at two separate locations in Segment 7 and one location in Segment 8A. The remainder of the route would be the same as the proposed Project route. As a result, the impacts under Alternative 7 would be identical to the proposed Project. Implementation of the mitigation measures presented in 3.11 of the EIR/EIS would reduce impacts to a less-than-significant level.

Cumulative Impacts

Under Alternative 7, potential interference with public services and disruptions in utility systems services would produce cumulatively considerable impacts as a result of prolific development in the northern segments (Segments 4 and 5) and existing high-density urban development in the southern segments (Segments 11, 7, and 8). However, implementation of mitigation measures would reduce these impacts to the less-than-significant levels.

3.12 Socioeconomics

Section 3.12 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to socioeconomic issues. Socioeconomic impacts of the proposed Project and each Project alternative were identified through consideration of five Issues of Concern, including the following: Population and Housing; Quality of Life; Employment; Private Property Value; Local Business Revenue; and Public Revenue. As discussed in Section 3.12 of the EIR/EIS, significance determinations were not made for socioeconomic impacts due to the requirements of CEQA and NEPA. A summary of the effects on socioeconomic conditions is presented below.

3.12.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, the proposed Project would not be implemented and the impacts associated with construction, operation, and maintenance of the Project or an alternative to the Project would not occur. As a result, the No Project/Action Alternative would not result in any impacts related to

the socioeconomic Issues of Concern used to identify impacts under the proposed Project and alternatives. These Issues of Concern include: Population and Housing; Quality of Life; Employment; Private Property Value; Local Business Revenue; and Public Revenue. However, conditions in the environment are not static and will change over time. Environmental conditions will evolve based on growth and change that are not associated with the proposed Project. For instance, population and housing growth in the Project Area are expected to continue increasing regardless of whether the Project is installed.

Under the No Action/Project Alternative, SCE would still need to accommodate new power generation by upgrading existing transmission infrastructure or building new transmission facilities along a different alignment. Construction methods, resulting impacts, and regulatory requirements associated with other transmission projects would be similar to those identified for the proposed Project. Socioeconomic impacts associated with construction, operation, and maintenance of other transmission projects would be expected to be similar to the proposed Project.

Cumulative Impacts

Under Alternative 1, no impacts to socioeconomic conditions associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected with construction of an alternative transmission solution, resulting in similar activities that would temporarily or permanently impact existing socioeconomic conditions.

3.12.2 Alternative 2: SCE's Proposed Project

With construction, operation, and maintenance of the proposed Project, it is expected that socioeconomic impacts would not occur under the Population and Housing Issue of Concern, considering potential growth-inducing effects, potential for housing displacement, and potential for obstruction of planned development. Under the Quality of Life Issue of Concern, it is expected that some features of Project construction (such as noise associated with the use of helicopters, particularly in or near the ANF) would have the potential to temporarily effect factors which an individual would consider to contribute to quality of life, but that such Project effect(s) would be temporary in nature and would not result in a socioeconomic impact. With regards to the Employment Issue of Concern, it was determined that sufficient workforce is available in the Project Area to accommodate construction needs and that the Project would not result in a socioeconomic impact to employment.

Direct and Indirect Impacts

It is expected that with construction, operation, and maintenance of the proposed Project, socioeconomic impacts would occur under the following Issues of Concern, as summarized below: Private Property Value; Local Business Revenue; and Public Revenue.

- Implementation of the proposed Project would have the potential to cause or contribute to decreased value of private property in the North and South Regions of the Project Area. Consideration of relevant studies and documentation reveals that the effects of transmission lines on private property value are generally smaller than anticipated, with property value being more largely determined by property-specific factors such as neighborhood features, square footage, size of lot, and irrigation potential. Under the proposed Project, it is possible that the placement and configuration of Project infrastructure could have an indirect effect on private property value; however, due to the multiple factors listed above, it is not possible to directly connect Project features with changes in private property value.

- The proposed Project would cross through agricultural areas in the North Region of the Project Area, and would therefore have the potential to affect local business revenue for agricultural landowners, particularly during the construction period. If Project construction across agricultural lands occurs during the growing season, such activities could temporarily restrict crop production or potentially damage crops, thereby causing or contributing to a decrease in local business revenues for the agricultural landowners whose crops would be affected.

Mitigation. The measure proposed to reduce this impact is as follows: Coordination of construction activities with agricultural landowners.

- It is expected that Project construction would result in positive effects on public revenue for local public and government agencies as a result of increased property tax revenue. Conversely, the USDA Forest Service would potentially experience decreased revenue as a result of lower Adventure Pass sales during Project construction. The Forest Service would not benefit from property tax revenues.

Cumulative Impacts

Under Alternative 2, operation activities would potentially decrease property values, construction activities would cause a temporary decrease in revenues for agricultural landowners, and operation activities would benefit public agency revenue; each of these Project impacts would have an incremental contribution to the Cumulative Scenario. Mitigation measures introduced for Alternative 2 would help to reduce the alternative's incremental contribution to the Cumulative Scenario. No additional mitigation measures have been identified that would reduce or avoid Socioeconomic impacts on the level of the Cumulative Scenario.

3.12.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

The Population and Housing Issue of Concern would be exactly the same under Alternative 3 as it would under the proposed Project (please refer to Section 3.12.6.1 of the EIR/EIS). The West Lancaster re-route associated with Alternative 3 would occur in an area that is currently being used for agricultural purposes. As with the proposed Project, Alternative 3 would not directly induce substantial population growth, displace existing residents or housing, necessitate the construction of replacement housing, or preclude planned residential development. Similarly, the Quality of Life, Employment, Private Property Value, Local Business Revenue and Public Revenue Issues of Concern would not be affected by this alternative. No impact would occur.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Cumulative impacts under Alternative 3 would be the same as under the proposed Project. Mitigation measures introduced for Alternative 3 would help to reduce the alternative's incremental contribution to the Cumulative Scenario. No additional mitigation measures have been identified that would reduce or avoid Socioeconomic impacts on the level of the Cumulative Scenario.

3.12.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

From a Socioeconomic perspective, the proposed routing options under Alternative 4 would not differ from one another in that the affected socioeconomic environment would be exactly the same for Routes A, B, C, and D with regards to the identified Issues of Concern, including: Population and Housing, Quality of Life, Employment, Private Property Value, Local Business Revenue, and Public Revenue. Therefore, the proposed Routes A, B, C, and D of Alternative 4 are evaluated collectively under Alternative 4.

The impacts associated with socioeconomic Issues of Concern would be exactly the same as the proposed Project, with the exception of Private Property Values. Project implementation would decrease existing private property values in the same way under Alternative 4 as it would under the proposed Project; however, Alternative 4 would avoid all potential private property value impacts of the proposed Project within the Cities of Chino Hills, Chino, and Ontario.

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Cumulative Socioeconomic impacts under Alternative 4 would be the same as under the proposed Project, as described in Section 3.12.6.2 of the EIR/EIS, with the exception that cumulative socioeconomic impacts of Alternative 4 would be expected to be incrementally less than the proposed Project due to the avoidance of cumulative impacts in the South Region, under Routes A through D.

3.12.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

The impacts associated with socioeconomic Issues of Concern would be exactly the same as the proposed Project, with the exception of Local Business Revenue. As with the proposed Project, local businesses could potentially be affected by Alternative 5 through impacts to visual resources, vehicular or pedestrian traffic patterns, land use, or health and safety concerns (such as EMF). These Issue Area-specific effects would likely be greater along the 3.5-mile underground section in the South Region, due to extensive construction activities that would occur at each access shaft location. Installation of the underground transmission line and facilities would be more intensive and require more time than would be required for overhead installation of the same section of transmission line. Therefore, any activities associated with installation of the underground segment that could potentially result in Issue Area-specific effects related to local business revenue would likely be slightly greater under Alternative 5 than under the proposed Project. As with the proposed Project, impacts related to the Issue Areas that could potentially influence business revenue are addressed in their respective EIR/EIS sections: Land Use (Section 3.9), Traffic and Transportation (Section 3.13), Visual Resources (Section 3.14), and Electrical Interference and Hazards (Section 3.17).

Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Cumulative impacts under Alternative 5 would be the same as under the proposed Project, as described in Section 3.12.6.2 of the EIR/EIS. Impacts related to decreased property values, decreased revenues for

agricultural landowners, and increased public agency revenue would have an incremental contribution to the Cumulative Scenario.

3.12.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

The socioeconomic Issues of Concern would be the same under Alternative 6 as it would under the proposed Project, with the exception of Quality of Life. During construction of Alternative 6, helicopter activity would be substantially increased in the ANF, as compared to the proposed Project, because 143 towers on NFS lands in the ANF would be constructed via helicopter under Alternative 6, as opposed to the 33 helicopter-constructed towers included under the proposed Project. This helicopter use would be disruptive to the characteristics of quiet, solitude, and natural environment in the ANF and would affect factors that individuals perceive as contributing to quality of life through features such as increased noise. This effect would be temporary and would not extend beyond helicopter use periods. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Cumulative impacts under Alternative 6 would be the same as under the proposed Project, as described in Section 3.12.6.2 of the EIR/EIS. Impacts related to decreased property values, decreased revenues for agricultural landowners, and increased public agency revenue would have an incremental contribution to the Cumulative Scenario.

3.12.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Although Alternative 7 includes minor re-routes and underground construction of 66-kV subtransmission lines along Segments 7 and 8A, this alternative would not create a new effect on existing structures that is not already discussed in Section 3.12.6.1 of the EIR/EIS. The socioeconomic Issues of Concern would be exactly the same under Alternative 7 as it would under the proposed Project. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize impacts to agricultural resources. No additional mitigation is recommended.

Cumulative Impacts

Cumulative impacts under Alternative 7 would be the same as under the proposed Project, as described in Section 3.12.6.2 of the EIR/EIS. Impacts related to decreased property values, decreased revenues for agricultural landowners, and increased public agency revenue would have an incremental contribution to the Cumulative Scenario.

3.13 Traffic and Transportation

Section 3.13 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to traffic and transportation. A summary of the effects on traffic and transportation resources is presented below.

3.13.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Selection of the No Project/Action Alternative would mean that the proposed TRTP would not be implemented. As such, none of the associated Project activities would occur and the environmental impacts associated specifically with the proposed Project would not occur. Particularly, no construction-related traffic would be added to the roadway system and no temporary road closures related to transmission line stringing activities would occur.

However, under the No Project/Action Alternative, some currently unknown plan would need to be developed to provide the transmission upgrades necessary to interconnect renewable generation projects in the Tehachapi area and to also address the existing transmission problems south of Lugo Substation. Similarly, other yet unspecified transmission upgrades would presumably be proposed in the future to provide the needed capacity and reliability to serve growing electrical load in the Antelope Valley. To interconnect wind projects in the Tehachapi area, it is possible that other electrical utilities with transmission facilities in the area, such as LADWP, might purchase some of the power from Tehachapi wind developers and integrate it into their system. Another possibility is the development of a private transmission line that could connect wind projects to the electrical grid. Any of these projects, which would occur as a result of the unfulfilled electrical transmission need in the absence of TRTP, are likely to produce similar impacts as those identified for the proposed Project.

Cumulative Impacts

Under Alternative 1, no impacts to traffic and transportation associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the new wind generation in the TWRA. As a result, cumulative impacts similar to those described for the proposed Project would be expected as a result of construction of an alternative transmission solution.

3.13.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on air quality:

- Construction of the proposed Project could result in roadway closures at locations where the construction activities, especially transmission line stringing, would be located within ROWs of public streets and highways. Although temporary closures of this nature would likely occur for only a few minutes at a time, even temporary road closures on roads with average daily traffic (ADT) volume greater than 10,000 vehicles per lane could substantially disrupt traffic flow and substantially increase traffic congestion, particularly if road closures occurred during the a.m. or p.m. peak hours of travel.

In addition, construction of the proposed Project would generate additional traffic on regional and local roadways. Construction worker commute trips, Project equipment deliveries, and hauling materials such as support towers, concrete, conductor, and excavation spoils would increase existing traffic volumes in the Project area. Workers commuting to construction sites would increase traffic in the Project area. Approximately 300 workers in separate construction crews, each comprised of between two and 100 workers, would work on the various aspects of the proposed Project over a 55-month period. An average of approximately 75 workers would commute to various locations along the proposed route ROW each workday.

Lastly, construction activities could interfere with emergency response vehicles. Potential roadway segments that would be most impacted would be two-lane roadways, which provide one lane of travel per direction. On roadways with multiple lanes, the loss of a lane and the resulting increase in congestion could lengthen the response time for emergency vehicles to pass through the construction zone.

Mitigation. Measures proposed to reduce these impacts include: (1) Prepare Traffic Control Plans; and (2) Restrict lane closures.

- Construction activities could result in interference with numerous modes of transportation including transit route, rail traffic, pedestrian and bicycle pathways, and aviation.

The proposed transmission line routes of the proposed Project would cross several transit routes operated by the Antelope Valley Transit Authority, Los Angeles Metropolitan Transit Authority, Foothill Transit, Pasadena Area Transit System, Montebello Municipal Bus Lines, Norwalk Transit District, and Omnitrans.

Overhead construction activities could interfere with rail traffic, as construction of overhead transmission lines would require temporary use or closure of a railroad ROW, which would require halting through-rail traffic during stringing operations over the ROW.

Pedestrian and bicycle circulation could be affected by transmission line construction activities if pedestrians and bicyclists were unable to pass through the construction zone or if established pedestrian and bike routes were blocked.

Lastly, the proposed Project could interfere with a flight path in Segment 4, as the Project route would place structures above 200 feet in height beneath a low level military flight path, which could result in conflicts with military flight test pathways.

Mitigation. Measures proposed to reduce these impacts include: (1) Prepare Traffic Control Plans; (2) Restrict lane closures; (3) Avoid disruption of bus service; (4) Obtain and comply with railroad permits; (5) Ensure pedestrian and bicycle circulation and safety; and (6) Notify US Air Force.

- Construction would result in localized shortages of public parking as workers would park vehicles along local roadways in residential areas along proposed Project Segments 7, 8 and 11, thereby reducing the availability of parking spaces in these areas. Although the duration of construction activities at any one location along the ROW would be short term and the reduction of parking spaces at any location would be temporary, impacts would be significant. In addition, the proposed Project would conflict with the Los Angeles County Metropolitan Transportation Authority's long range plan to construct a new travel lane within the SR14 ROW. A significant impact would occur if SCE were to place structures within the existing or planned SR14 ROW.

Mitigation. Measures proposed to reduce these impacts include: (1) Prepare Construction Transportation Plan; and (2) Avoid conflicts with planned improvements to SR14.

Cumulative Impacts

The following construction impacts would not be cumulatively considerable: temporary disruptions to rail traffic or operations, localized shortages of public parking along the Project ROW, conflicts with planned transportation projects, and damaged road ROWs from construction vehicles and equipment.

The following construction impacts would be cumulatively considerable but less than significant: closure of roads to through traffic or reduction of travel lanes resulting in congestion, congestion on area roadways as a result of construction traffic, temporary interference with emergency response vehicles,

temporarily disruptions to transit routes, interference with the use of pedestrian/bicycle paths, and aviation hazards presented by transmission structures.

3.13.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Impacts associated with Alternative 3 would be the same as impacts associated for the proposed Project. Although this alternative introduces a re-route of part of Segment 4 of the proposed transmission line, it would cross the same streets at the same general locations as the proposed Project and there would be no increase in the potential for congestion, interference with public transit routes, public resources, damage to roadways or planned transportation projects. As a result, the mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to traffic and transportation resources. No additional mitigation is recommended.

Cumulative Impacts

The minor re-route of the proposed transmission line associated with Alternative 3 would not affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2, as described in Section 3.13.6.2 of the EIR/EIS.

3.13.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

All four Alternative 4 routes would avoid crossing six major roadways and 63 roadways that would be crossed by the proposed Project route. All four routing options of this alternative would also cross SR142, as well as two (Route C and Route D) or three (Route A and Route B) smaller two-lane canyon roads. In addition, all four Alternative 4 routes would cross one less transit route. As a result, the potential for the closure of roads and traffic congestion as a result of construction would be reduced.

All four Alternative 4 routes would avoid crossing two Class II bike routes, one Class I bike route, and several sidewalks in the cities of Chino and Chino Hills. However, as presented in Section 3.13.2.4 of the EIR/EIS, each of these routing options would cross or be located directly adjacent to several fire trails, roads, and/or trails in CHSP that are used by hikers and bicyclists. Therefore, the potential for construction to interfere with pedestrian and bicycle paths would be slightly increased compared to the proposed Project.

All four Alternative 4 routes would avoid the relatively dense residential developments in the cities of Chino and Chino Hills that would be affected by the proposed Project. Additionally each of these routing options would be located in areas with no concentrated commercial or residential development. Therefore, use of the roadways crossed by all four routing options for construction parking would not displace parking opportunities for the public.

Although this alternative introduces a re-route of part of Segment 8 of the proposed transmission line, no planned transportation projects have been identified along any of the four routing options of Alternative 4.

Cumulative Impacts

The minor re-routes of the proposed transmission line associated with Alternative 4 would not substantially affect the proposed Project's contribution to cumulative impacts and therefore, cumulative

impacts of Alternative 4 would be the same as cumulative impacts for Alternative 2, as described in Section 3.13.6.2 of the EIR/EIS.

3.13.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

Alternative 5 would follow the same route as the proposed Project; however, an approximately 3.5-mile portion of Segment 8 would be constructed underground from MP 8A 21.9 to MP 8A 25.4. Therefore, any impacts that would occur within the Northern and Central Regions of the proposed Project and within the Southern Region between S8A MP 0.0 and S8A MP 21.9 would also occur for Alternative 5. Because Alternative 5 would be located underground and all construction activities along this route would occur underground (with the exception of excavation of the entry, exit, and elevation shafts), construction of the underground portion of this Alternative would cross fewer roadways than the proposed Project and the potential for the following construction-related impacts would be reduced: substantial congestion, inference with emergency vehicles, and interference with pedestrian paths. In addition, during the operation period, because 3.5 miles of this alternative would be constructed underground, the potential for transmission towers to affect aviation activities would be incrementally reduced compared to the proposed Project.

Although the underground portion of Alternative 5 would cross fewer roadways than the proposed Project, the potential for the following impacts would be increased: given the dense urban development of this area and the high volumes of traffic on major roadways, it is likely that Project-related construction traffic could contribute to congestion; and increased damage to road ROWs due to construction traffic (worker commute trips as well as delivery of equipment and materials to and from the endpoints of the underground portion of the route). Otherwise, the potential for Alternative 5 to interfere with public transit routes, bicycle paths or planned transit projects would be the same as the proposed Project.

Regardless of incremental increases or decreases in impacts, the significance of each impact would be the same as the proposed Project, and all of the mitigation measures for the proposed Project would also be required for Alternative 5.

Cumulative Impacts

Construction of 3.5 miles of Segment 8 underground would result in nearly identical impacts as identified in Section 3.13.6.2 of the EIR/EIS for the proposed Project. Although the longer duration of construction associated with Alternative 5 would increase the potential for congestion and shortages of public parking to occur, the overall contribution of Alternative 5 to potential cumulative impacts would be the same as that of the proposed Project as described in Section 3.13.6.2, because the effects of congestion as a result of construction traffic would be distributed evenly over time and localized shortages of public parking along the Project ROW would not have the potential to combine with impacts of other projects in the vicinity of the underground portion of Alternative 5.

3.13.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Alternative 6 would require a substantial increase in helicopter construction of transmission towers; however the route of this alternative would be identical to that of the proposed Project and would therefore cross and affect the same roadways, rail lines, bikeways, and pedestrian paths, as the proposed Project. The increased helicopter construction associated with this alternative may result in a slight

increase in the total number of construction equipment and workforce required to travel to the helicopter staging sites, as well as an incremental increase in the overall construction schedule for Segment 6 and Segment 11. Therefore, construction activities for Segment 6 and Segment 11 of Alternative 6, as well as temporary construction-related impacts to Traffic and Transportation would occur for an incrementally longer duration than the impacts of the proposed Project identified in Section 3.13.6.1 of the EIR/EIS. Nonetheless, with implementation of the mitigation measures described in Section 3.13.6.2, impacts associated with Alternative 6 would be the same as the proposed Project.

Cumulative Impacts

Cumulative impacts associated with Alternative 6 would be the same as those identified in Section 3.13.6.2 of the EIR/EIS for the proposed Project. Delivery of additional equipment and workers required for helicopter construction would result in an incremental increase in the number of construction vehicles traveling on roadways within the ANF. Therefore Alternative 6 would result in the addition of a slightly higher number of construction-related trips to area roadways during construction of Segment 6 and Segment 11. This increase in traffic would also incrementally increase the contribution of Alternative 6 to cumulative road closures and congestion. However, as described in Section 3.13.10.1 of the EIR/EIS, mitigation measures would be implemented to reduce the contribution of Alternative 6 to these impacts to a less-than-significant level. Therefore, the modified configuration of the proposed Project transmission line associated with Alternative 6 would not substantially affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 6 would be the same as cumulative impacts for Alternative 2, as described in Section 3.13.6.2 of the EIR/EIS.

3.13.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

- The underground portion of Alternative 7 would be located immediately adjacent to Peck Road and Durfee Avenue, which serve adjacent businesses. During excavation of the trench for the underground cable, access to property driveways would be temporarily disrupted and possibly blocked. This could potentially disrupt businesses.

Mitigation. The measure proposed to reduce this impact is as follows: Provide continuous access to properties.

Alternative 7 would generally follow the same route as the proposed Project; however two portions of Segment 7 in the Central Region would be constructed underground from S7- MP 8.9 – S7-MP 9.9 and from S7- MP 8.9 – S7-MP 9.9. Additionally, a portion of Segment 8A in the Southern Region would be rerouted to the south between S8A MP 2.2 and S8A MP 3.8. Therefore, any impacts that would occur within the Northern Region of the proposed Project and along all segments of the Central Region except Segment 7 would also occur for Alternative 7; as such, please see Section 3.13.6.1 of the EIR/EIS for a summary of Traffic and Transportation impacts that could potentially affect resources along the portion of the Alternative 7 route which is identical to the proposed Project route. The underground portion of Alternative 7 would be located immediately adjacent to Peck Road and Durfee Avenue, and construction of the underground portion of this alternative would potentially increase the following impacts: given the dense urban development of this area and the high volumes of traffic on major roadways, it is likely that Project-related construction traffic could contribute to congestion; and interference with emergency vehicles, public transit routes, and pedestrian/bicycle paths. Otherwise, potential impacts to rail operations, parking, planned transportation projects, road damage, and aviation activities would be the same as the proposed Project. Regardless of incremental increases in impacts, the significance of each impact would

be the same as the proposed Project, and all of the mitigation measures for the proposed Project would be required for Alternative 7.

Cumulative Impacts

The rerouting and undergrounding of short portions of the proposed transmission line associated with Alternative 7 would not affect the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 7 would be exactly the same as cumulative impacts for Alternative 2, as described in Section 3.13.6.2 of the EIR/EIS.

3.14 Visual Resources

Section 3.14 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to visual resources. A summary of the effects on visual resources is presented below.

3.14.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Under the No Project/Action Alternative, the proposed transmission line and substation upgrades would not be implemented and, therefore, impacts associated with the proposed Project and alternatives, as described in the following sections, would not occur. As a result, the No Project/Action Alternative would have no impact to visual resources.

However, in the absence of the proposed Project or Project alternative, a similar project would need to be developed to interconnect new wind turbine-based electricity generated from the Tehachapi Wind Resource Area (TWRA) with the energy distribution systems of the Los Angeles Basin. This future project would be required to meet the power transmission needs and, consequently, would likely result in impacts to visual resources similar to, or in addition to, those resulting from the proposed Project and alternatives.

Cumulative Impacts

Under Alternative 1, no impacts to visual resources associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the power load. As a result, cumulative impacts would be expected with construction of an alternative solution similar to impacts associated with the proposed Project, as identified in Section 3.14.6.1 of the EIR/EIS, resulting in impacts that would be cumulatively considerable.

3.14.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on visual resources:

- Impacts on visual resources would result from construction, including the presence of equipment, materials, and work force at the substation sites, staging areas, pulling locations, tensioner locations, splicing locations, and along the access/spur roads and overhead transmission line routes. Construction impacts on visual resources would also result from the temporary alteration of landforms and vegetation along the utility corridor. Due to construction of the proposed Project, short-term visual impacts on landscape character and visual quality of landscape views as seen from various vantage points would be

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

Mitigation. The measure proposed to reduce this impact is as follows: : Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis.

- For landscapes that currently do not have a transmission line, construction of a new transmission line would introduce an industrial landscape character that would adversely affect visual quality. Segment 4 (S4 MP 15.8 to S4 17.9) would degrade the natural appearance of the landscape adjacent to 110th Street West, a Priority 2 Los Angeles County Scenic Highway, leading to significant and unavoidable adverse impacts. Implementation of recommended mitigation measures would reduce these visual impacts somewhat, but the presence of new transmission line structures and conductors in new ROWs, visible from 110th Street West in a landscape that currently has no transmission line facilities, would remain a significant and unavoidable adverse visual impact.

Mitigation. The following measures are proposed to reduce visual impacts in areas without existing transmission lines: (1) Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis; (2) Use tubular steel poles instead of lattice steel towers in designated areas; (3) Treat surfaces with appropriate colors, textures, and finishes; and (4) Establish permanent screen.

- In the Rose Hills Memorial Park, Segment 8A would relocate the transmission line from an existing ROW that is midslope onto a skyline ridge. The existing lattice steel towers have a landform backdrop as seen from many vantage points in Rose Hills Memorial Park. The new ROW is located on a ridgetop and new 500-kV lattice steel towers would be skylined and very visible from sensitive receptor locations to the south (inside Rose Hills) and to the north (various residential areas and the Pomona Freeway [Highway 60]). Implementation of mitigation measures would reduce these visual impacts to less than significant levels.

Mitigation. The following measures are proposed to reduce visual impacts in areas without existing transmission lines: (1) Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis; (2) Use tubular steel poles instead of lattice steel towers in designated areas; (3) Treat surfaces with appropriate colors, textures, and finishes; (4) Dispose of excavated materials as prescribed; and (5) Slope-round and re-contour in areas as prescribed.

- For a landscape with an existing transmission line, increased structure size and new materials of the proposed Project would result in adverse visual effects. For a landscape with one or more existing transmission lines, removal of smaller existing transmission line structures (e.g., 220-kV) and replacement with structures made of new materials and of increased size (e.g., 500-kV) would contribute to increased visual contrasts. Increased visual contrasts could be created by increased structure prominence, new or additional structure skylining, new or additional ridgeline obstruction, new or additional skyline intrusion, and/or view blockage to desirable landscape features. New, taller transmission line structures could also increase the predominance of industrial landscape character by introduction of larger structures with more pronounced geometric forms, unnatural straight lines, increased visual complexity, and increased visual clutter. New metal surfaces tend to stand out more than older, more weathered surfaces, thereby making the new, taller structures even more visually prominent. Although the implementation of mitigation measures is recommended, impacts from increased tower heights would remain significant and unavoidable.

Mitigation. Implementation of the following measures would reduce visual impacts somewhat: (1) Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis; (2) Use tubular steel poles instead of lattice steel towers in designated areas; (3) Treat surfaces with appropriate colors, textures, and finishes; (4) Match spans of existing transmission

structures; and (5) On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality.

- Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality. In the uniform brushfields of the Mojave Desert (North Area), vegetative clearing and earthwork to construct new access and spur roads and new structure pads for Segment 10 would adversely affect the existing natural-appearing and rural landscape character. In the Angeles National Forest (Center Area), there are existing access and spur roads that follow most of Segments 6 and 11. Many of the access and spur roads, especially along portions of Segment 11, have cut-slope failures and fill-slope failures that have substantially narrowed the access roads or closed them completely. SCE would construct and operate a helicopter staging area in the immediate foreground of Mount Gleason Road, resulting in unacceptably low scenic integrity in the foreground viewshed of this recreation road. SCE would reconstruct a washed-out bridge over Fall Creek and re-open FS Road 3N27 to access Segment 11. Natural revegetation has occurred along and on these access and spur roads, beginning the process of landscape restoration and visual rehabilitation. SCE would use the West Fork National Scenic Bikeway from the San Gabriel Canyon Road (State Highway 39) toward Cogswell Dam, and then use FS Road 2N25.2 west from Cogswell Dam to access Segment 6. Potential visual impacts resulting from vegetative clearing and earthwork modification to allow access for large equipment on all these roads would be substantial in the ANF. In the South Area, there are existing access roads and spur roads that service Segments 7, 8, and 11, and provide access for maintenance of existing transmission structures and construction of the proposed Project. Although the implementation of mitigation measures is recommended, the visual impacts associated with access and spur roads and splicing and pulling locations throughout proposed Segments 6, 10 and 11 would remain significant and adverse.

Mitigation. Implementation of the following measures would reduce visual impacts: (1) Construct, operate, and maintain the Project with existing access and spur roads where feasible; (2) Slope-round and re-contour in areas as prescribed; (3) Avoid locating new roads in bedrock on NFS lands; and (4) Dispose of excavated materials as prescribed.

- New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glare in certain lighting conditions. The new Whirlwind Substation would introduce lighting sources in a portion of this rural landscape where no nighttime lighting currently exists. Conductors seen from below do not reflect sunlight or cause glare. In fact, conductors appear dark gray or black when seen from below. When viewed from higher vantage points, such as a mountain road, a high mountain highway, or a ridgeline or crest trail (as would occur in the ANF), sunlight reflecting off conductors and towers would draw attention to the new high-voltage transmission lines and would create color and texture contrasts, thereby adversely affecting desired condition and scenic integrity of NFS lands. New metals required for the proposed Project's lattice steel towers, tubular steel poles, light weight steel poles, and conductors would reflect more sunlight than old, rusted metals of existing structures to be replaced. However, implementation of recommended mitigation measures would reduce visual impacts to less than significant.

Mitigation. Implementation of the following measure would reduce visual impacts of new metal surfaces: Treat surfaces with appropriate colors, textures, and finishes.

- The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or a scenic trail viewshed. In Los Angeles County, Priority 2 County Scenic Highways include 110th Street West and Elizabeth Lake Road. The proposed Project would be visible from both of these scenic highways. The proposed Project would cross directly over the Pacific Crest National Scenic Trail (PCT) at Segment 4 MP 2.7, at Segment 6 MP 7.3, and at Segment 11 MP 7.6. The PCT trailhead at Mill Creek Summit is also located at S6 MP 7.3, and its visual environment would be adversely affected by

Alternative 2. The size of the lattice steel structure proposed for Segment 6 at the Mill Creek Summit would probably encroach directly upon the PCT, and would probably require relocation of the trailbed. The proposed Project's Segment 6 and Segment 11 would cross over the Angeles Crest State Scenic Highway (federal Scenic Byway, also known as State Highway 2) at four different locations (at approximately S11 MP 16.0, MP 17.7, and MP 18.4 for Segment 11 and at S6 MP 16.8 for Segment 6). Additionally, Segment 6 would result in a direct crossing of the Silver Moccasin National Recreation Trail (Trail 11W06) at S6 MP 17.2. The proposed Project would be visible from the National Scenic Bikeway Trail at Cogswell Reservoir, from approximately S6 MP 19 to MP 22. In southern Los Angeles County, the State has designated portions of the Orange Freeway (State Highway 57) as "Eligible" to become a State Scenic Highway where it traverses largely undeveloped hills between Brea and Diamond Bar; Alternative 2 would cross State Highway 57 in this vicinity and be very visible to travelers. Colima Road, Hacienda Road, and Harbor Boulevard are proposed as scenic corridors in the most recent update to the County of Los Angeles General Plan. Los Angeles County has designated several other roads as Priority Two Scenic Highways, also indicating a high sensitivity for scenic integrity of landscapes. Portions of I-210 and State Highways 39 and 57 are either designated as, or eligible for, State Scenic Highway status and portions of the proposed Project would be visible from these roadways. Implementation of recommended mitigation measures would help to minimize and compensate for the adverse visual effects of new transmission lines and structures, resulting in adverse but less-than-significant visual impacts.

Mitigation. Implementation of the following measure would help to minimize and compensate for the adverse visual effects of new transmission lines and structures: On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality.

- The Project would conflict with established visual resource management plans or landscape conservation plans. The majority of Segments 6 and 11 are situated within areas of natural-appearing landscapes with Forest Plan goals of Natural-Appearing Desired Condition and High Scenic Integrity Objective (SIO). SCE proposes to re-open and improve some existing access and spur roads to allow large construction vehicles and equipment to have access. Additionally, construction and operation of new, taller, wider single-circuit 500-kV transmission lines would adversely impact visual resources by creating strong contrasts of form, line, color, texture and scale. Improvements to access and spur roads, and the placement of larger transmission structures, would further degrade existing conditions and would not meet the natural-appearing Desired Condition or the High Scenic Integrity Objective. It is expected that approval of the proposed Project would require an amendment to the Forest Plan because the Project would not achieve Desired Conditions or Scenic Integrity Objectives, and also it would adversely impact foreground views at two locations along the Pacific Crest Trail, which would conflict with Forest Standard S1. With the implementation of this expected Forest Plan amendment, the proposed Project would maintain consistency with the Forest Plan with regards to visual resources.

The proposed Project would cross through lands managed by the Puente Hills Landfill Habitat Preservation Authority (PHLHPA) along Segment 8A and would run along the northern border of Powder Canyon, which falls under the authority of the PHLHPA. Where it is situated along Powder Canyon, the proposed Project would require that the existing ROW be expanded by 100 feet to the south, towards the canyon. In requiring this ROW expansion within the jurisdiction of the PHLHPA, the proposed Project would be subject to the management goals and objectives identified in the PHLHPA Resource Management Plan (RMP). The proposed Project would conflict with Goal Visual-1 and Objective Visual-1.2 of the Puente Hills Landfill Native Habitat Preservation Authority Resource Management Plan. As such, impacts would be significant and unavoidable.

Mitigation. No mitigation measures have been identified that would reduce this impact to a less-than-significant level.

Cumulative Impacts

In addition to the proposed Project, other projects in the Cumulative Scenario (including past, present, and future projects) also introduce visual resource impacts that are similar to the impacts described above. Mitigation such as described above would reduce visual impacts somewhat. However, when combined with past, present, and reasonably foreseeable future projects in the area, cumulative visual resource impacts of the proposed Project would be considerable and unavoidable.

3.14.3 Alternative 3: West Lancaster Alternative

This alternative would deviate from the proposed Project route along Segment 4, at approximately S4 MP 14.9, where the new 500-kV transmission line would turn south down 115th Street West for approximately 2.9 miles and turn east for approximately 0.5 mile, rejoining the proposed route at S4 MP 17.9. This re-route would increase the overall distance of Segment 4 by approximately 0.4 mile. In all other respects, Alternative 3 is identical to the proposed Project. Because Alternative 3 remains within the same viewsheds as the proposed Project, therefore, Alternative 3 has the same affected environment as the proposed Project.

Direct and Indirect Impacts

Construction methods of Alternative 3 do not change from those described for Alternative 2. The proposed route for this alternative changes only for 2.1 miles in Segment 4; therefore, the visible construction activities for this alternative do not differ from Alternative 2. Under Alternative 3, a portion of Segment 4 (S4 MP 14.9 to 17.9) would be constructed in a new ROW where there is no existing transmission line. Therefore, the existing natural-appearing landscape character would be modified to an industrial character by the presence of Alternative 3.

Mitigation. Implementation of the following mitigation measure would reduce visual impacts of a new transmission line in a new ROW at 110th Street West: At road crossings, structures should be offset so that they are equidistant on each side of the road where feasible. All other visual impacts would be the same under Alternative 3 as under the proposed Project. Mitigation described above for the proposed Project would also be required under this alternative, in order to minimize visual resource impacts. No additional mitigation is recommended.

Cumulative Impacts

Visual resource impacts associated with Alternative 3 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. The minor re-route of the proposed Project transmission line associated with Alternative 3 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 3 would be exactly the same as cumulative impacts for Alternative 2. No additional mitigation measures have been identified that would reduce cumulative impacts to a less than significant level.

3.14.4 Alternative 4: Chino Hills Alternatives

This alternative is identical to the proposed Project for all Segments except Segment 8. The route would deviate from the proposed Project beginning approximately 0.6 mile east of Tonner Canyon Road or two miles east of State Route 57 along Segment 8A. The proposed routes for Alternative 4 would cross through parts of Orange County, which the proposed Project (Alternative 2) would not enter, and San Bernardino County. The routing options for Alternative 4 would also cross through the Chino Hills State

Park (CHSP). Under Alternative 4, 16 miles of Segment 8A and all of Segments 8B and 8C would not be constructed. Except for deletion of 16 miles of Segment 8A and the inclusion of four new options of Segment 8A through and around CHSP, all other portions of Alternative 4 would be identical to the proposed Project (Alternative 2).

Direct and Indirect Impacts

Impacts to visual resources under this alternative would be the same as the proposed Project for all areas except the reroute near and within Chino Hills State Park (CHSP) and the 16 miles of Segment 8 east of S8 MP 19.2. Alternative 4 traverses different landscapes and would impact different viewsheds than Alternatives 2 or 3, starting at Segment 8A Mile 19.2 and continuing to four optional locations for an Eastern Switching Station in or near CHSP. However, the overall impacts of Alternative 4 would be similar to Alternative 2, and mitigation introduced for Alternative 2 would be required for Alternative 4 to reduce impacts to visual resources. No additional mitigation is recommended for Alternative 4 than those measures proposed for Alternatives 2 and 3.

Cumulative Impacts

As described in Section 3.14.8.2 of the EIR/EIS, impacts associated with Alternative 4 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The re-route of the proposed Project transmission line associated with Alternative 4 would not differ from the proposed Project's contribution to cumulative impacts and therefore, cumulative impacts of Alternative 4 would be exactly the same as cumulative impacts for the proposed Project. Mitigation measures introduced for Alternatives 2 and 3 in Sections 3.14.6.1 and 3.14.7.1 of the EIR/EIS, respectively, would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for visual resources.

3.14.5 Alternative 5: Partial Underground Alternative

As described in Section 2.5 of the EIR/EIS, this alternative would be the same as the proposed Project, with the exception that the line would be installed underground for less than four miles through Chino Hills, between MP 21.9 and 25.5 of Segment 8A (3.6 miles). Visual impacts associated with Alternative 5 would be the same as the impacts associated with the proposed Project, except as seen near two proposed transition stations where the transmission line would transition from overhead to underground, and then back to overhead again. Additionally, the existing un-energized 220-kV transmission line along this 3.6-mile portion would remain in place instead of being removed, and existing visual conditions would remain in the future in this ROW instead of receiving new double circuit LSTs. Except for this 3.6-mile portion of Segment 8A that would be placed underground, all other portions of Alternative 5 would be identical to the proposed Project (Alternative 2).

Direct and Indirect Impacts

Under Alternative 5, visual impacts would be the same as for the proposed Project and there would be new nighttime lighting introduced at the two transition stations. Visual impacts for Alternative 5 would require implementation of all mitigation measures introduced for Alternative 2, which are fully described in Section 3.14.6.1 of the EIR/EIS. Additionally, implementation of permanent screens around both new transition stations would substantially reduce visual impacts, but not to less-than-significant levels because of the height of the new A-frames and double circuit towers. Direct and indirect visual impacts would be

exactly the same as Alternative 2 and, in addition, large areas of land would be needed for the disposal of excavated earth from the shafts and tunnel of the Partial Underground Alternative.

Cumulative Impacts

This alternative consists of a 3.6-mile underground re-route of the proposed transmission line. The remainder of this alternative route would be identical to that of the proposed Project and would, therefore, result in identical visual impacts as the proposed Project. The rerouted underground portion of the Alternative 5 route follows the same path as the proposed aboveground Project route. As a result, this alternative traverses the same viewsheds as the portion of the proposed Project route it would replace, and additional visual impacts are limited primarily to disturbed/developed habitats. Based on the substantial similarity of Alternative 5 to the proposed Project, this alternative's contribution to cumulative impacts would be virtually identical to that of the proposed Project. Mitigation measures introduced for the proposed Project would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.14.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

The proposed route for this alternative is exactly the same as that of the proposed Project (Alternative 2). However, this alternative would change the construction method utilized in the more remote areas of Segments 6 and 11 by increasing the number of towers that are constructed by helicopter through the ANF.

Direct and Indirect Impacts

This alternative would include construction activities similar to those of the proposed Project, except it would include more helicopter construction in the ANF and less ground-based equipment. Construction of large- and medium-sized helicopter staging areas would be required under Alternative 6. The use of helicopter construction would minimize land disturbances that otherwise would be caused by re-opening and/or improving existing spur roads to each existing tower. Some of the existing spur roads have not been maintained for decades. Helicopter staging areas would be constructed in various areas along and near Segments 6 and 11 in and near the ANF (some staging areas would be on private lands, others on NFS lands). Access roads along both segments would need to be improved in some areas in order to allow large equipment for splicing and pulling of conductors; however, road improvements would be less than for Alternatives 2, 3, 4, 5, or 7 because new 500-kV LSTs would be constructed at the staging areas and air-lifted in, rather than being transported by on-the-ground equipment. This means that access roads could remain in current conditions or would need only slight widening and/or improvement. Under Alternative 6 for Segment 6, SCE would not widen the following existing access roads: an access road at MP S6 3.0 to 4.7 south of Kentucky Springs Canyon; FS Road 3N23 from Monte Cristo Campground to FS Road 4N18.1 and 4N18.2; Lynx Gulch Road (FS Road 4N18.2) from Upper Big Tujunga Canyon Road, northward for approximately 1.25 miles; FS Road 3N20 from approximately S6 MP 13.6 to 16.4; FS Road 2N23 along the border of the San Gabriel Wilderness from approximately MP S6 18.3 to MP 19.7; or the West Fork National Scenic Bikeway or FS Road 2N25.2 to access Segment 6 from the San Gabriel Canyon Road (State Highway 39).

For Segment 11 under Alternative 6, SCE would not use FS Road 4N24 south of Aliso Canyon from approximately S11 MP 4.0 to 6.1; and, would not reconstruct a washed-out bridge over Fall Creek and would not re-open the southern end of FS Road 3N27. From Camp 16 on Mount Gleason west to

helicopter staging area #4, SCE would use the existing paved roadway but would not be required to repair any damage to the pavement, thereby changing the existing visual environment to a more rugged, rustic driving experience suitable for OHVs and/or high clearance vehicles.

In all other areas outside the ANF in the North Area and in the South Area, Alternative 6 would be identical to the proposed Project (Alternative 2) and visual impacts would be identical.

Implementation of all mitigation measures described above for Alternative 2 is also recommended under Alternative 6, and the different visual effects for the Center Area are described and simulated in Figures 3.14-64a/b through 3.14-83a/b of the TRTP Map and Figures Series Volume.

Cumulative Impacts

Impacts associated with Alternative 6 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable future projects. Alternative 6 changes the construction methods, but does not change the transmission line route from that proposed under Alternative 2. Therefore, this alternative has the same general geographic extent, existing cumulative conditions, reasonably foreseeable future projects and changes, and cumulative impacts as those expected under Alternative 2. The significance of cumulative impacts identified under Alternative 2 would be the same for Alternative 6, despite differences in construction resulting from helicopter activities.

3.14.7 Alternative 7: 66-kV Subtransmission Alternative

This alternative is comprised of three 66-kV subtransmission line elements, including the following: (1) undergrounding the 66-kV subtransmission line in Segment 7 through the River Commons or Duck Farm Project (between Valley Boulevard – S7 MP 8.9 and S7 MP 9.9); (2) re-routing and undergrounding the 66-kV subtransmission line around the Whittier Narrows Recreation area in Segment 7 (S7 MP 11.4 to 12.025); and (3) re-routing the 66-kV subtransmission line around the Whittier Narrows Recreation Area in Segment 8A between the San Gabriel Junction (S8A MP 2.2) and S8A MP 3.8.

Direct and Indirect Impacts

Except for the three 66-kV subtransmission line elements of Segments 7 and 8A that would be either placed underground or re-routed overhead, all other portions of Alternative 7 would be identical to the proposed Project (Alternative 2). The visual impacts and their associated mitigation measures for Alternative 7 would be identical to those that are introduced for Alternatives 2 and 3. Refer to Sections 3.14.6.1 and 3.14.7.1 of the EIR/EIS for a detailed description of these impacts and mitigation measures. Additionally, the visual environment would be slightly improved where two subtransmission lines would be placed underground, and the visual environment of the overhead subtransmission line would be slightly degraded.

Cumulative Impacts

Impacts associated with Alternative 7 would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. The minor re-route of the proposed Project transmission line associated with Alternative 7 would not affect the proposed Project's contribution to cumulative impacts. Therefore, cumulative impacts of Alternative 7 would be exactly the same as cumulative impacts for Alternative 2, as described in detail in Section 3.14.6.2 of the EIR/EIS. Mitigation measures introduced for Alternative 7 in Section 3.14.11.1 of the EIR/EIS would help to reduce this alternative's incremental contribution to cumulative impacts. However, no additional

mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level for visual resources.

3.15 Wilderness and Recreation

Section 3.15 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to wilderness and recreation. A summary of the effects on wilderness and recreation resources is presented below.

3.15.1 Alternative 1: No Action/Project

Under the No Project/Action Alternative, construction, operation, and maintenance of the proposed Project or an alternative would not occur. As such, associated wilderness and recreation impacts of the proposed Project or an alternative would not occur. However, in the absence of the proposed Project or an alternative to the Project, the purposes and need for the power transmission capabilities that would be met by TRTP would not be achieved. As a result, it is possible that another, similar transmission line project would be constructed in the future to meet the power transmission needs of developing wind farms in the Tehachapi Wind Resource Area. Such a project would likely introduce similar impacts to recreational and wilderness resources that would be introduced through the proposed TRTP or an alternative.

Environmental conditions in the Project Area are expected to naturally change or evolve over time and therefore, independently of the proposed Project or an alternative to the Project (including the No Project/Action Alternative), the regional setting and baseline conditions in the Project Area which are discussed in Section 3.15.2.1 (Regional Setting) of the EIR/EIS would not remain static. If the No Project/Action Alternative is implemented, wilderness and recreation resources within the Project Area will continue to naturally evolve over time. The following section describes how wilderness and recreation resources in the Project Area are expected to change in the future, under the No Project/Action Alternative.

North Region

In general, the extent and variety of recreational resources within the North Region are expected to increase in the future. However, this increase is not dependent upon selection of the No Project/Action Alternative and will likely occur independently of the proposed Project or an alternative to the proposed Project. Due to the general lack of wilderness areas in the North Region, it is not expected that designated Wilderness Areas will be established in the area.

Central Region

The Central Region of the Project Area includes the ANF, which will continue to be managed by the Forest Service in the future, regardless of the potential implementation of the proposed Project or an alternative to the proposed Project (including the No Project/Action Alternative). As such, designated Wilderness Areas including the San Gabriel WA, which is adjacent to the proposed TRTP route, would remain protected. Recreational resources within the Central Region would continue to exist under the management of the Forest Service for the purpose of public recreation and enjoyment.

Section 3.15.2.1 (Regional Setting) of the EIR/EIS describes the land use zones that are used by the Forest Service for management of the ANF. One of these land use designations is the Developed Area Interface (DAI) zone, which applies to lands that are adjacent to communities or concentrated developed areas. The management goal for this zone is to encourage slow development with carefully designed

facilities. Baseline conditions in areas surrounding the ANF, as described in Section 3.15.2.1 (Regional Setting) of the EIR/EIS, include rapidly expanding urban development to the north and highly urbanized and built-up communities to the south. As such, the DAI zone designation applies to areas of the ANF which buffer Forest boundaries to the north and south. In the future, as Palmdale (which is adjacent to the northern border of the ANF) continues to expand and develop, Forest Service management of the DAI zone along this northern border will control potential impacts associated with urban encroachment on Forest lands. Similarly, Forest management of the DAI zone along the southern border of the ANF will protect the Forest from urban encroachment by the existing cities and communities of the south region. Urban development in the south is expected to be slower than in the north due to existing built-up conditions, but the demand for open space and public recreation areas is still high and expected to rise as the general population increases. Slow development of recreational facilities within all DAI land use areas is permitted and expected to occur gradually.

South Region

As described in Section 3.15.2.1 (Regional Setting) of the EIR/EIS, the South Region is highly urbanized and includes a variety of developed recreational resources including urban parks, trails, and sporting areas. For the most part, population growth in the cities and communities of the South Region is expected to continue in the future. As such, open space and recreational resources in the South Region will continue to be in high demand and as population growth continues, the demand for open space is also expected to increase. It is expected that communities will continue to utilize transmission corridors for the establishment of urban parks and trails.

Existing utility corridors in the South Region currently represent valuable open space areas that public recreationists commonly utilize for outdoor enjoyment and general recreation. In the future, it is expected that recreational resources will continue to exist within the utility corridors and that as the demand for recreational areas continues to rise, cities and communities may increasingly look to open space within existing utility corridors for the establishment of recreational public use areas.

3.15.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following direct and indirect effects on wilderness and recreation:

- Construction and/or operation and maintenance of the proposed Project would have the potential to disrupt activities within or restrict access to certain established recreational resources and opportunities, particularly those located in proximity to Project components, including transmission lines, substations, and helicopter staging areas. Recreational activities including passive or dispersed recreation, such as nature study and general outdoor enjoyment, could be disrupted as a result of noise, aesthetics, and land disturbance associated with Project construction. Such disruptions would be temporary in nature and would not extend beyond the construction period. All wilderness and recreation resources within one-half mile of the proposed Project would have the potential to be affected by Project construction activities. In particular, resources that are subject to a "direct crossing" by the proposed transmission line (i.e. the transmission line would span over these resources), would be temporarily unavailable for use during the construction period and during certain operation and maintenance activities, depending on the intensity of work required. Certain sensitive or unique resources, including the Pacific Crest National Scenic Trail (PCT), would also be affected by this impact, as the proposed transmission line would traverse the PCT the three separate locations (twice in the ANF). Additionally, construction of the Project would require the

use of certain Forest System and non-Forest System roads for vehicle and equipment access throughout the ANF (as relevant to the Project). As discussed in the Wilderness and Recreation analysis (see Section 3.15 of the EIR/EIS), Forest System roads are maintained to specific Operation Maintenance Levels (OMLs), with off-highway vehicle (OHV) use restricted to OML 2 roads due to safety considerations. Therefore, roads that would be temporarily upgraded to accommodate Project construction access would also be temporarily unavailable to OHV recreationists, until the road is returned to OML 2 conditions. Also with regards to roads in the Forest, the construction of spur roads to transmission towers would have the potential to facilitate unmanaged recreation on Forest lands not intended for recreational purposes, particularly with regards to OHV use. In order to manage ANF resources in accordance with the 2005 FLMP, the Forest Service may choose to restrict access to certain areas of the ANF if unmanaged recreation increases substantially and/or threatens the integrity of the ANF. Construction noise near the San Gabriel WA, particularly with the use of helicopters, would temporarily degrade the characteristic of “solitude and unconfined recreation” on wilderness lands, but the project would not have a long-term or permanent effect on the WA.

Mitigation. Mitigation measures proposed to reduce the significance of as the Project impacts described above include the following: (1) Coordinate construction schedule with managing officer/s for affected recreation areas; (2) Identify and provide noticing of alternative recreation areas; (3) Notification of temporary closure of OHV routes; (4) Notification of temporary closure and reroute of the Pacific Crest National Scenic Trail; (5) Aircraft flight path and safety provisions and consultation; (6) Avoid permanent upgrades to Forest System roads; and (7) SCE Shall Assist in the Completion of Backlogged Maintenance Activities.

- Construction and/or operation and maintenance of the proposed Project would have the potential to temporarily alter the “solitude and unconfined recreation” characteristic of the San Gabriel WA as a result of Project-related noise, aesthetics, and air quality emissions, among other possible features that would be incongruous with the characteristics for which Wilderness Areas are designated by the United States Congress. Similarly, these Project features would also have the potential to temporarily alter the “backcountry experience” for recreationists on the PCT, particularly in the three areas where the Project would traverse the PCT (once in the North Region and twice in the Central Region). These affects to the “solitude and unconfined recreation” characteristic of designated WAs and the “backcountry experience” of the PCT would be temporary in nature and would only occur when construction and/or operation and maintenance activities occur in the immediate vicinity of a designated WA or the PCT.

Mitigation. Mitigation measures proposed to reduce the significance of Project affects on the existing characteristics of designated WAs and the PCT are the same as those listed above.

Cumulative Impacts

Each of the wilderness and recreation impacts discussed above would be cumulatively considerable, in that each impact would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. As such, all wilderness and recreation impacts would have an incremental effect on the cumulative scenario. In total, the proposed Project would include four wilderness and recreation impacts that would be cumulatively significant and unavoidable (Class I) and two wilderness and recreation impacts that would be less than significant with no mitigation required (Class III).

The following wilderness and recreation impacts of the proposed Project would be cumulatively considerable and would combine with similar impacts of other projects to result in impacts that are expected to be significant and unavoidable: construction activities would restrict access to or disrupt activities within established recreational areas; project activities (construction or operation and maintenance) would cause or contribute to the degradation of one or more of the four primary

characteristics of a designated Wilderness Area, as defined by the Wilderness Act, Public Law 88-577 (16 U.S.C. 1131-1136); the Project would cause or contribute to degradation of the Pacific Crest National Scenic Trail (PCT); and the Project would facilitate unmanaged recreational uses that would contribute to the long-term loss or degradation of recreational opportunities.

The following wilderness and recreation impacts of the proposed Project would be cumulatively considerable but less than significant: operation and maintenance activities would restrict access to or disrupt activities within established recreational areas; and the Project would contribute to degradation of Off-Highway Vehicle (OHV) trails or Open Riding Areas, or would result in a loss of recreational opportunity for OHV users.

3.15.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

Although this alternative introduces a reroute of part of the proposed transmission line in the North Region, the reroute would not cross through or be placed within one-half mile of any new wilderness or recreation resources. Therefore, the wilderness and recreation impacts that would occur under Alternative 3 would be exactly the same as the proposed Project, and would require the same mitigation as listed above.

Cumulative Impacts

As with the proposed Project, each of the wilderness and recreation impacts identified in Section 3.15.6.1 (Direct and Indirect Effects Analysis: Alternative 2) of the EIR/EIS would be cumulatively considerable, in that each impact would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. Each of the wilderness and recreation impacts under Alternative 3 (as discussed in full detail in Section 3.15.6.1 of the EIR/EIS) would have an incremental effect on the cumulative scenario. Cumulative wilderness and recreation impacts under Alternative 3 would be the same as under the proposed Project.

3.15.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

All wilderness and recreation impacts that would occur under the proposed Project would also occur under Alternative 4; however, because the Alternative 4 routing options diverge from the proposed Project alignment at MP 19.2 of Segment 8A, all wilderness and recreation impacts that would occur for the proposed Project between S8A MP 19.2 and MP 35.2 would not occur under Alternative 4. In addition, each of the four routing options included under Alternative 4 would have the potential to affect different recreational resources within the Chino Hills State Park (CHSP). For the purposes of this analysis and as consistent with the proposed Project, all wilderness and recreation resources located within one-half mile of the alignment are considered to have the potential to be affected by Project activities, which are inclusive of construction, operation, and maintenance of the proposed transmission line, as well as any removal and rerouting of existing transmission line(s) in the CHSP that would occur during the construction period (such as with Route 4C).

Following is a summary of the number of recreational resources that would have the potential to be affected under each Alternative 4 routing option that are located within the CHSP and not included in the Affected Environment for the proposed Project: Route 4A (twelve); Route 4B (eleven); Route 4C (seven); and Route D (eleven). Although the same wilderness and recreation impacts would occur under

Alternative 4 as under the proposed Project, impacts would have the potential to affect different resources in the South Region, depending on the routing option selected. In addition, because the CHSP is protected by California State Parks for open space preservation and conservation, any Project activities that occur within the CHSP would have the potential to affect passive or dispersed recreation, which includes activities such as nature study and general outdoor enjoyment. Under Alternative 4, potential wilderness and recreation would occur in both the ANF and the CHSP, whereas under the other Project alternatives, such affects would not occur in the CHSP. Please see Section 3.15.8 (Alternative 4: Chino Hills Route Alternative) of the EIR/EIS for a detailed discussion of the specific recreational resources included in this analysis. Most of the CHSP resources that would have the potential to be affected by Alternative 4 are recreational trails (camping is only permitting in one area of the CHSP which is not located within one-half mile of the routing options). As with the proposed Project, none of the resources included under Alternative 4 would be permanently disrupted or restricted from use. The San Gabriel WA and the PCT would be affected in the exact same way(s) by Alternative 4 as the proposed Project.

The same mitigation measures introduced for the proposed Project would also be required for Alternative 4 (all routing options).

Cumulative Impacts

The proposed routing options included under Alternative 4 would have the potential to incrementally increase or decrease the proposed Project's contribution to cumulative impacts because they would have the potential to affect recreational resources that would not be affected by the proposed Project, and they would likewise avoid effects to some recreational resources that would be impacted by the proposed Project. The analysis of the Alternative 4 routing options provided in Section 3.15.8.1 of the EIR/EIS indicates that although there would be some location-specific differences between the proposed Project and Alternative 4, such location-specific differences are limited to a portion of the South Region. Additionally, the nature of cumulative impacts that would occur under Alternative 4 is the same as the nature of cumulative impacts that would occur under the proposed Project. As such, Alternative 4's contribution to cumulative impacts would be the same as the proposed Project's contribution. Please see Section 3.15.6.2 (Cumulative Impact Analysis: Alternative 2) of the EIR/EIS for a detailed discussion of these cumulative Project impacts.

3.15.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

Alternative 5 would place a portion of the proposed transmission line underground in the South Region; however, no new wilderness or recreation resources would be introduced as a result of the underground segment, and no resources identified as being affected under the proposed Project would be avoided. Facilities and infrastructure associated with transitioning the line between its overhead and underground alignments would not affect existing recreational resources identified within one-half mile of Alternative 5. All Wilderness and Recreation impacts of Alternative 5 would be the same as the proposed Project, and the same mitigation measures introduced for the proposed Project are also recommended for Alternative 5.

Cumulative Impacts

The underground portion of Alternative 5 would not affect the proposed Project's contribution to cumulative wilderness and recreation impacts and therefore, cumulative impacts of Alternative 5 would be

exactly the same as cumulative impacts for the proposed Project, as described in detail in Section 3.15.6.2 of the EIR/EIS.

3.15.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Under Alternative 6, 146 transmission towers in the ANF would be constructed using helicopters, as opposed to the 33 helicopter-constructed towers included under the proposed Project. Although helicopters would be used to install certain transmission towers, ground access would also be required to all pulling and stringing locations along the Project route and therefore, most of the same roads that would be used under the proposed Project would also be used under Alternative 6. Please see Chapter 2 (Description of Alternatives) for a full discussion of roads, including those required for access to the helicopter staging areas. As with the proposed Project, the location of helicopter staging areas for Alternative 6 would have the potential to affect recreational resources located within one-half mile, as identified and discussed in detail in Section 3.15 of the EIR/EIS. During the construction period, the helicopter activities included under Alternative 6 would introduce wilderness and recreation impacts to a broader range of resources than the proposed Project because in addition to requiring use of most of the same roadways (for access to pulling and stringing sites), Alternative 6 would also include substantially greater helicopter traffic between staging areas and transmission tower sites. Alternative 6 includes the construction of 113 more towers by helicopter than the proposed Project (146 versus 33) and although it is not possible to determine specific helicopter flight paths prior to final engineering, it is reasonably assumed that because flight paths would be up to 2.5 miles long and would occur numerous times per day during the construction period, recreational resources or opportunities that are not included in the Affected Environment for the proposed Project (as being within one-half mile of Project components) would be affected through exposure to helicopter features such as noise and aesthetics under Alternative 6. As such, construction activities included under Alternative 6 would have increased temporary (construction) impacts to recreation resources and opportunities in the ANF.

Operation and maintenance activities required under Alternative 6 would be the same as required under the proposed Project. In addition, it is expected that the long-term occurrence of unmanaged recreation in the ANF, particularly through unauthorized OHV use, would be lower under Alternative 6 than under the proposed Project because of fewer spur roads being improved or installed. As discussed in Section 3.15 of the EIR/EIS, unauthorized OHV use is most likely to occur where roads are improved, thus providing access to areas not otherwise accessible. With a decrease in unmanaged recreation under Alternative 6, it would also be less likely that the Forest Service would need to close public access to certain areas of the Forest in order to control the occurrence of unmanaged recreation.

The mitigation measures listed above for the proposed Project are also recommended for Alternative 6.

Cumulative Impacts

The use of helicopters during construction of Alternative 6 would affect recreational resources and opportunities that are not already included in the Affected Environment for the proposed Project as being within one-half mile of Project components, as a result of the numerous and varied flight paths that would be required in order to construct 146 transmission towers via helicopter. However, these impacts would be temporary in nature and would not affect the contribution of Alternative 6 to cumulative wilderness and recreation impacts. Therefore, cumulative impacts of Alternative 6 would be exactly the same as cumulative impacts for the proposed Project, as described in detail in Section 3.15.6.2 of the EIR/EIS.

3.15.7 Alternative 7: Maximum 66-kV Subtransmission Alternative

Direct and Indirect Impacts

All wilderness and recreation impacts that would occur under the proposed Project would also occur under Alternative 7, with the exception of the portion of Segment 7 where the planned River Commons at the Duck Farm Project (Duck Farm Project) is located within the Project ROW from MP 8.9 – 10.5. Under Alternative 7, potential impacts to the Duck Farm Project would be avoided or minimized by installing the 66-kV subtransmission line underground because under the proposed Project, this subtransmission line would be situated above-ground and in an alignment that would be highly disruptive to the Duck Farm Project's planned layout and recreational facilities. By installing this subtransmission line underground, the layout of the Duck Farm Project will allow for recreational activities to occur where they otherwise would have been precluded by the above-ground subtransmission line. All other wilderness and recreation impacts that would occur under Alternative 7 would be exactly the same as the proposed Project.

The same mitigation measures introduced for the proposed Project are also recommended for Alternative 7.

Cumulative Impacts

The re-aligned and/or re-configured portions of the Alternative 7 66-kV sub-transmission line in the South Region would not affect the Project's contribution to cumulative wilderness and recreation impacts and therefore, cumulative impacts of Alternative 7 would be exactly the same as cumulative impacts for the proposed Project, as described in detail in Section 3.15.6.2 of the EIR/EIS.

3.16 Wildfire Prevention and Suppression

Section 3.16 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to wildfire prevention and suppression. A summary of the effects on wildfire prevention and suppression is presented below.

3.16.1 Alternative 1: No Action/Project

Selection of the No Project/Action Alternative would mean that the proposed TRTP would not be implemented. As such, none of the associated Project activities would occur and the environmental impacts associated specifically with the proposed Project would not occur. Specifically, the interference with firefighting operations from construction activities and from new or taller transmission lines across the landscape, the new transmission line-related wildfire ignitions, and the non-native plant introductions from the Project that would contribute to a change in fuel conditions would not occur.

Direct and Indirect Impacts

However, under the No Project/Action Alternative, some currently unknown plan would need to be developed to provide the transmission upgrades necessary to interconnect renewable generation projects in the Tehachapi area and to also address the existing transmission problems south of Lugo Substation. Similarly, other yet unspecified transmission upgrades would presumably be proposed in the future to provide the needed capacity and reliability to serve growing electrical load in the Antelope Valley. To interconnect wind projects in the Tehachapi area, it is possible that other electrical utilities with transmission facilities in the area, such as LADWP, might purchase some of the power from Tehachapi wind developers and integrate it into their system. Another possibility is the development of a private

transmission line that could connect wind projects to the electrical grid. Any of these projects, which would occur as a result of the unfulfilled electrical transmission need in the absence of TRTP, are likely to have similar impacts as those identified for the proposed Project. However, if a transmission line were to be constructed in the absence of TRTP that was located in a new ROW through dense wildland fuels, construction of the new line in the new ROW would have the effect of introducing a substantially greater linear obstacle to firefighting across the landscape compared with the proposed Project and would involve substantially more intensive clearing and grading activities that could result in wildfire ignitions compared with the proposed Project.

Cumulative Impacts

Under Alternative 1, no impacts to wildfire prevention and suppression associated with the proposed Project would occur. However, as noted above, SCE would need to upgrade the existing infrastructure in order to accommodate the power load. As a result, cumulative impacts would be expected with construction of an alternative solution resulting in wildfire prevention and suppression impacts similar to those identified under Alternative 2 and would be cumulatively considerable, and, with consideration of other projects in the cumulative scenario, most wildfire prevention and suppression impacts would be significant and unavoidable.

Additionally, numerous potential developments throughout the proposed Project area that are completely unrelated to electrical transmission could ignite wildfires, such as residential development projects at the wildland-urban interface. Not only will these developments contribute to ignitions and obstructions during the construction phase, but once dwellings are occupied they will be a new source of long-term ignitions, contributing to a significant cumulative impact in combination with likely transmission system upgrades associated with Alternative 1.

3.16.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the following significant direct and indirect effects on wildfire prevention and suppression:

- Construction and/or maintenance activities would reduce the effectiveness of firefighting. Project construction and maintenance activities, including parking of vehicles and large equipment on narrow, single-lane roads, would interfere with fire engine access to wildfires in remote, wildland areas, which would reduce the effectiveness of firefighting.

Mitigation. The measure proposed to reduce this impact is as follows: Prepare wildland traffic control plans.

- Construction and/or maintenance activities would increase the risk of wildfire. Construction activities associated with the proposed Project would include blasting, excavation, grading, and the use of vehicles and heavy equipment. The use of heavy equipment along with the personnel required to construct, repair, and maintain the transmission line would introduce a variety of potential wildfire ignition sources to surrounding vegetation fuels. Construction activities would also introduce additional combustible materials to the construction areas, such as diesel fuel and herbicides.

Mitigation. Measures proposed to reduce these impacts include: (1) Revise Fire Management Plan, (2) Cease work during Red Flag Warning events, (3) Ensure open communication pathways, (4) Remove hazards from the work area, (5) Comply with non-smoking policy on PHLNHA lands, (6) Share costs for ANF fuelbreak maintenance.

- Construction and/or maintenance activities would increase the risk of personnel injury or death in the event of fire. Construction and maintenance personnel would be exposed to an increased risk of injury or death in the event of a fire in the vicinity of construction areas if sufficient emergency evacuation routes were not available in wildland areas, or if safe emergency evacuation routes were not known to personnel prior to an incident.

Mitigation. Measures proposed to reduce these impacts include: (1) Cease work during Red Flag Warning events, and (2) Prepare and implement Emergency Evacuation Plan.

- Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread. Project construction and maintenance activities create the potential for the introduction and spread of non-native, invasive plants. Non-native plants are often spread by human and vehicle vectors in areas of large-scale soil disturbance and importation. Construction and maintenance of the proposed Project would contribute to the introduction and proliferation of non-native, invasive plants. Certain invasive plants, like cheatgrass, medusa head and Saharan mustard, can contribute to changes in wildfire frequency, timing and spread (Cal-IPC, 2007). Cheatgrass and medusa head, for example, dry out earlier in the season than native grasses, extending the length of the fire season and creating fine fuels that are easily ignited. These fine fuels contribute to wildfire ignitions earlier in the year and an increased level of fire recurrence. In addition, non-native grasslands have a “spotting” effect during a wildfire, where embers from these grasslands are blown ahead of the fire line, contributing to an increased rate of fire spread. Invasive annual grasses also influence fire spread by creating a fine fuel continuum between patchy, perennial shrubs allowing wildfires to expand further into otherwise sparsely vegetated wildlands (Wiedinmyer and Neff, 2007). The introduction and spread of specific invasive plants within the proposed Project ROW would adversely influence fire behavior by increasing the fuel load, fire frequency and fire spread.

Mitigation. The measure proposed to reduce this impact is as follows: Prepare and implement a Weed Control Plan.

Implementation of the proposed Project would also have minor impacts related to wildfire prevention and suppression. For example, Presence of new or higher overhead transmission line would reduce the effectiveness of firefighting; however, the proposed Project would only marginally increase the height of existing firefighting obstacles because it would be located in an existing transmission corridor with existing structures, therefore this impact is not considered to be significant.

Cumulative Impacts

As discussed in Section 3.16 of the EIR/EIS, development in the Wildland Urban Interface areas of the proposed Project area is ongoing. Other projects in the Cumulative Scenario (including past, present, and future) introduce impacts to wildfire prevention and suppression that are similar to the impacts described above. Mitigation described above would reduce the proposed Project’s contribution to wildfire prevention and suppression impacts, but would not prevent impacts from combining with past, present, and reasonably foreseeable future projects. Most wildfire prevention and suppression impacts identified under Alternative 2 would be cumulatively considerable, and, with consideration of other projects in the cumulative scenario, most wildfire prevention and suppression impacts would be significant and unavoidable. No additional mitigation measures have been identified that would reduce cumulative impacts to a less-than-significant level.

3.16.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

This alternative introduces a re-route of part of the proposed transmission line in northern Los Angeles County, but the re-route would not be located in the high fire risk Project area. Therefore, effects of Alternative 3 on wildfire prevention and suppression would be the same as Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to wildfire prevention and suppression. No additional mitigation is recommended.

Cumulative Impacts

Based on the substantial similarity of Alternative 3 to the proposed Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project.

3.16.4 Alternative 4: Chino Hills Alternatives

Direct and Indirect Impacts

Alternative 4, which includes four routing alternatives (A, B, C, and D), is identical to the proposed Project except for a portion of Segment 8. The rerouted portions of all four of the Chino Hills Route Alternatives would be located entirely within the high risk Project area in and around Chino Hills State Park.

While Alternative 4A would decrease the total length of new transmission lines and upgrades by approximately 15.8 miles compared with the proposed Project, it would increase the mileage of new transmission line through the high-risk Project area by 2.3 miles, thereby increasing the potential for construction and operational ignitions in high-risk fuels.

While Alternative 4B would decrease the total length of new transmission lines and upgrades by approximately 12.2 miles compared with the proposed Project, it would increase the mileage of new transmission line through the high-risk Project area by 4.5 miles, thereby increasing the potential for construction and operational ignitions in high-risk fuels.

Alternative 4C would decrease the total length of new transmission lines and upgrades by approximately 10.1 miles compared with the proposed Project; however, it would increase the mileage of new transmission line through the high-risk Project area by 5.6 miles, thereby increasing the potential for construction and operational ignitions in high-risk fuels.

Alternative 4D would decrease the total length of new transmission lines and upgrades by approximately 12.1 miles compared with the proposed Project; however, it would increase the mileage of new transmission line through the high-risk Project area by 5.2 miles, increasing the potential for construction and operational ignitions in high-risk fuels. In addition, this alternative would introduce a new linear element to a high-risk fuel laden landscape in a new 5.3-mile length of ROW and create an indefensible space of approximately 2,000 acres in combination with existing transmission lines, thereby increasing the potential for interference with fire suppression efforts.

Therefore, effects of Alternative 4 (Routes A, B, C, and D) on wildfire prevention and suppression would be more severe than the effects of Alternative 2. Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to wildfire prevention and suppression. In addition, the following impact would differ from the proposed Project, and a new mitigation measure is recommended:

- Presence of the overhead transmission line would increase the risk of wildfire and compromise firefighter safety in the Tehachapi Fireshed. The re-routed portion of this alternative would result in a new or expanded transmission line alignment within CHSP and the area immediately north of CHSP. Each route of Alternative 4 would be constructed either directly adjacent, or in close proximity, to existing transmission lines within and immediately north of CHSP, where the risk of fire ignition due to presence of a transmission line already exists. Despite this existing risk, the additional infrastructure associated with any of the Alternative 4 routes would incrementally increase the amount of equipment in the area that could fail or be interfered with, thereby incrementally increasing the risk of a wildfire. As discussed above for Alternative 2, the risk of ignitions and the risk of damage from a Project-related ignition would be substantially reduced through implementation of adequate line clearances in compliance with GO95 Rule 35, and by performing adequate inspections to detect imminent component failures in compliance with GO 95 Rule 31.2. Nonetheless, presence of any of the Alternative 4 transmission line routes would result in an incremental increased risk of wildfire ignition, resulting in a significant impact.

Mitigation. The measure proposed to reduce this impact is as follow: Share costs for fuelbreak maintenance.

Cumulative Impacts

The incremental contribution of Alternative 4 to cumulative impacts would be marginally higher than the proposed Project's contribution.

3.16.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

This alternative would underground a four-mile segment of the 500-kV transmission line through Chino Hills. The segments of Alternative 5 that pass through the high fire risk Project area would be identical to the proposed Project, and the underground location of a portion of this alternative would not change the impacts associated with wildfire prevention and suppression activities. Therefore, effects of Alternative 5 on wildfire prevention and suppression would be the same as Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to wildfire prevention and suppression. No additional mitigation is recommended.

Cumulative Impacts

Based on the substantial similarity of Alternative 5 to the proposed Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project.

3.16.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

Alternative 6 would be similar to the proposed Project. The only difference would be that fewer miles of access roads would be constructed, fewer helicopter staging and landing sites would be graded and cleared of vegetation for the construction phase before being restored and revegetated post construction, and the bridge along Fall Creek Road would not be repaired. This bridge, which would provide for the crossing of Tujunga Creek and allow for dual access to Segment 11 under Alternative 2, would not be repaired under Alternative 6, providing only a single point of ingress and egress for personnel and firefighting crews in the event of a wildfire. The transmission line segments of Alternative 6 that pass through the

high fire risk Project area would be identical to the proposed Project, and impacts to personnel safety would be reduced with mitigation, however fewer miles of access roads would slightly reduce the severity of construction-related impacts associated with wildfire prevention and suppression activities. Therefore, effects of Alternative 6 on wildfire prevention and suppression would be slightly less than the effects of Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to wildfire prevention and suppression. The following additional mitigation measure is proposed to reduce impacts of Alternative 6: (1) Provide helicopter evacuation capability at Tujung Creek Bridge.

Cumulative Impacts

Based on the substantial similarity of Alternative 6 to the proposed Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project.

3.16.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

Alternative 3 is identical to the proposed Project, with the addition of undergrounding and rerouting three segments of existing 66-kV subtransmission lines along Segments 7 and 8A through the low risk Project area. The segments of Alternative 7 that pass through the high fire risk Project area would be identical to the proposed Project and the reroutes and undergrounding of subtransmission lines would not change the impacts associated with wildfire prevention and suppression activities. Therefore, effects of Alternative 7 on wildfire prevention and suppression would be the same as Alternative 2.

Mitigation described above for the proposed Project would also be required under this alternative in order to minimize impacts to wildfire prevention and suppression. No additional mitigation is recommended.

Cumulative Impacts

Based on the substantial similarity of Alternative 7 to the proposed Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project.

3.17 Electrical Interference and Hazards

Section 3.17 of the EIR/EIS provides a full analysis of the impacts of the proposed Project and alternatives related to electrical interference and hazards. A summary of the effects of electrical interference and hazards is presented below.

3.17.1 Alternative 1: No Action/Project

Direct and Indirect Impacts

Under the No Project/Action Alternative the Tehachapi Renewable Transmission Project would not be implemented. As such, none of the associated Project activities would occur and the environmental impacts associated with Project implementation would not occur. Impacts related to electronic interference, such as induced current and shock hazards, cardiac pacemaker interference, and other hazards would remain as they are with the existing transmission lines in the corridors. However, in the absence of the Project, SCE still would be required to interconnect and integrate power generation facilities into its electric system. SCE would need to accommodate the power load by upgrading existing transmission infrastructure or building new transmission facilities along a different alignment. Operation

and construction methods would likely result in electrical interference and hazard impacts similar to those resulting from the proposed Project and alternatives. These effects are anticipated to be localized and would not result in significant direct or indirect electrical interference and hazard impacts.

Cumulative Impacts

The electrical interference and hazard impacts of upgrading other existing transmission infrastructure or building new transmission facilities along a different alignment than the proposed Project would occur in the immediate vicinity of the transmission lines. These impacts would be similar to the impacts of the proposed Project and would not be additive.

3.17.2 Alternative 2: SCE's Proposed Project

Direct and Indirect Impacts

Implementation of Alternative 2, SCE's proposed Project, would result in the generation of electric fields and corona or gap discharges in the immediate vicinity of the transmission lines. These effects are anticipated to be localized and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation measures proposed to limit impacts to a less-than-significant level include: (1) Limit the conductor surface gradient so the electric field intensity on the conductor does not exceed the breakdown strength of air, and (2) Ensure that objects with the potential for induced voltages, such as fences, metal buildings, and pipelines, near the proposed rights-of-way are properly grounded.

Cumulative Impacts

The electrical interference and hazard impacts of the proposed Project occur in the immediate vicinity of the transmission line. These impacts would be similar to the impacts of the existing transmission lines which the proposed Project is adjacent to and would not be additive.

3.17.3 Alternative 3: West Lancaster Alternative

Direct and Indirect Impacts

For this alternative a portion of 500-kV transmission line in Segment 4 would re-routed and constructed within a new ROW. This re-route would increase the overall length of transmission line by approximately 0.4 mile. The electrical interference and hazard effects of Alternative 3 would be the same as for the proposed Project, they are anticipated to be localized, and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation described above for the Proposed Project would also be required for Alternative 3. No additional mitigation is recommended.

Cumulative Impacts

The electrical interference and hazard impacts of the routing alternative are localized and would not be additive to the impacts of the existing transmission lines which the alternative is adjacent to so this would not result in cumulative impacts.

3.17.4 Alternative 4: Chino Hills Route Alternatives

Direct and Indirect Impacts

For this alternative there are several routing variations in the area of Chino Hills. For much of the re-routes the lines are located adjacent to existing transmission lines with the exception of Alternative 4D where approximately 5 miles would follow the boundary of Chino Hills State Park with no existing transmission lines located adjacent to the alternative. The electrical interference and hazard effects of Alternative 4 would be the same as for the proposed Project, they are anticipated to be localized, and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation described above for the proposed Project would also be required for Alternative 4. No additional mitigation is recommended.

Cumulative Impacts

The electrical interference and hazard impacts of the routing alternative would not be additive to the impacts of the existing transmission lines which the alternative is adjacent to and are localized such that even in the case of areas with no existing lines, as for Alternative 4D, this would not result in cumulative impacts.

3.17.5 Alternative 5: Partial Underground Alternative

Direct and Indirect Impacts

This alternative would utilize underground construction through approximately 4 miles of the developed area of Chino Hills, in place of the proposed overhead line construction, following generally the same route as the proposed Project. The underground portion of Alternative 5 would not have the electrical interference and hazard effects which are associated with overhead lines. The electrical interference and hazard effects of the overhead portion of Alternative 5 would be the same as for the proposed Project, they are anticipated to be localized, and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation described above for the proposed Project would also be required for the overhead portions of Alternative 5. No additional mitigation is recommended.

Cumulative Impacts

The electrical interference and hazard impacts of the routing alternative are localized and would not be additive to the impacts of the existing transmission lines which the alternative is adjacent to so this would not result in cumulative impacts.

3.17.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative

Direct and Indirect Impacts

The proposed route and design for this alternative is exactly the same as that of the proposed Project (Alternative 2), only the construction method changes. The electrical interference and hazard effects of Alternative 6 would be the same as for the proposed Project, they are anticipated to be localized, and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation described above for the proposed Project would also be required for Alternative 6. No additional mitigation is recommended.

Cumulative Impacts

The electrical interference and hazard impacts of the routing alternative are localized and would not be additive to the impacts of the existing transmission lines which the alternative is adjacent to so this would not result in cumulative impacts.

3.17.7 Alternative 7: 66-kV Subtransmission Alternative

Direct and Indirect Impacts

This alternative would re-route two portions of 66-kV subtransmission line (Segment 7 and 8A both to avoid Whittier Narrows Recreation Area) and utilize underground construction in place of the proposed overhead line construction for two portions of the 66-kV subtransmission circuits (Segment 7 through the Duck Farm and Segment 8A north of Whittier Narrows Recreation Area). The lower voltage subtransmission lines would not have the electrical interference and hazard effects which are associated with high voltage overhead lines. The electrical interference and hazard effects of Alternative 7 would be the same as for the proposed Project, they are anticipated to be localized, and would not result in significant direct or indirect electrical interference and hazard impacts.

Mitigation described above for the proposed Project would also be required for the overhead portions of Alternative 7. No additional mitigation is recommended.

Cumulative Impacts

The electrical interference and hazard impacts of the routing alternative are localized and would not be additive to the impacts of the existing transmission lines which the alternative is adjacent to so this would not result in cumulative impacts.