

8. Alternative 4 (Chino Hills Routes): Impacts and Mitigation Measures

The following section describes visual resource impacts of Alternative 4, the Chino Hills Route Alternatives, as determined by the significance criteria listed in Section 4. Mitigation measures are introduced where necessary in order to reduce significant impacts to less-than-significant levels, as possible. As described in Section 1.2.4, Alternative 4 is identical to Alternative 2 in all respects except that Segment 8A would not occur from S8A MP 19.2 to 35.2 (16 miles) through Chino Hills, Chino, and Ontario, and Segment 8C would not occur. For all other locations, including Segment 8B between Chino and Mira Loma Substations, Alternative 4 is identical to Alternative 2.

8.1 Direct and Indirect Effects Analysis

The significance criteria used to identify impacts to visual resources are introduced in Section 4.1 (Criteria for Determining Impact Significance). Impacts associated with Alternative 4 Routes A, B, C, C Modified, and D are presented below under the applicable significance criterion. Impact assessments were based on data provided by SCE for TRTP, entitled “CHSP Structure List for Alternative 4, Options A, B, C, D. Structure Types, Heights, and Coordinates, Based on Preliminary Design” (SCE, 2008d).

Have a substantial adverse effect on the existing landscape character and visual quality of the site and its surroundings (Criterion VIS1)

Impacts associated with Criterion VIS1 for Alternative 4 would be the same as the impacts associated with the proposed Project, except that Segment 8A would not be constructed from S8A MP 19.2 to 35.2, a distance of 16 miles. No visual changes would occur between S8A MP 19.2 and MP 35.2; visual changes associated with Segment 8B (6.8 miles) would be the same as the proposed Project (Alternative 2). Visual changes would occur southeast of S8 MP 19.2 along the re-routed portion of Alternative 4 and would affect landscapes in the vicinity of Carbon Canyon Road, south of the Vellano Planned Development, in CHSP, and east of CHSP, and these adverse visual effects on existing landscape character and visual quality are described and simulated in Figures A-57a through A-61b for Routes A, B, C, C Modified, and D (see Appendix A). Alternative 4 Route C Modified is the shortest of the five 500-kV re-routes, at 4.7 miles, extending from S8A MP 19.2 to S8A MP 23.9; additionally, Route C Modified would reroute an existing 220-kV line for approximately 2.5 miles and reroute two existing parallel single-circuit 500-kV lines as a double-circuit line for 3.7 miles (includes routing lines into and out of a new switching station). Comparatively, the original Alternative 4 Route C is the next shortest of the five 500-kV re-routes, at 5.7 miles, extending from S8A MP 19.2 to S8A MP 24.9; additionally, Route C would reroute an existing 220-kV line for 3.4 miles and reroute two existing parallel single-circuit 500-kV lines as two parallel single-circuit 500-kV lines for 3.6 miles (includes routing lines into and out of the new switching station). Alternative 4 Route D is the longest of the five routes, at 9.8 miles, extending from S8 MP 19.2 to S8A MP 29.0. Route A would be 6.2 miles long and Route B would be 9.7 miles long.

Except for deletion of 16 miles of Segment 8A (includes deletion of Segment 8C), and the inclusion of five new routes in Segment 8A through and around CHSP, all other portions of Alternative 4 would be identical to the proposed Project (Alternative 2). The impacts and their associated mitigation measures that fall under Criterion VIS1 are summarized below. Please refer to Section 6.1 for a detailed description of these impacts.

Following are descriptions of KOPs relevant to the five routing options proposed under Alternative 4, as well as Segment 8B, which would be upgraded under Alternative 4, same as the proposed Project (Alternative 2).

KOP-South-18 – Chipola Court, Chino (Alternative 4 – Segment 8B)

This KOP was established by SCE and is located within a residential neighborhood in the eastern portion of the Landscape Unit 18. The transmission corridor continues to the east-northeast to the edge of the foreground in this view, and the San Bernardino Mountains are very faintly visible in the background. Alternative 4 would replace existing single-circuit 220-kV LSTs with double-circuit 220-kV LSTs. See Figure A-53c in Appendix A.

Overall Visual Change: low. For all five options of Alternative 4, in Segment 8B, replacing existing single-circuit 220-kV LSTs with double-circuit 220-kV LSTs would create low visual contrast, low dominance, and low view/skyline blockage/impairment. The overall visual change would be low, as illustrated in Figure A-53c, which is a composite of an SCE photograph and simulation.

KOP-South-21 – Carbon Canyon Road, Orange County (Alternative 4 – Routes A/B/C/C Modified/D, Segment 8A)

This KOP was established by the visual analyst and is located on Carbon Canyon Road (State Highway 142) in Orange County, looking north from the northbound lane. Carbon Canyon Road runs northeast from Lambert Road in Brea (Orange County) to State Route 71 in Chino Hills (San Bernardino County). This portion of Landscape Unit 16 is typified by the deeply incised canyon walls and rolling hills covered with scattered brush, with the curving, narrow, two-lane road following the contours upstream. This portion of Highway 142 is eligible for inclusion in the State Scenic Highway System (CALTRANS, 2008). Alternative 4 would add a new transmission line with 500-kV LST structures that would be parallel to an existing 220-kV transmission line. See Figure A-57b in Appendix A for a simulation prepared by the visual analysts.

Routes A, C, and C Modified Overall Visual Change: high. Routes A, C, and C Modified have structures in the same location on this skyline ridge, but in a different location than Routes B and D. With high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

Routes B and D Overall Visual Change: high. Routes B and D have structures in the same location on this skyline ridge, but in a different location than Routes A, Original C, or C Modified. With high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

KOP-South-22 – Vellano Planned Development, Chino Hills (Alternative 4 – Routes A/B/C/C Modified/D, Segment 8A)

KOP-South-22 was established by the visual analyst. This panoramic view is located in the Vellano Planned Development on Vellano Club Road, just uphill from Catena Drive, looking southeast toward Chino Hills State Park and surrounding undeveloped lands north of the Park. This portion of Landscape Unit 16 continues the typical forested and brush-covered rolling hills that are largely undeveloped. KOP-South-22 uses a single frame of this panoramic view. Alternative 4 would add a new transmission line with 500-kV LST structures that would be parallel to an existing 220-kV transmission line. See Figures A-58a/b/c/d/e in Appendix A for simulations of Alternative 4 Routes A/B/C/C Modified/D, which were prepared by the visual analysts.

Each Route of Alternative 4 (A, B, C, C Modified, and D) has a different location for structures on this skyline ridge as seen from KOP-South-22. However, Route A and Route B are very similar and would be parallel to the existing transmission line. Visual Impacts and Mitigation Measures would be similar for Route A and Route B.

Routes A and B Overall Visual Change: high. With high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

Routes C and C Modified Overall Visual Change: high. With high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

Route D Overall Visual Change: high. With high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

KOP-South-23 – Chino Hills State Park Trail, CHSP (Alternative 4 Route A, Segment 8A)

KOP-South-23 was established by the visual analyst and is located within Chino Hills State Park on a hiking/equestrian trail and fire road that connects Telegraph Canyon Trail to Raptor Ridge Trail in the southern portion of Landscape Unit 17. Foreground and middleground features include rolling, undeveloped hills covered with native grasses and non-native mustard, which, when in bloom, is very scenic. Existing 220-kV double-circuit and 500-kV single-circuit transmission lines are very visible on the skyline ridge, and the trail crosses directly under these lines. Alternative 4 Route A would construct a new gas insulated switching station in the vicinity of the center of this photograph. Figure A-59b in Appendix A displays a visual simulation of the switching station, prepared by the visual analyst and based on preliminary engineering data provided by SCE.

Route 4A Overall Visual Change: high. With high visual contrast and high dominance, the Switching Station proposed in Route A would create high overall visual change.

Routes B and C Modified Overall Visual Changes: high. Routes B and C Modified would construct a new 500-kV transmission line parallel to an existing transmission line in this vicinity. Additionally, Route C Modified would remove two existing transmission lines in this vicinity and would relocate them to a new ROW further west in CHSP, leading to a new switching station, but would leave one existing transmission line in its current location in this view. A new 500-kV transmission line would be constructed parallel to this remaining line. With high visual contrast and high dominance, the new 500-kV transmission line proposed in Routes B and C Modified would create high overall visual change.

Original Route C Overall Visual Change: beneficial. Original Route C would remove three existing transmission lines in this vicinity and would relocate them to a new ROW further west in CHSP. With no visual contrast and no dominance, the removal of existing transmission lines in the vicinity of KOP-South-23 as proposed in the Original Route C would create beneficial visual changes.

Route D Overall Visual Change. Existing visual conditions as seen from KOP-South-23 would not change if Route D were adopted. There would be no beneficial or adverse visual effects.

KOP-South-24 – Horse Camp in Chino Hills State park, CHSP (Segment 8)

This KOP was established by the visual analyst and is located at the equestrian center within Chino Hills State Park. The Horse Camp is located on a hilltop at the southern end of Bane Canyon Road in the southern portion of Landscape Unit 17. Existing 220-kV double-circuit and 500-kV single-circuit

transmission lines are very visible on the skyline ridges. Corrals draw attention to the immediate foreground features. Paved roads and the restroom of the camping area are visible in the middleground. The five different routes of Alternative 4 would result in five different visual scenarios as seen from KOP-South-24. See Figures A-60a/b/c/d/e in Appendix A for four different simulations prepared by the visual analysts for KOP-South-24.

Route A Overall Visual Change: high. With high visual contrast and high dominance, the Switching Station proposed in Route A would create high overall visual change.

Route B Overall Visual Change: high. With high visual contrast, high skyline blockage, and high dominance, the new double circuit LSTs proposed in Route B would create high overall visual change.

Original Route C and Route C Modified Overall Visual Change: low and beneficial. With Route C, existing transmission lines would be relocated to areas less visible, and a new Switching Station would be constructed in an area with good topographic screening. There would be less visual contrast, less skyline blockage, and less visual dominance, as compared to the existing situation. Combined with high overall visual sensitivity of the visual setting and viewing characteristics, overall visual effects would be beneficial.

Route D Overall Visual Change: high. With high visual contrast, high skyline blockage, and high dominance, the new double circuit LSTs proposed in Route D along and outside the Park boundary would create high overall visual change.

KOP-South-25 – Butterfield Ranch Road, Chino Hills (Alternative 4- Routes B/D, Segment 8A)

This KOP was established by the visual analyst and is located on Butterfield Ranch Road, just east of Chino Hills State Park, looking west across undeveloped lands toward the eastern boundary of CHSP. This portion of Landscape Unit 17 is typical of the interface of developed and undeveloped landscapes, with grass covered rolling hills that are currently undeveloped, except for two parallel lines of double circuit transmission lines. Alternative 4 Routes B and D would develop a gas insulated switching station in this vicinity. See Figure A-61b in Appendix A for a simulation of this switching station, as illustrated by the visual analysts. The all-weather (paved) road leading to the switching station and the access and spur roads to new structures are not simulated in Figure A-57b because of lack of specific engineering data from SCE.

Route A, Original Route 4C, and Route C Modified Overall Visual Change: None. Route A, Original Route C, and Route C Modified would not involve any new construction in this vicinity. There would be no change from current conditions as seen from KOP-South-25 if TRTP Route A, Route C, or Route C Modified were selected.

Routes B and D Overall Visual Change: high. With high visual contrast and high dominance, the gas-insulated switching station proposed in Routes B or D would create high overall visual change.

Under Alternative 4 effects associated with Impact V-1 (Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of landscape views) would be the same as for the proposed Project for the North and Center Areas, and the western portion of the South Area. In the eastern portion of the South Area, it would be different for Segment 8A from MP 19.2 to 35.2 where no construction activities would occur along the proposed Project 500-kV T/L. Additionally, construction activities would occur along the 6.8 length of Segment 8B between Chino and Mira Loma

Substations and within and near Chino Hills State Park. Construction impacts on visual resources would result from 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 route. Construction impacts on visual resources would also result from the temporary alteration of landforms and vegetation along the utility corridor. Vehicles, heavy equipment, helicopters, materials, and workers would be visible during site clearing, grading, substation expansion and construction, structure erection, conductor stringing, cable placement, and site/ROW clean-up and restoration. Construction equipment and activities would be seen by various viewers in close proximity to the sites and utility corridor including adjacent and nearby residents and recreationists on roads and trails (including the PCT). View durations would vary from brief to extended periods. Construction of the transmission line, construction of the new Whirlwind Substation, expansion and improvements at the existing Antelope, Vincent, Gould, and Mesa Substations, construction of an all-weather (e.g., paved) road, access/spur roads in or near CHSP, construction of a new switching station in or near CHSP, and use of construction staging areas would result in the visual intrusion of construction vehicles, helicopters, equipment, storage materials, and workers.

Impact V-1 for Alternative 4 would require implementation of the following mitigation measure, which is fully described in Section 6.1: MM V-1 (Clean up staging areas, storage areas, marshalling yards, helicopter staging areas, access and spur roads, and structure locations on a regular periodic basis). However, temporary visibility of construction activities and equipment would remain a significant and unavoidable adverse visual impact (Class I).

Under Alternative 4 effects associated with Impact V-2 (For a landscape that currently has no transmission lines, introduction of a new transmission line in a new ROW would adversely affect landscape character and visual quality) would be the same as for the proposed Project (please see Section 6.1). As described in Section 6.1, Impact V-2 would occur for all of Segment 10, a portion of Segment 4 (S4 MP 15.8 to 17.9) and a portion of Segment 8A in Rose Hills Memorial Park. Additionally, under Alternative 4 Original Route C, C Modified, and D, a portion of Segment 8A would be constructed in a new ROW north of CHSP where there is no existing transmission line. Any of the five routes of Alternative 4 would include the construction of a new switching station in or near CHSP and an all-weather (e.g., paved) road to the alternative switching station sites, plus new access/spur roads to new LSTs in or near CHSP. Therefore, the existing natural-appearing landscape character would be modified to an industrial character by the presence of Alternative 4 (Chino Hills Route Alternatives).

Impact V-2 for Alternative 4 would require implementation of the following mitigation measures, which are fully described in Section 6.1: V-2a (Use tubular steel poles instead of lattice steel towers in designated areas); V-2b (Treat surfaces with appropriate colors, textures, and finishes); V-2c (Establish permanent screen [at the switching station]). In addition, impacts would be further reduced with implementation of the following mitigation measures: V-1 (Clean up staging areas, storage areas, marshalling yards, helicopter staging areas, access and spur roads, and structure locations on a regularly periodic basis) and V-2d (At road crossings, structures should be offset so that they are equidistant on each side of the road where feasible).

However, the presence of new transmission line structures, conductors, access and spur roads, all-weather road to the new switching station, and new rights-of-way in landscapes that currently have no transmission line facilities would remain a significant and unavoidable adverse visual impact (Class I).

Under Alternative 4 the effects of Impact V-3 (For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects) would be the same as for the proposed Project (please see Section 6.1). As described in Section 6.1, Impact V-3 would occur throughout the entire

Study Area because of increased structure heights and widths, as compared to existing structures and facilities, except that Impact V-3 would not occur in Segment 8A between MP 19.2 and MP 35.2, a distance of 16 miles.

The effects of Impact V-3 for Alternative 4 would require implementation of the following mitigation measures, which are fully described in Section 6.1: V-2b (Treat surfaces with appropriate colors, textures, and finishes.); V-3a (Match spans of existing transmission structures); and V-3b (On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality). In addition, the effects of Impact V-3 of Alternative 4 would be somewhat reduced with implementation of Mitigation Measures V-1, V-2a, V-2d, V-4b, and V-4d. However, the presence of newer, taller, wider transmission line structures, new conductors, newly constructed or re-opened access and spur roads, enlarged substations, two new switching stations along Segment 8A, an all-weather (e.g., paved) road to the new switching station plus new access/spur roads to new LSTs in or near CHSP, and new transmission line structures in CHSP would remain a significant adverse visual impact (Class I).

Under Alternative 4, the effects of Impact V-4 (Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality) would be the same as for the proposed Project (please see Section 6.1), plus there would be additional adverse effects of an all-weather (e.g., paved) road to the new switching station plus new access/spur roads to new LSTs in or near CHSP. As described in Section 6.1, Impact V-4 would occur throughout the entire Study Area, including new areas along Alternative 4 Segment 8A, and excluding areas of Segment 8A between MP 19.2 and 35.2. Impact V-4 for Alternative 4 would require implementation of the following mitigation measures, which are fully described in Section 6.1: V-4a (Construct, operate, and maintain the Project with existing access and spur roads where feasible); V-4b (Slope-round and re-contour in areas as prescribed); V-4c (Avoid locating new roads in bedrock on NFS lands); and V-4d (Dispose of excavated materials as prescribed). However, the visual impacts associated with Alternative 4 would remain significant and adverse (Class I).

Locations where the Senior Visual Analyst recommends to the CPUC implementation of these various mitigation measures can be found in Tables 6-5 through 6-9. Table 8-1, below, makes additional recommendations to the CPUC for locations where tubular steel poles would improve the visual, recreational, and social environments for Alternative 4. No further visual impacts would be introduced by Alternative 4 under Criterion VIS1.

TRTP Segment and Structure Size	Location by Milepost	Reasons for TSPs in These Specific Locations
Segment 8A – 500-kV DC	MP 19.2 to the Eastern-Most Switching Station (under any route of Alternative 4)	Light dulled galvanizing treatment on TSPs. TSPs are preferred structures in residential areas, in parklands, and on skyline ridges. If TSPs cannot carry as much weight and there has to be more TSPs with shorter spans, it is still an improvement to the visual environment. H-frames, multiple monopoles, or guyed monopoles are recommended at turning points.

Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (Criterion VIS2)

Impacts associated with Criterion VIS2 for Alternative 4 would be the same as for the proposed Project. Although this alternative would introduce a re-route along Segment 8A, the re-route would not alter the location or sources of light at the existing substations. Alternative 4 would introduce new light sources at the

Switching Station at the eastern end of Segment 8A, and the exact location of this light source would change, depending on which route (A, B, C, C Modified, or D) was selected or discussed.

Under Alternative 4, the effects associated with Impact V-5 (New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glint and glare in certain lighting conditions) would be exactly the same for the proposed Project (Alternative 2), as described in Section 6.1, except between S8A MP 19.2 and MP 35.2 of the proposed Project. Additionally, Alternative 4 would introduce new metal surfaces into landscapes of Segment 8A from its point of connection at MP 19.2 to each of five proposed switching station locations as described above. Alternative 4 would require implementation of the following mitigation measure, which is fully described in Section 6.1: V-2b (Treat surfaces with appropriate colors, textures, and finishes). Implementation of this measure would reduce adverse visual effects to a level of less than significant (Class II).

Substantially damage scenic resources within a scenic highway viewshed or a national scenic trail viewshed (including, but not limited to, trees, rock outcroppings, and historic buildings) (Criterion VIS3)

Under Alternative 4, the impacts associated with Criterion VIS3 would be the same as for the proposed Project, and in addition, Alternative 4 would introduce a new crossing of an eligible scenic highway at Carbon Canyon Road, State Highway 142. No new designated scenic trail viewsheds would be impacted by Alternative 4.

Under Alternative 4, the effects associated with Impact V-6 (The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or a scenic trail viewshed) would be exactly the same as the proposed Project, and in addition, the viewshed of Carbon Canyon Road would be adversely affected. Alternative 4 would traverse the PCT in the following three locations: Segment 4 MP 2.7 (North Area), Segment 11 MP 7.6 (Center Area), and Segment 6 MP 7.3 (Center Area). Alternative 4 would cross over the Angeles Crest Scenic Byway (State Highway 2) in four different locations (at approximately S11 MP 16.0, 17.7, and 18.4 for Segment 11 and at S6 MP 16.8 for Segment 6). Alternative 4 would cross over the Silver Moccasin Trailhead at Shortcut Saddle at S6 MP 16.7. Portions of Segment 6 Alternative 4 would be visible from West Fork San Gabriel River National Scenic Bikeway. The State has designated portions of the Orange Freeway (State Highway 57) and Carbon Canyon Road (State Highway 142) as “Eligible” to become a State Scenic Highway where they traverse largely undeveloped hills between Brea and Diamond Bar and Brea and Chino Hills, respectively, and Alternative 4 would cross State Highways 57 and 142 in these vicinities. 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 and Alternative 4 would be visible from these highways. 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 Interstate 210 (I-210) and State Highways 39 and 57 are either designated as, or eligible for, State Scenic Highway status and portions of Alternative 4 would also be visible from these roadways.

Impact V-6 for Alternative 4 would require implementation of Mitigation Measure V-3b (On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality), which is fully described in Section 6.1. With implementation of this measure the effects of Impact V-6 would be reduced to a level of less than significant (Class II).

Conflict with applicable adopted city, county, State, or federal plans, policies, regulations, or standards applicable to the protection and management of visual quality in the landscape (Criterion VIS4)

Impacts associated with Criterion VIS4 for Alternative 4 would be identical to the proposed Project, and in addition, Alternative 4 would not be in compliance with the CHSP Management Plan. Please see Appendix C for a list of applicable federal, State and local laws, regulations and standards.

In the North Area, there are no established Visual Resource Management Plans or Visual Resource Conservation Plans. In the Center Area, as described in Section 2.3, the majority of Segments 6 and 11 are situated within areas of natural-appearing landscapes designated with High Scenic Integrity Objective (SIO) as dictated by the Forest Plan (see Table 2-4). Existing access and spur roads currently do not meet the Natural-Appearing Desired Condition or High SIO, and re-opening or reconstructing them to higher road maintenance standards would adversely impact visual resources and further degrade existing conditions; additionally the Forest Plan's Desired Condition and High Scenic Integrity Objective would not be met. Construction and operation of new, taller, wider single-circuit 500-kV transmission lines would also adversely impact visual resources and further degrade existing conditions, and would not meet the Desired Condition or the High Scenic Integrity Objective. Consequently Project-specific amendments to the 2005 Forest Plan for Standards S9 and S10 would be required for Alternative 4. Implementation of Mitigation Measure V-3b (On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality) is also recommended to minimize impacts. In the South Area, Alternative 4 would cross lands administered by the Puente Hills Landfill Habitat Preservation Authority (PHLHPA). Alternative 4 would conflict with Goal Visual-1 and Objective Visual-1.2 of the Puente Hills Landfill Native Habitat Preservation Authority Resource Management Plan (see Appendix C). Alternative 4 would conflict with the General Plan of Chino Hills State Park, including Parkwide Management Goals and Guidelines for Aesthetic Resources.

Alternative 4 would be inconsistent with Standard S9 and S10 of the Forest Plan, and would require amendments. Alternative 4 would also conflict with Goal Visual-1 and Objective Visual-1.2 of the Puente Hills Landfill Native Habitat Preservation Authority Resource Management Plan, and with the General Plan of Chino Hills State Park, including Parkwide Management Goals and Guidelines for Aesthetic Resources. As such, Impact V-7 would be significant and unavoidable (Class I).

8.2 Cumulative Effects Analysis

This section addresses potential cumulative visual and scenic effects that would occur as a result of implementation of Alternative 4 (Chino Hills Route Alternatives). This alternative consists of five different routes which would diverge from the proposed Project route in the eastern portion of the South Area. The route for Alternative 4 would be exactly the same as that of the proposed Project for all segments except Segment 8A, where the Alternative 4 routes (Routes A through D and C Modified) would diverge from the proposed Project alignment at S8A MP 19.2. Alternative 4 consists of a re-route of the proposed Project east of Segment 8A MP 19.2 (either Route A, B, C, C Modified, or D), and a new Switching Station either in, or near, the CHSP. The remainder of Alternative 4 would be identical to that of the proposed Project and would, therefore, result in identical visual impacts. Furthermore, Alternative 4 would require the same types of construction activities to build, and would result in the same operational capacity as the proposed Project. Based on the substantial similarity of Alternative 4 to the proposed Project, this alternative's contribution to cumulative visual impacts also would be identical to that of the proposed Project, except in Landscape Units 16 and 17, as described above in Section 8.1. Based on the substantial similarity of Alternative 4 to the proposed

Project, this alternative's contribution to cumulative impacts would be identical to that of the proposed Project in the North and Center Areas, and in the South Area up to S8A MP 19.2. However, when compared to the proposed Project, each Route's contribution to certain cumulative impacts may be incrementally increased or decreased as a result of the rerouted portion of this alternative. With regards to Alternative 4, any incremental increases or decreases in the Project's contribution to the cumulative scenario would result from the location of the alternative alignments associated with Routes A, B, C, C Modified and D.

8.2.1 Geographic Extent

The geographic extent of the cumulative effects analysis for Alternative 4 is the same as the extent of the proposed Project (Alternative 2) as presented in Section 2.5, except for the following: Alternative 4 differs from the proposed Project only in the South Area from Segment 8A Milepost 19.2 to MP 25.2, a distance of 16 miles. Therefore, the geographic extent of the cumulative analysis for Alternative 4 is exactly the same as that for Alternative 2 in the North Area, Center Area, and western portions of the South Area. Additionally, Alternative 4 affects different lands east and south of the proposed Project, east of S8A MP 19.2, as described above.

8.2.2 Existing Cumulative Conditions

The existing cumulative conditions for Alternative 4 are exactly the same as for Alternative 2, as described in Section 6.2.2, and in addition, several projects listed in the EIR/EIS (Table 2.9-4, Summary of Cumulative Projects by Jurisdiction), from S8A MP 19.2 to MP 25.2 would not be cumulatively compounded by the Project, as this portion of the proposed Project would not be constructed or operated under Alternative 4.

8.2.3 Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects and changes to the cumulative scenario for Alternative 4 would be exactly the same as Alternative 2, described in Section 6.2.3, except for the portions of Segment 8A east of S8A MP 19.2, where no visual impacts would occur because of the Project. The additional residential developments planned and reasonably foreseeable in the vicinity of Alternative 4 Routes B and D would be a reasonably foreseeable future visual condition. No cumulative projects along Segment 8A between MP 19.2 and 35.2 would need to be considered under Alternative 4.

8.2.4 Cumulative Impact Analysis

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 elimination of Segment 8A from MP 19.2 to 35.2 would reduce cumulative visual impacts in those areas. However, new cumulative visual impacts would occur along the five routes (A through D and C Modified) of Alternative 4 in lands of CHSP and in undeveloped lands surrounding the Park. Therefore, cumulative impacts of Alternative 4 would be exactly the same as cumulative impacts for Alternative 2, as described in detail in Section 6.2.4 for the North Area (southern Kern County and northern Los Angeles County), Center Area (ANF and private in-holdings), and the western portion of the South Area (beginning at the southern border of the ANF and including lands within southern Los Angeles, Orange, and western San Bernardino Counties), as well as Segment 8B (6.8 miles), between Chino and Mira Loma Substations. Future planned residential developments in the vicinity of Alternative 4 would combine with Routes B and D to contribute to adverse cumulative visual impacts.

It has been determined that visual resource impacts associated with Alternative 4, as identified in Section 8.1, would be cumulatively considerable and therefore would contribute to cumulative impacts. These impacts include Impacts V-1 through V-7. The potential for cumulatively considerable visual resource impacts of Alternative 4 to combine with similar impacts of other projects within the geographic scope of the cumulative analysis are described below, only as they differ from the proposed Project (Alternative 2).

- **Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of landscape views (Impact V-1).** Construction activities associated with Alternative 4 would be visible and would attract attention temporarily, as described in 6.1 above. As stated above, ongoing development throughout the cumulative effects area for visual resources is dominated by residential developments, including those along Butterfield Ranch Road and clean-up activities at the Aero Jet Property. All of these construction activities would be readily visible throughout the Project area, and would be cumulatively adverse and significant (Class I).
- **For a landscape that currently has no transmission lines, introduction of a new transmission line in a new ROW would adversely affect landscape character and visual quality (Impact V-2).** Construction and operation of new transmission lines, and a new switching station at one of five route locations, in areas that currently do not have such industrial facilities would adversely affect natural-appearing landscape character and visual quality would be cumulatively adverse and significant. Future residential developments along Butterfield Ranch Road in Chino Hills could encroach on undeveloped, natural-appearing landscapes in the Alternative 4 Project area, further reducing natural-appearing landscape character and visual quality, which would also create cumulatively adverse and significant visual impacts (Class I).
- **For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects (Impact V-3).** Construction and operation of new transmission lines with increased structure size and new materials would detract from existing landscape character and visual quality, as described in Section 6.1 above, and combined with existing transmission lines in the same vicinity northwest of CHSP, inside CHSP, and east of CHSP would lead to cumulatively adverse and significant visual impacts (Class I).
- **Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality (Impact V-4).** Construction, operation, and maintenance of the Alternative 4 transmission lines and maintenance of existing transmission lines in the affected corridors would create permanent visual scars that would be visible and would attract attention, as described in Section 6.1 above. Additionally, vegetative clearing and earthwork necessary for construction of the new Switching Station at locations designated Route A, B, C, C Modified or D, and construction of an all-weather (e.g., paved) road to the new switching station plus new access/spur roads to new LSTs in or near CHSP would create permanent adverse visual impacts that would be visible and would attract attention. Combined with existing transmission lines and substations in the same viewsheds, but in the same or different ROWs, would lead to cumulatively adverse and significant visual impacts (Class I).
- **New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glare in certain lighting conditions (Impact V-5).** New materials used in construction of this and future projects within the Project area viewshed have created and have the potential to produce, respectively, daytime glint and glare and new sources of nighttime light and glare. New light sources at the Switching Station would be shielded as described in APM AES 18 through 22. Combined with Alternative 4, these existing and future projects would lead to cumulatively adverse and significant visual impacts (Class I).
- **The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or scenic trail viewshed (Impact V-6).** An additional scenic highway is impacted by Alternative 4: the Carbon Canyon Road, State Highway 142. As urban and suburban build-out continues in the North and South Areas, it is reasonably foreseeable that remaining open space areas would either be occupied by development-related infrastructure, including new residential developments, electric infrastructures, or commercial and industrial developments. This pressure may result in increased demands for specific protections of open space qualities by conservation groups and resource agencies such as the USDA Forest Service, State Scenic Highways, the Puente Hills Landfill Native Habitat Authority, CHSP, or other agencies. No projects in the ANF threaten the viewsheds of the Angeles Crest Scenic Byway, except for Alternative 4. Impact V-6 would be cumulatively adverse and significant (Class I).

- **The Project would conflict with established visual resource management plans or landscape conservation plans (Impact V-7).** Appendix C provides lists of applicable federal, State, and local laws, regulations, and standards for visual resources in the North, Center, and South Areas. These adverse visual impacts would be the same as described in Section 6.2. Impact V-7 would be cumulatively adverse and significant (Class I).

8.2.5 Mitigation to Reduce the Project's Contribution to Significant Cumulative Effects

Mitigation measures introduced for Alternative 2 in Section 6.1 (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 for visual resources. Cumulative impacts would be significant and unavoidable (Class I).