

6. Alternative 2 (SCE’s Proposed Project): Impacts and Mitigation Measures

The following section describes visual resource impacts of SCE’s proposed Project 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, if possible, or if not possible, then to reduce somewhat the overall adverse visual impacts to the scenic beauty of the landscape.

6.1 Direct and Indirect Effects Analysis

Direct and indirect effects associated with Alternative 2 (the proposed Project) are discussed below and summarized in Table S-1 (Summary of Impacts and Mitigation Measures – Visual Resources). The significance criteria used to identify impacts to visual resources are introduced in Section 4.1 (Criteria for Determining Impact Significance) and summarized below in Table 6-1, and as well, impacts that are specific to each criterion have been identified under each of the following headings: Landscape Character and Scenic Quality; Light or Glare; Scenic Highway Resources; Visual Quality Management Plans.

The significance criteria used to identify impacts to visual resources are introduced in Section 4.1 (Criteria for Determining Impact Significance) and summarized below in Table 6-1, as well as the impacts that have been identified under each criterion.

Significance Criteria	Impact Statements
Criterion VIS1: Have a substantial adverse effect on the existing landscape character and visual quality of the site and its surroundings.	V-1: Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of landscape views.
	V-2: For a landscape that currently has no transmission lines, introduction of a new transmission line would adversely affect landscape character and visual quality by creating visual contrasts that stand out and do not repeat natural-appearing form, line, color, texture, pattern, or scale.
	V-3: For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects, including: increased structure prominence; additional structure skylining; ridgeline obstruction/intrusion; view blockage to desirable landscape features; visible increase in industrial landscape character by geometric forms or unnatural straight lines; and, increased visual complexity and visual clutter.
	V-4: Vegetative clearing and/or earthwork associated with road improvements and/or pulling/splicing locations would adversely affect landscape character and visual quality by creating visual contrasts that do not repeat natural-appearing form, line, color, texture, pattern, or scale.
Criterion VIS2: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	V-5: New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glint and glare in certain lighting conditions.
Criterion VIS3: 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).	V-6: The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or scenic trail viewshed.
Criterion VIS4: 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.	V-7: The Project would conflict with established visual resource management plans or landscape conservation plans.

Consistent with the affected environment descriptions provided for the proposed Project and its alternatives (Section 2), direct and indirect effects of the proposed Project are described in terms of the Visual Resources Study Area, including the North, Center, and South Areas.

North Area

Table 6-2 displays the proposed Project facilities that would occur in the North Area under Alternative 2 and the potentially applicable adverse visual impacts.

Table 6-2. Alternative 2 Components in the North Area (Landscape Units 1 through 4)	
Project Component	Applicable Impacts
Segment 10: New Windhub – Whirlwind 500-kV T/L	
Initiates at the Windhub Substation and ends at the new Whirlwind Substation	V-1, V-2, V-5
Construct new approximately 17-mile single-circuit Windhub – Whirlwind 500-kV T/L	V-1, V-2, V-5
All construction within new 330-foot-wide ROW (~17 miles)	V-1, V-2, V-5
Erect approximately 96 new single-circuit 500-kV lattice steel towers (LSTs) (90-200 feet tall)	V-1, V-2, V-5
Would require approximately 16 new wire setup sites for pulling/tensioner/splicing of conductor wire	V-1, V-4
Segment 4: Whirlwind 500/220-kV T/L Elements	
Initiates at the Cottonwind Substation and ends at the existing Antelope Substation	V-1, V-3, V-4, V-5
Construct two new parallel 4-mile single-circuit 220-kV T/Ls (Cottonwind – Whirlwind 220-kV No. 1 & No. 2)	V-1, V-3, V-4, V-5
Construct new approximately 16-mile single-circuit Vincent – Whirlwind 500-kV T/L	V-1, V-3, V-4, V-5
All construction within new 200-foot-wide ROW (20 miles total)	V-1, V-3, V-4, V-5
Erect approximately 165 new transmission structures, including: 88 single-circuit 220-kV LSTs (73-138 feet tall) 77 single-circuit 500-kV LSTs (113-188 feet tall)	V-1, V-3, V-4, V-5
Would require approximately 28 new wire setup sites for pulling/tensioner/splicing of conductor wire	V-1, V-4
Segment 9: Substation Facilities	
Construct new Whirlwind Substation; activity would require acquisition of new 106-acre substation property	V-1, V-2, V-3, V-4, V-5
Expand and upgrade existing Antelope Substation to accommodate new 500-kV and 220-kV equipment; activity would require acquisition of additional substation property – approximately 20 acres for Antelope upgrade	V-1, V-3, V-5
Segment 5: Antelope – Vincent No. 2 500-kV T/L	
Initiates at the existing Antelope Substation and ends at the existing Vincent Substation	V-1, V-3, V-4, V-5
Remove the existing Antelope – Vincent 220-kV T/L and the existing Antelope – Mesa 220-kV T/L	V-1, V-4
Construct new approximately 17.4-mile single-circuit Antelope – Vincent No. 2 500-kV T/L	V-1, V-3, V-4, V-5
All construction in existing ROW (17.4 miles)	V-1, V-3, V-4, V-5
Erect approximately 67 new single-circuit 500-kV LSTs (90-193 feet tall)	V-1, V-3, V-4, V-5
Would require approximately 37 wire setup sites for pulling/tensioner/splicing of conductor wire	V-1, V-4

All of the proposed Project features and activities outlined above would be visually evident from numerous vantage points throughout the North Area. KOPs were established and computerized visual simulations were developed to assess visual impacts to landscape character and visual quality in the North Area. Please refer to existing condition photographs and computerized visual simulations for KOP-North-1 through KOP-North-13, in Appendix A. Below is the detailed description of visual resource effects that would occur in the North Area under the proposed Project, Alternative 2.

For Segment 10, new 500-kV lattice steel towers and conductors would be located in a new 330-foot wide ROW extending from the (future) Windhub Substation to the proposed Whirlwind Substation, a distance of 16.8 miles. New lattice steel structures would range from 94-to-188-feet tall and approximately 96 feet wide at the arms, and would be very visually evident in Segment 10 where there are no existing transmission lines (see Appendix A, KOP-North-1 and KOP-North-2). This would create a new industrial landscape character where the existing landscape character is natural-appearing.

For Segments 4 and 5, new 220-kV and 500-kV lattice steel towers and conductors would be less visually evident along those portions of their respective ROWs where they would be placed alongside existing transmission lines. The new Windhub Substation would be constructed in an agricultural field on the west side of 170th Street West, on the flat desert plain described in Section 2.3. Northwest of the Windhub Substation, Segment 4 would have two new parallel 220-kV transmission lines that would be constructed and operated in a new 200-foot wide ROW adjacent to several existing 220-kV and 500-kV transmission lines for 4.0 miles (see Appendix A, KOP-North-3). Southeast of Windhub Substation, Segment 4 would be located in a new ROW at an existing utility line corridor. In this vicinity, the proposed Project would add one additional transmission line consisting of lattice steel towers carrying 500 kV conductors within a new 200-foot-wide ROW that would be located to the southwest side of existing transmission line rights-of-way in an existing utility corridor for 10.85 miles. This portion of Segment 4 would be most visible from the California Poppy Reserve, as described in Section 2.3 (see Appendix A, KOP-North-4).

Segment 4 would leave the existing utility corridor at approximately S4 MP 15.8 and proceed south immediately adjacent to 110th Street West, thereby being in the immediate foreground of this Priority 2 County Scenic Highway, before turning east at approximately S4 MP 17.9, and then entering the Antelope Substation. In addition to the 2.1 miles of adjacency, Segment 4 would be within the foreground distance zone of 110th Street West from MP 14.9 to MP 18.4, a total of 3.5 miles. The proposed Project would add 28 acres of expanded substation immediately to the southeast of the existing Antelope Substation, thereby increasing the area of industrial landscape character in this rural landscape (see Appendix A, KOP-North-5 and KOP-North-6).

Segment 5 of the proposed Project would remove the existing Antelope-Vincent 220 kV transmission line and the existing Antelope-Mesa 220 kV transmission line and construct 17.8 miles of a new transmission line consisting of single-circuit lattice steel towers carrying 500-kV conductors. These proposed Project activities would occur within an existing 200-foot-wide ROW, and would be visually evident in foreground and middleground views from residences in West Palmdale and West Lancaster. New transmission structures would be visually absorbed into the existing transmission corridor, because structure spacing would match existing 500-kV structures alongside, to the extent possible (see Appendix A, KOP-North-6). The new towers would be approximately the same height as the existing 500-kV towers, but because some new structures would be closer to the viewer, they would appear to be slightly taller and slightly more highlighted against the sky than the existing towers from some vantage points. Segment 5 would cross directly over several major roadways between Antelope Substation and the San Andreas Rift Zone as the transmission line corridor crosses over the Portal Ridge. These sensitive receptor locations include Avenues K, L, and M, 90th and 80th Streets West, Godde Hill Road, and ending at Elizabeth Lake Road, a Priority 2 County Scenic Highway, (see Appendix A, KOP-North-7 through KOP-North-10). South of the San Andreas Rift Zone, Segment 5 would cross directly over several major roadways as the transmission line corridor crosses over the Sierra Pelona Mountain Range, including Avenue S, Peaceful Valley Road, Forest View Road, the Antelope Freeway (State Highway 14), and the Sierra Highway. Before entering the Vincent Substation, Segment 5 would pass by the parking lot for the Metrolink Commuter Station (see Appendix A, KOP-North-11 through KOP-North-13).

At the Vincent Substation, Segment 9 of the proposed Project would increase the substation footprint by 0.2-acre immediately adjacent to the southeast side of the existing site. A new perimeter retaining wall and a stepped-terrace configuration would accommodate new substation equipment.

Center Area

Table 6-3 displays the proposed Project facilities that would occur in the Center Area and the potentially adverse visual impacts that could occur due to its implementation.

Table 6-3. Alternative 2 Components in the Center Area (Landscape Units 5 through 8)	
Project Component	Applicable Impacts
Segment 11: New Vincent – Mesa (via Gould) 500/220-kV T/L	
Initiates at the existing Vincent Substation and ends at the existing Mesa Substation	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Remove approximately 4 miles of the existing Pardee – Vincent No. 1 220-kV T/L	V-1, V-4
Remove approximately 15 miles of the existing Eagle Rock – Pardee 220-kV T/L	V-1, V-4
Construct new approximately 19-mile 500-kV single-circuit T/L between Vincent and Gould Substations (initially energized at 220 kV)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Most of the proposed infrastructure would be located within existing ROW, however, the ROW may need to be expanded by up to approximately 250 feet to the west along the approximately 16 miles north of Gould Substation to maintain safe clearances from the edge of the ROW due to wire swing of the new 500-kV T/L under wind loading conditions	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Erect approximately 76 new transmission structures, including: 2 single-circuit 220-kV poles (120 feet tall) 7 single-circuit 220-kV LSTs (120-160 feet tall) 67 single-circuit 500-kV LSTs (100-220 feet tall) , of which 17 are configured as delta towers (10 on NFS lands)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Would require approximately 36 wire setup sites for pulling/tensioner/splicing of conductor wire (11 on NFS lands)	V-1, V-4
The majority of this segment would be located on NFS lands including: S11 MP 1.5-3.5, 3.75-18.5, 19.25-20.3, 20.8-21.3, 21.8-22.6, 23.05-24.15, and 24.35-24.55 (in-holdings or other non-NFS lands are located between the mileposts listed)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Segment 6: Section of New Replacement Vincent – Rio Hondo No. 2 500-kV T/L (initially energized at 220 kV) and Section of New Vincent – Mira Loma 500-kV T/L	
Initiates at the existing Vincent Substation and ends at the southern boundary of the ANF	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Remove approximately 5 miles of the existing Rio Hondo – Vincent No. 2 220-kV T/L between Vincent Substation and the “crossover” span (S6 MP 5.0)	V-1, V-4
Construct new approximately 5-mile single-circuit Mira Loma – Vincent 500-kV T/L from the Vincent Substation to the “crossover” span (S6 MP 5.0)	V-1, V-3, V-4, V-5
Remove approximately 27 miles of the existing Antelope – Mesa 220 kV T/L from Vincent Substation to the southern boundary of the ANF	V-1, V-4
Construct new approximately 27-mile single-circuit Rio Hondo – Vincent No. 2 500-kV T/L (initially energized at 220 kV)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Eliminate the existing crossing of the Rio Hondo – Vincent No. 2 220-kV T/L over the Antelope – Mesa 220-kV T/L	V-1
All proposed permanent infrastructure to be located within existing ROW (~27 miles)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Erect approximately 138 new transmission structures, including: 2 single-circuit 220-kV LSTs (90-120 feet tall) 26 single-circuit 500-kV tubular steel poles (TSPs) (75-200 feet tall) 106 single-circuit 500-kV LSTs (85-193 feet tall) 4 three-pole dead-end 500-kV structures (75-80 feet tall) [all off NFS lands]	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Would require approximately 19 wire setup sites for pulling/tensioner/splicing of conductor wire (16 on NFS lands – In addition, 5 alternate sites have been identified on NFS lands)	V-1, V-4
The majority of this segment would be located on NFS lands including: S6 MP 1.45-1.7, 2.75-5.3, 5.65-6.7, 6.7-6.95, 7.05-24.8 (in-holdings or other non-NFS lands are located between the mileposts listed)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Segment 9: Substation Facilities	
Upgrade existing Gould Substation to accommodate new 220-kV equipment	V-1, V-3, V-5

All of these features and activities would be visually evident from numerous vantage points throughout the Center Area. KOPs were established and computerized visual simulations were developed to assess visual impacts to landscape character and visual quality in the Center Area. Please refer to existing condition photographs and computerized visual simulations for KOP-Center-1 through KOP-Center-15, in Appendix A.

South Area

Table 6-4 displays the proposed Project facilities would occur in the South Area and the potentially applicable adverse visual impacts which could occur due to its implementation.

Table 6-4. Alternative 2 Components in the South Area (Landscape Units 9 through 19)	
Project Component	Applicable Impacts
Segment 11: New Vincent – Mesa (via Gould) 500/220-kV T/L (Partially in Center Area/ Partially in South Area)	
Initiates at the existing Gould Substation and ends at the existing Mesa Substation	V-1, V-5
Remove approximately 4 miles of the existing Pardee – Vincent No. 1 220-kV T/L	V-1
Remove approximately 15 miles of the existing Eagle Rock – Pardee 220-kV T/L	V-1
String approximately 18 miles of new 220-kV conductor on the vacant side of the existing double-circuit structures of the Eagle Rock-Mesa 220-kV T/L	V-1, V-5
Segment 7: Section of New Replacement Vincent – Rio Hondo No. 2 500-kV T/L (initially energized at 220 kV) and Section of New Vincent – Mira Loma 500-kV T/L	
Initiates at the southern boundary of the ANF and ends at the existing Mesa Substation	V-1, V-3, V-5
Remove approximately 16 miles of the existing Antelope – Mesa 220-kV T/L between the southern boundary of the ANF and the Mesa Substation	V-1
Construct new approximately 16-mile 500-kV double-circuit T/L to include the Rio Hondo – Vincent No. 2 500-kV T/L (initially energized at 220 kV) and the new Mira Loma – Vincent 500-kV T/L	V-1, V-3, V-5
Connect the new Rio Hondo – Vincent No. 2 500-kV T/L (initially energized at 220 kV) into the Rio Hondo Substation	V-1, V-3, V-5
Relocate several existing 66-kV subtransmission lines between the existing Rio Hondo Substation and the existing Mesa Substation	V-1, V-2, V-3, V-5
All proposed permanent infrastructure to be located within existing ROW (~16 miles)	V-1, V-3, V-5
Erect approximately 85 new transmission structures, including: 1 double-circuit 220-kV LST (185 feet tall) 2 double-circuit 500-kV TSPs (195-200 feet tall) 3 single-circuit 500-kV LSTs (113-175 feet tall) 79 double-circuit 500-kV LSTs (147-262 feet tall)	V-1, V-3, V-5
Erect approximately 150 new double-circuit 66-kV subtransmission Light Weight Steel Poles (LWSPs) and TSPs	V-1, V-2, V-3, V-5
Would require approximately 16 wire setup sites for pulling/tensioner/splicing of conductor wire	V-1
Segment 8: Section of New Vincent – Mira Loma 500-kV T/L	
Initiates near the existing Mesa Substation and ends at the existing Mira Loma Substation	V-1, V-3, V-4, V-5
Remove various 220-kV T/L structures between the existing Mesa Substation and the existing Mira Loma Substation	V-1, V-4
Construct approximately 33 miles of new single- and double-circuit 500-kV T/L to include approximately 33 miles of the new Mira Loma – Vincent 500-kV T/L	V-1, V-3, V-4, V-5
Construct approximately 7 miles of new double-circuit 220-kV T/L from the Chino Substation to the Mira Loma Substation	V-1, V-3, V-5
Relocate several existing 66-kV subtransmission lines in the area of the Mesa and Chino Substations	V-1, V-5
Most of the proposed infrastructure would be located in existing ROW, except for the following: Rose Hills Memorial Park ROW relocation (existing: 1.1-mile, 150-foot-wide; future: 1.4-mile, 240-foot-wide) Hacienda Heights ROW expansion (existing: 2.15-mile, 150 to 230-foot-wide; future: 250 to 330-foot-wide) Fullerton Road new ROW (existing: none; future: 0.4-mile, 100-foot-wide) Ontario (near Mira Loma Substation) ROW expansion (existing: 0.45-mile, 100-foot-wide; future: 250-foot-wide)	V-1, V-2, V-3, V-4, V-5, V-6, V-7

Project Component	Applicable Impacts
Erect approximately 226 new transmission structures, including: 2 single-circuit 220-kV LSTs (65-75 feet tall) 57 double-circuit 220-kV LSTs (113-180 feet tall) 3 single-circuit 500-kV LSTs (128-149 feet tall) 92 double-circuit 500-kV LSTs (147-255 feet tall) 2 single-circuit 220-kV TSPs (85-95 feet tall) 11 double-circuit 220-kV TSPs (75-115 feet tall) 5 three-pole dead-end 220-kV structures (75-110 feet tall) 4 single-circuit 500-kV TSPs (120-170 feet tall) 50 double-circuit 500-kV TSPs (150-195 feet tall)	V-1, V-2, V-3, V-4, V-5, V-6, V-7
Erect new double-circuit 66-kV subtransmission LWSPs and 6 TSP riser poles	V-1, V-5
Would require approximately 33 new wire setup sites for pulling/tensioner/splicing of conductor wire	V-1, V-4
Segment 9: Substation Facilities	
Upgrade existing Gould Substation to accommodate new 220-kV equipment	V-1, V-3, V-5
Upgrade existing Mesa Substation to accommodate new 220-kV equipment	V-1, V-3, V-5
Upgrade existing Mira Loma Substation to accommodate new 500-kV equipment	V-1, V-3, V-5

All of these features and activities would be visually evident from numerous vantage points throughout the South Area. KOPs were established and computerized visual simulations were developed to assess visual impacts to landscape character and visual quality in the South Area. Please refer to existing condition photographs and computerized visual simulations for KOP-South-1 through KOP-South-20, in Appendix A.

Potential impacts of the proposed Project are described below, according to the significance criteria presented in Section 4.1 (Criteria for Determining Impact Significance) and summarized above in Tables 6-2 through 6-4.

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

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.

There are no Applicant-Proposed Measures for Aesthetics (APM-AES) that address the temporary visibility of construction equipment or personnel at staging areas, storage areas, marshalling yards, helicopter staging areas, access and spur roads, and/or structure locations. The following discussion addresses temporary visibility of construction activities and equipment, and is subdivided into North, Center, and South Areas.

North Area

Potential visual impacts resulting from the proposed Project’s construction in the North Area would primarily be experienced from county roads and nearby residences.

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 of existing Antelope and Vincent Substations, and use of construction staging areas would result in the visual intrusion of construction vehicles, helicopters, equipment, storage materials, and workers. However, Project construction is a relatively short-duration visual impact, as compared to the permanent structures that would be introduced into the landscape by the proposed Project.

Center Area

Potential visual impacts resulting from the proposed Project construction activities in the Center Area would primarily affect the visual experience from county roads, State highways (including multiple crossings over the Angeles Crest Scenic Byway (SR 2), Forest Service roads, OHV trails, hiking trails (including multiple crossings of the Pacific Crest National Scenic Trail and Silver Moccasin National Recreation Trail), and many nearby recreation sites (including Mill Creek Summit Picnic Area, PCT trailheads, Silver Moccasin Trailhead, Vetter Mountain Lookout, Cobb Estate, Mount Wilson, Mount Lowe, Mount Disappointment, Strawberry Peak, Rincon-Red Box OHV Trail, Upper Winter Creek Trail, Mount Zion, Cogswell Reservoir, and West Fork National Scenic Bikeway). For a complete list of recreational sites affected in the Center Area, please see Section 3.15 (Wilderness and Recreation) of the EIR/EIS.

Construction impacts on visual resources would result from the presence of equipment, materials, and work force along Segments 6 and 11, and would be as described above in the North Area. The only residences in the Center Area are located on small, scattered tracts of non-NFS lands within the ANF boundary, and the number of these residences is low, such as along Aliso Canyon Road. Therefore, except for residents in these scattered tracts, the duration of view of construction activities would be brief for recreationists in the ANF, estimated by SCE to be perhaps a maximum of two weeks' duration. However, based on experience from the ongoing construction of the Antelope-Pardee Transmission Line Project, because of fire regulations and weather conditions, there have been constant work stoppages. Therefore, some construction durations may be longer.

Conventional construction techniques would generally be used for new footing installation. In certain cases, equipment and material would be deposited at structure sites using helicopters or by workers on foot, such as at the 33 towers identified for helicopter construction under SCE's proposed Project, and crews may prepare the footings using hand labor assisted by hydraulic or pneumatic equipment, or other methods. Alternatively, a tracked excavator may be required to dig the foundation holes in conjunction with the proposed helicopter construction. As such, the tracked excavator would need to access the structure site via a temporary trail or overland 'drive and crush', neither of which would require any grading; although, some minor brush clearing may be required if the vegetation is too dense to drive across. For these activities, and for the proposed large and medium sized helicopter staging areas, considering the large acreages being described for the implementation of these primary and secondary yards, a visual resource review would have to be done, especially if any would be proposed on NFS land.

LSTs would be assembled in laydown areas at each site, and then erected and bolted to the foundations. Tower assembly would begin with the hauling and stacking bundles of steel at tower location per engineering drawing requirements. This activity requires the use of several tractors with 40-foot floats and an onsite loader. After steel is delivered and stacked, crews would proceed with assembly of leg extensions, body panels, boxed sections and the bridges. The steel work would be completed by a combined erection and torquing crew with a lattice boom or hydraulic crane. The construction crew may opt to install insulators and wire rollers (travelers)

at this time. Figure 2.2-85 in the Project Description provides a representation of this construction process. Ground disturbance would generally be limited to the laydown areas, which would typically occupy an area of 200 feet by 200 feet (0.92 acre). Vegetation clearing in these laydown areas was considered in the visual analysis; however, this vegetation clearing was not simulated in any of the SCE-provided simulations or in the simulations prepared by Lee Anderson and 3DScape.

Where road access is available to tower sites, assembled tower sections would be lifted into place with a minimum of 80-ton, all-terrain or rough terrain crane that would move along the ROW (i.e., along access and spur roads) for structure erection purposes. Erection of new LSTs may also require establishment of a crane pad to allow an erection crane to set up 60 feet from the centerline of each LST. The crane pad would be located transversely from each applicable LST location. In most cases, this crane pad would be located within the laydown area used for LST assembly. If a separate pad is required, it would occupy an area of approximately 50 feet by 50 feet, approximately 0.06 acre. The pad would be cleared of vegetation and also graded as necessary to provide a level surface for crane operation.

Construction of the transmission line, improvements and realignments at the existing Gould Substation, and use of construction staging areas would result in the visual intrusion of construction vehicles, helicopters equipment storage materials, and workers. However, impacts related to construction would be relatively short in duration, as compared to the permanent structures that would be introduced into the landscape by the proposed Project.

South Area

Potential visual impacts resulting from the proposed Project construction activities in the South Area would be experienced from a multitude of vantage points, including Interstate Highways (210, 605, 10) State Highways (60, 57, 39, 2), county roads, state parks, county parks, city parks, memorial parks, and thousands of nearby residences.

Construction impacts on visual resources would result from the presence of equipment, materials, and work forces as described above for the North Area. Construction of the transmission line, upgrades to the existing Mesa and Mira Loma Substations, and use of construction staging areas would result in the visual intrusion of construction vehicles, helicopters, equipment, storage materials, and workers. However, impacts related to construction would be relatively short-duration, as compared to the permanent structures that would be introduced into the landscape by the proposed Project.

Indirect Effects

No indirect visual effects would occur because of construction activities in the North, Center, or South Areas would occur under Alternative 2.

Mitigation Measure for Impact V-1

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. SCE shall keep construction-related operations areas clean and tidy by storing building materials and equipment within the proposed construction staging areas and/or generally away from public view when feasible. SCE shall remove construction debris promptly at regular intervals.

For areas of non-NFS lands where cleared vegetation would be visible from sensitive viewing locations, SCE shall dispose of cleared vegetation and woody material in a manner that is not visually evident and does not create visual contrasts. For NFS lands, in areas where cleared

vegetation would be visible from sensitive viewing locations, SCE shall dispose of cleared vegetation and woody material off-site (not necessarily off-NFS lands), or the cleared vegetation shall be chipped and stored for restoration work, as approved by the FS, and in a manner that is not visually evident and does not create visual contrasts.

CEQA Significance Conclusion

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 (Class I). There are no mitigation measures available to make vehicles, heavy equipment, helicopters, and other related components less than visible during construction. To reduce the consequence of these potential visual impacts, the following mitigation measure has been identified: Mitigation Measure V-1 (Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis).

Mitigation Measure V-1 would help to minimize the adverse visual effects of construction activities and equipment as seen from sensitive receptor locations by minimizing and containing the visual clutter associated with construction. Mitigation Measure V-1 is similar to APM AES-15 and APM AES-17, and would augment these APMs by requiring specific procedures such as establishing a regular periodic interval for cleanup, not to exceed one week in duration. Mitigation Measure V-1 would create natural appearing vegetation clearing shapes and patterns, instead of un-natural square or rectangular openings in vegetation. Implementation of Mitigation Measure V-1, as described above, would reduce Impact V-1 somewhat, but temporary visibility of construction activities and equipment would remain a significant and unavoidable adverse visual impact.

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.

Landscape character

Landscape character is determined by its unique combination of physical, biological, and cultural attributes. Landscape character is an overall visual impression of landscape attributes; it is the physical appearance of a landscape that gives it an identity and sense of place. When land owners and society in general have accepted the existing landscape character (often a rural, pastoral, or residential landscape character) as their sense of place, it is often difficult to reconcile the introduction of a transmission line that makes a permanent change to an industrial landscape character. The rub with transmission lines comes from the disruption of a sense of place and the introduction of industrial character structures into the landscape that do not relate to the human scale.

Visual quality of a landscape is a measure of the degree to which a landscape is visually perceived to be complete. The highest visual quality ratings are given to those landscapes that have little or no deviation from the landscape character valued by constituents for its aesthetic quality. When all visual elements of a landscape are in harmony, that place is deemed to have high visual quality. Introduction of incongruent visual elements into such a landscape would detract from visual quality.

There are no Aesthetic APMs that specifically address the introduction of a new transmission line into a landscape that currently has no transmission lines. Aesthetic APMs could be implied to apply to this situation, except those that specifically relate to existing structures, existing ROWs, existing roads, or existing substations (i.e. APM AES-5, APM AES-9, APM AES-11, and APM AES-13 through APM AES-23). The

following discussion addresses the introduction of a new transmission line and a new ROW into a landscape that currently has no transmission lines. The discussion is subdivided into North, Center, and South Areas.

Structure Colors Used In Visual Simulations for Alternative 2

The Alternative 2 simulations show SCE's standard finish on LSTs, which is "dulled galvanized steel." The new LSTs and TSPs are simulated with a light-gray appearance, consistent with new materials and dulled galvanized steel.

North Area

All of Segment 10 and a portion of Segment 4 (S4 MP 15.8 and S4 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 the Project. High-voltage transmission line structures are the tallest structures in the desert landscape of the Antelope Valley, except for some of the wind turbine generators in the TWRA. In the North Area, typical 500-kV single-circuit lattice steel towers would be 94 to 220 feet tall and have four legs that would occupy an area of approximately 38 to 42-feet square at the base, tapering to a waist of approximately 19 feet, with 96 foot-wide arms holding up the long strings of large, round conductors. These new 500-kV lattice steel towers would be constructed in natural-appearing landscapes that have no existing transmission lines in the following North Area locations: all of Segment 10; and, Segment 4, from S4 MP 15.8, at which point the line would turn south paralleling the east side of 110th Street West (a County Priority 2 Scenic Highway) for approximately 2.1 miles to S4 MP 17.9, thereby degrading the natural appearance of this landscape.

For Segment 10 near the TWRA, introduction of new, industrial character 500-kV lattice steel towers and conductors across the uniform brushfields with uniform vegetative textures and relatively flat desert plains of the Mojave Desert would adversely affect the existing natural-appearing and rural landscape character. Visual quality would be detracted by the geometric forms and angular lines of new lattice steel towers against the rounded lines of rolling foothills and Tehachapi Mountain backdrops. Gray or dark gray colors of factory-treated galvanized steel, as proposed in APM-AES-1, would aid somewhat for lattice steel towers to blend in with the gray-green creosote bush scrub and widely scattered Joshua trees, as seen against the backdrop of the foothills and Tehachapi Mountains.

In the TWRA, new technology systems for wind farms use monopoles exclusively, instead of lattice steel towers, for supporting the wind turbine generators. There are many reasons that lattice towers are not used now, including visual impact reduction and bird-mortality reduction (by reducing perching opportunities on lattice steel towers). Even though some existing, older wind turbine generators in the TWRA have lattice steel towers, all new wind turbine generators in the TWRA currently are using the new, sleek-looking monopoles and larger rotors with slower revolutions per minute, all of which reduces visual impacts and also reduces bird-kills. Therefore, the use of TSPs may be more visually compatible with wind turbines in the TWRA, including portions of Segment 10. Even in areas where TSP are preferred, it may be necessary to use LSTs in certain locations, such as turning points and dead end structures, or in locations with heavy ice loading, which generally includes areas over 3,000 feet in elevation. Locations where it is not feasible to use TSPs would be determined during final engineering design.

Following are descriptions of KOPs in the North Area relevant to Impact V-2 under Alternative 2.

KOP-North-1 – Oak Creek Canyon Road (Segment 10)

KOP-North-1 was established on Oak Creek Canyon Road looking west toward the site of the future Windhub Substation that was approved as part of ATP 2-3. Segment 10 of TRTP would start at the future Windhub Substation, approximately 200 feet south of Oak Creek Canyon Road on a relatively flat desert plain of the Mojave Desert, and approximately one mile east of the Cal Cement Substation access road, and proceed southwest across the desert.

Overall Visual Change: moderate-to-high. The addition of a line of 500-kV single-circuit LSTs would add visual clutter in this landscape, and would create high visual contrast, high dominance, but low view/skyline blockage/impairment. Figure A-3b, Visual Simulation for KOP-North-1, is representative of future visual conditions seen at foreground and middleground viewing distances near S10 MP 0.0 to S10 MP 17. The overall visual change would be moderate-to-high.

KOP-North-2 – Tehachapi Willow Springs Road (Segment 10)

KOP-North-2 was established on Tehachapi Willow Springs Road, looking northwest, at the point where the road turns northwest, after running straight north for many miles in the Mojave Desert. A new 500-kV transmission line would exit Windhub Substation and head south across the flat, undeveloped desert plains. For the proposed Project from S10 MP 0.0 to S10 MP 17.0, the only vantage points of sensitive receptors are Oak Creek Canyon Road (see KOP-North-1), Tehachapi Willow Springs Road, and Rosamond Boulevard near 170 Street West. The proposed Project would cross over the Tehachapi Willow Springs Road at approximately S10 MP 4.3 and would follow along the Los Angeles Aqueduct from approximately S10 MP 7.5 to S10 MP 15.8. Figure A-4b, Visual Simulation for KOP-North-2, is representative of future visual conditions seen at foreground and middleground viewing distances from S10 MP 3.0 to S10 MP 9.0.

Overall Visual Change: low-to-moderate. The addition of a line of 500-kV single -circuit LSTs would add visual clutter in this landscape, and would create moderate visual contrast, low dominance, and low view blockage/impairment. The overall visual change would be low-to-moderate.

Indirect Effects

In the North Area an indirect visual effect of Alternative 2 in existing natural-appearing landscapes would be potential new visual impacts of OHV use in undeveloped landscapes, especially those new OHV trails that would emanate from new access and spur roads along Segment 10 and Segment 4 from MP 14.9 to S4 MP 17.9. Other indirect visual effects in natural-appearing landscapes of the North Area would be the further development of wind farms and wind turbine generators in the TWRA. Without the proposed Project, the amount of new wind energy development in the TWRA would be limited by transmission constraints. Therefore, by allowing the proposed Project to proceed, the natural-appearing landscape in the TWRA would be further modified by construction, operation and maintenance of new large wind turbine generators and development of new wind farms

Center Area

Although the Center Area is predominantly all natural-appearing landscapes, under Alternative 2 there are no occurrences within the Center Area where new transmission line structures would be built in a completely new alignment or new ROW. (There is a 16-mile portion of Segment 11 directly north of the Gould Substation

where Segment 11 is currently constructed and operated in an existing designated utility corridor where the existing ROW would be widened. Normal ROW width on NFS lands is 160-feet. Replacement of current 220-kV towers with 500-kV structures would require additional width. There are two parallel existing transmission lines in this vicinity, with Segment 11 being one of them. The FS has clarified that each transmission line is within its own ROW). Therefore, with only replacement of existing industrial landscape character structures with new, taller, wider industrial landscape character structures, there are no situations where there would be V-2 impacts in the Center Area.

Indirect Effects

Because the proposed Project would be developed in existing transmission line ROWs in the Center Area, no indirect V-2 effects would occur in undeveloped, natural-appearing landscapes of the Center Area under Alternative 2.

South Area

The following portions of Segment 8 would be constructed in new ROWs, and therefore the existing natural-appearing landscape character would be modified to an industrial character by the presence of the proposed Project (Alternative 2). New 500-kV lattice steel towers would be constructed in natural-appearing landscapes that have no existing transmission lines, as follows:

- Rose Hills Memorial Park ROW relocation onto a skyline ridge (existing: 1.1-mile, 200-foot-wide; future: 1.4-mile, 240-foot-wide) (Discussed below, under Impact V-2.)
- Hacienda Heights ROW expansion (existing: 2.15-mile, 150 to 230-foot-wide; future: 250 to 330-foot-wide) (Discussed under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)
- Fullerton Road new ROW (existing: none; future: 0.4-mile, 100-foot-wide) (Discussed under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)
- Ontario (near Mira Loma Substation) ROW expansion (existing: 0.45-mile, 100-foot-wide; future: 250-foot-wide) (Discussed under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)

Under Alternative 2, typical transmission line towers within the South Area would have the following range of heights:

- 500-kV single-circuit LST: 128 to 149 feet tall
- 500-kV double-circuit LST: 147 to 255 feet tall
- 500-kV single-circuit TSP: 120 to 170 feet tall
- 500-kV double-circuit TSP: 150 to 195 feet tall
- 220-kV single-circuit LST: 65 to 75 feet tall
- 220-kV double-circuit LST: 113 to 180 feet tall

Consequently, for these portions of Segment 8 in the South Area which include new ROW, Alternative 2 would alter existing natural-appearing landscape character and modify these to industrial character landscapes.

Following is a KOP description relevant to Impact V-2 under Alternative 2.

KOP-South-7 – Buddhist Columbarium at Rose Hills Memorial Park (Segment 8A)

KOP-South-7 is located at the Buddhist Columbarium at Rose Hills Memorial Park. This KOP was selected to represent views of the Project through the Memorial Park. The proposed Project would relocate two existing transmission lines from a midslope location to a ridgetop location, interfering with views to the San Gabriel Mountains in the background (see Figure A-42b).

Overall Visual Change: high. With high visual contrast, high dominance, and high view blockage/impairment of the ridgeline and background mountains, the overall visual change would be high.

Based on the analysis of the North, Center, and South Areas where new transmission lines would be introduced into a landscape that currently has no transmission lines, the Senior Visual Analyst recommends to the CPUC that tubular steel poles should be used in the following locations denoted in Table 6-5, for multiple reasons, including reduction of visual, recreation, and wildlife impacts.

Table 6-5. In Landscapes That Currently Have No Transmission Lines, Specifically In Antelope Valley and Rose Hills Memorial Park, Locations Where Tubular Steel Poles and Colored Galvanizing Treatments Are Recommended to Improve the Visual Environment		
TRTP Segment and Structure Size	Location by Milepost	Galvanizing Treatments and Structure Types
Segment 4 – 500-kV SC	MP 15.8 to 19.6	Light dulled galvanizing treatment on 500-kV tubular steel poles in immediate foreground of 110 th Street West and from 110 th Street West to the Antelope Substation, to match the monopoles that were constructed for the Antelope-Pardee 500-kV Transmission Project. H-frames, multiple monopoles, or guyed monopoles are recommended at turning points.
Segment 10 – 500-kV SC	MP 0.0 to 16.8	Light dulled galvanizing treatment on “Y” shaped, H-frame, or multiple 500-kV tubular steel poles of TRTP to match light-gray colors of existing and future wind turbine generator (WTG) monopoles of the Tehachapi Wind Resource Area (TWRA). H-frames, multiple monopoles, or guyed monopoles are recommended at turning points. (If the CPUC decides to allow SCE to use LSTs for Segment 10, instead of TSPs, then the LSTs should have light dulled galvanizing treatment).
Segment 8A – 500-kV DC and second parallel relocated DC T/L	MP 5.9 to 7.1 (In Segment 8A, SCE plans to use TSPs from MP 22.9 to 35.0, with LSTs for turns/dead-end structures)	Light dulled galvanizing treatment on 500-kV DC tubular steel poles and second parallel relocated DC T/L on the skyline in Rose Hills Memorial Park. H-frames, multiple monopoles, or guyed monopoles are recommended at turning points.

Table Notes:

¹ SCE to provide four (4) samples of material and finish, as well as example of new TSP constructed with this material.

Indirect Effects

In the South Area, except for the four occurrences noted above, no significant adverse indirect visual effects of Alternative 2 would be anticipated to occur in existing natural-appearing landscapes.

Mitigation Measures for Impact V-2

V-2a Use tubular steel poles instead of lattice steel towers in designated areas. When feasible, SCE shall use tubular steel poles, rather than lattice steel towers, in locations designated by the CPUC and the FS (for NFS lands), to reduce visual impacts as seen from sensitive receptor locations and/or to match existing and/or future wind turbine generator monopoles and/or to accomplish community desires. SCE shall submit a Structure Type and Treatment Plan to the CPUC as soon as possible after Project approval, demonstrating compliance with this.

V-2b Treat surfaces with appropriate colors, textures, and finishes. For all structures that are visible from sensitive viewing locations outside NFS lands, and for all NFS lands, SCE shall treat surfaces with appropriate galvanizing treatments, per APM AES-1, to most effectively blend the structures with the visible backdrop landscape, as determined by the CPUC (for non-NFS lands) and the FS (for NFS lands). For structures that are visible from more than one sensitive viewing location, if

backdrops are substantially different when viewed from different vantage points, the darker color shall be selected, because dark colors tend to blend into landscape backdrops more effectively than lighter colors, which may contrast and reflect light, producing glare. At locations where a lattice steel tower or a tubular steel pole would be silhouetted against the skyline, non-reflective, light-gray colors shall be selected to blend with the sky. The transmission line conductors shall be non-specular and non-reflective, per APM AES-4, and the insulators shall be non-reflective and non-refractive, per APM AES-3. SCE shall consult with the CPUC and the FS (for NFS lands) to ensure that the objectives of this measure are achieved. SCE shall submit a Structure Type and Treatment Plan for the lattice steel towers, tubular steel poles, conductors, insulators, substation structures, fences/walls, retaining walls, and any other visible structures, to the CPUC and FS, as appropriate, after Project approval, demonstrating compliance with this measure.

V-2c Establish permanent screen. At Antelope and Vincent Substations, SCE shall establish a permanent screen of sufficient height for immediate visual screening around the new expansion areas of the Antelope and Vincent Substations. Plant materials selected for screening shall be locally appropriate, wind-resistant, non-invasive, and acclimated to the particular environment and micro-climate. Other screening materials shall blend in with the local landscape. SCE shall consult with the CPUC to ensure that the objectives of this measure are achieved. SCE shall submit landscaping plans for Antelope and Vincent Substations that demonstrate compliance with this measure to the CPUC for review and approval at least 60 days prior to the start of construction at these substations.

CEQA Significance Conclusion

The goal of Mitigation Measures V-2a through V-2c is to select appropriate structure types and colors (see Figure 6-1 at the end of this section), and add vegetative screening through thoughtful planning and design, such that the new structures (substations, lattice steel towers, or tubular steel poles) would blend into the landscape to the greatest extent possible, with the least impact to landscape character and visual quality.

Starting with Segment 10 at the northern end of the North Area, implementation of Mitigation Measure V-2a (Use tubular steel poles instead of lattice steel towers in designated areas) would allow the new structures to set an architectural tone for the existing and soon-to-be enlarged wind resource area. The Alta-Oak Creek Wind Energy Project (Alta) is currently undergoing CEQA analysis and review by Kern County. The Alta project description states that WTGs would be constructed with monopole towers, rather than lattice tower designs. The Alta Applicant pointed out several advantages to the monopole design, including: “it is stronger; more aesthetically pleasing; discourages bird perching; protects against vandalism; protects the equipment and workers from adverse environmental conditions; and, can be manufactured to meet the newest seismic building codes” (Alta Windpower Development, LLC, 2009). In the future, development of new wind turbine generators with sleek monopoles are expected to add to the architectural tone of the area and would help make the 500-kV monopole structures seem to be a congruent visual part of the enlarged TWRA; and conversely, use of lattice structures for TRTP would appear incongruent.

The introduction of new transmission lines (Segment 10) and the new Whirlwind Substation into existing natural-appearing landscapes with no existing transmission lines (Segment 10) or substations (Segment 9), as proposed under Alternative 2, would create adverse but not significant visual impacts in the North Area. There is no mitigation available to make new transmission lines or a new substation disappear or become inconspicuous. Implementation of Mitigation Measures V-2a and V-2c would help to minimize the adverse visual effects of new transmission line alignments and structures as seen from sensitive receptor locations by minimizing visual impacts through careful planning and design.

Implementation of Mitigation Measure V-2c (Establish permanent screen) around the existing and proposed expanded Antelope and Vincent Substations would lead to an overall improved visual environment at both Substation sites. SCE has proposed APM AES-23 (Landscape Plan), but it specifically mentions only the expansion area at Vincent Substation; therefore, Mitigation Measure V-2c is required to deal with visual impacts at both the Antelope and Vincent Substations. Measure V-2c would augment APMs AES-18 through AES-22 at Antelope and Vincent Substations, and visual impacts in the areas of the proposed expansions would remain adverse but not significant.

As currently planned and designed, Segment 4 (S4 MP 15.8 to S4 17.9) would result in significant adverse visual impacts to 110th Street West, a Priority 2 Los Angeles County Scenic Highway under the current County General Plan, leading to significant and unavoidable adverse impacts. However, for Segment 4 (S4 MP 15.8 to S4 17.9), implementation of Mitigation Measures V-2a (Use tubular steel poles instead of lattice steel towers in designated areas) and V-2b (Treat surfaces with appropriate colors, textures, and finishes) would substantially reduce visual impacts. Implementation of these measures, as described above, would reduce Impact V-2 somewhat, but the presence of new transmission line structures and conductors in new ROWs, visible from Oak Creek Canyon Road, Tehachapi-Willow Springs Road, and 110th Street West in a landscape that currently has no transmission line facilities, would remain a significant and unavoidable adverse visual impact (Class I).

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 V-1 (Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis), V-2a (Use tubular steel poles instead of lattice steel towers in designated areas), and V-2b (Treat surfaces with appropriate colors, textures, and finishes) would reduce Impact V-2 in the Rose Hills Memorial Park. Implementation of Mitigation Measures V-2a and V-2b, as described above, would reduce Impact V-2 in the Rose Hills area and use of tubular steel poles instead of lattice steel towers on a skyline ridge would result in a significant adverse visual impact that can be reduced to less than significant through application of feasible mitigation measures (Class II).

While the use of TSPs may reduce certain adverse impacts in Segments 4, 8, and 10 as indicated by Mitigation V-2a, installation of TSPs would not be feasible in all locations. There are various technical constraints that limit the ability to utilize TSPs in some locations, including the additional ice loading that can occur at elevations above 3,000 feet in elevation. Most of Segment 10 and portions of Segment 4 are above 3,000 feet in elevation. Also, structural design standards dictate the LSTs, rather than TSPs, would need to be used for 500-kV angle structures and dead-end structures. In addition, TSPs are comprised of much larger individual components than LSTs, which introduces many more constraints related to their construction. Therefore, the feasibility of constructing TSPs must be determined on a site-by-site basis based on detailed engineering design as well as construction planning. In order to implement Mitigation Measure V-2a, the Lead Agencies will need to determine appropriate and feasible locations for the use of TSPs instead of LSTs. While no final determinations have been made regarding the use of TSPs as visual mitigation, Appendix J of the EIR/EIS describes candidate locations for the installation of TSPs on non-NFS lands (no additional TSPs are recommended for NFS lands). The CPUC, which has approval authority over the Project on non-federal lands, has developed a set of draft guidelines intended to help identify appropriate and feasible locations for the use of TSPs as visual mitigation. These draft guidelines are also provided in Appendix J of the EIR/EIS. Unless the

CPUC approves specific locations for the use of TSPs as mitigation, no additional TSPs would be installed as part of the proposed Project.

Similar to Mitigation Measure V-2a, implementation of Mitigation Measure V-2b (Treat surfaces with appropriate colors, textures, and finishes) would require the Lead Agencies to identify appropriate locations for the use of colored galvanizing treatments, ranging from light to dark, on transmission structures (LSTs and TSPs). In order to reduce the visibility of transmission structures in the landscape, colored galvanizing treatments would need to be selected that enable the transmission structures to blend with backgrounds (typically landforms and sky) as seen from sensitive viewing locations. Unless the Lead Agencies approve colored galvanizing treatments for individual structures or specific groups of structures, SCE's standard galvanizing treatment, which is light gray is color, would be used by default. Appropriate colored galvanizing treatments will be determined through the development and review of the Structure Type and Treatment Plan called for in Mitigation Measure V-2b.

In addition to the measures described above, implementation of the following mitigation measure is recommended for the entire route of the proposed Project to minimize the effects of Impact V-2 along the Project route: V-1 (Clean up staging areas, storage areas, marshalling yards, access and spur roads, and structure locations on a regular periodic basis).

While the mitigation measures described above would reduce the effects of Impact V-2 along 110th Street West, the impact to this Priority 2 Los Angeles County Scenic Highway would remain significant and unavoidable (Class I). Please see Section 7.1 for a discussion of Alternative 3, which would avoid placing the transmission line in the immediate foreground of this road for a distance of 2.1 miles, but would result in a direct crossing of this road.

Impact V-3: For a landscape with an existing transmission line, increased structure size and new materials 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 of increased size (e.g., 500 kV) made of new materials would result in adverse visual effects. 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.

Certain Aesthetic APMs specifically address the visual effects of introducing new structures with increased sizes and new materials into a landscape with an existing transmission line. Aesthetic APMs 1 through 8 specifically apply to this situation and were considered in the analysis of the proposed Project. However, the Aesthetic APMs are general in nature and, except for the substation APMs, are not location-specific. The following discussion addresses the introduction of a new, larger transmission line in an existing ROW, and is subdivided into discussion of the North, Center, and South Areas.

North Area

Most of the North Area has an existing rural landscape character with scattered rural residential/ranch developments, agricultural fields, and a one-mile grid of roads. Only near the western outskirts of Palmdale

and Lancaster are there any areas of medium-to-high density residential uses, and these residential neighborhoods are continuing to be built closer to the Segment 5 ROW. Crossing these rural and residential landscape characters, there are several major transmission line corridors, including the corridors where most of Segment 4 (except S4 MP 15.8 to MP 17.9) and all of Segment 5 would be built.

The visual appearance of different types of high-voltage transmission line structures depends on several variables, including: viewing distance (foreground, middleground, or background); angle of view (viewer below a structure, viewer above a structure, or viewer level with a structure); structure placement in the landscape (situated on a skyline ridge, midslope on a mountainside, at the bottom of a hillside or mountainside, or in the middle of a flat desert plain), as explained above under Impact V-2.

For the northern portion of Segment 4, the construction of two new parallel, 4-mile long, single-circuit 220-kV transmission lines (Cottonwind – Whirlwind 220-kV No. 1 & No. 2) would not create an adverse visual impact, as seen from nearby roads, because they would be immediately adjacent to existing 220-kV and 500-kV transmission lines. These two new lines would cross directly over the PCT at S4 MP 2.7, but this part of the PCT is located on an existing access road, not a narrow trail-bed, and visual impacts would be minimal. Because this four mile subsegment of Segment 4 is within the TWRA, it is likely that future wind farms will be constructed in the immediate vicinity of these two transmission lines. As was discussed for Segment 10, above, use of TSPs for the two new parallel 220-kV transmission lines in the northern portion of Segment 4 may be more visually compatible with wind turbines in the TWRA. Although the use of TSPs is preferred, it may be necessary to use LSTs in certain locations, such as turning points and dead-end structures, or in locations with heavy ice loading, which generally includes areas over 3,000 feet in elevation. Locations where it is not feasible to use TSPs would be determined during final engineering design.

For the middle portion of Segment 4 S4 MP 4.1 to 15.8 (the single-circuit Whirlwind – Antelope 500-kV line), there would be new 500-kV lattice steel towers and conductors constructed in an expanded ROW southwest of and adjacent to an existing utility corridor with high-voltage transmission lines. Because this portion of Segment 4 would be constructed next to this existing corridor; consequently, overall changes to existing landscape character and existing visual quality would be adverse but less than significant, as displayed in Figures A-6a and A-6b (see Appendix A). However, the southern portion of Segment 4 (S4 MP 14.9 to 17.9) would be in an entirely new 200-foot ROW immediately adjacent to 110th Street West, a County-designated Second Priority Scenic Highway in the current County General Plan, then turn east and connect to Antelope Substation. This new 500-kV transmission line would create adverse visual impacts to the existing rural landscape character and intact visual quality of West 110th Street, and is discussed above under Impact V-2.

Expansion of the existing Antelope Substation would be highly visible from Avenue J and nearby residences. It would create high visual contrast, high dominance, and high view blockage/impairment to the existing landscape and views to Portal Ridge. In 2007, SCE prepared a visual simulation of the Antelope Substation expansion, based on current plans, which included an eight-foot-high perimeter chain link fence, as shown in Figure A-8b. Subsequently, SCE has modified its plans and has eliminated the chain link fence and replaced it with an eight-foot-high perimeter pre-cast concrete wall (not simulated). In either case, the simulation shows that proposed substation equipment is much taller than eight feet. Establishment of a permanent screen (Mitigation Measure V-2c) would help to reduce visual impacts, as illustrated in Figures A-8a and A-8b (see Appendix A) for KOP-North-6.

Segment 5 would remove the existing Antelope-Vincent 220-kV transmission line and the existing Antelope - Mesa 220-kV transmission line, and in the same 200-foot-wide ROW, would construct the new, approximately

17.8 mile long, single-circuit Antelope-Vincent No. 2 500-kV transmission line. The new single-circuit 500-kV lattice steel towers would range from 113 to 188 feet tall, while existing 220-kV lattice steel towers are approximately 20 to 25percent shorter. The increased size of these new towers could result in several adverse visual effects. The additional structure height and width of the 500-kV structures, as compared to the existing shorter, smaller 220-kV structures that would be removed, would cause an increase in structural prominence, and create a visible increase in industrial character. As a result, visual quality would be reduced by contrasting forms, lines, and that resulting contrast would be high. The existing Antelope-Vincent corridor visually dominates the existing rural landscape features adjacent to the utility corridor, and the addition of Segment 5 would continue this dominance. The new and increased structure height would create additional obstruction of the background landscape and would result in a high degree of view blockage of higher quality landscapes as seen from the KOPs.

Additional structure height also would cause additional structure skylining (towers and conductors extending above the horizon line), particularly for towers where, as seen from some vantage points, the existing shorter structures remain below the skyline or only slightly extend above the horizon line. Some new structures would protrude above the horizon and impair scenic views. Increased tower height would also raise the conductors such that more of the background landscapes in this portion of the North Area (Tehachapi Mountain Range, Antelope Valley, Mojave Desert, Portola Ridge, and Sierra Pelona Ridge) would be visually obstructed, depending on the direction of view. These visual changes are illustrated in Figures A-9a through Figures A-15b (see Appendix A). Because existing landscape conditions include tubular steel poles, lattice steel towers, and conductors of various transmission lines, visual changes of the Project from the Antelope Substation to the Vincent Substation would be noticeable but not uncommon.

Following are descriptions of KOPs in the North Area relevant to Impact V-3 under Alternative 2.

KOP-North-3 – 170th Street West (Segments 4, 9, 10)

KOP-North-3 was established on 170th Street West, about 1.5 miles south of Rosamond Boulevard, looking north toward the site of the TRTP Whirlwind Substation and two new 220-kV transmission lines of Segment 4 entering the proposed Whirlwind Substation from the northwest and one new 500-kV transmission line of Segment 10 entering from the northeast. Then one new 500-kV transmission line would proceed southeast toward Antelope Substation. The PCT traverses the dense creosote brushfield in this landscape, although it is not visible in this photograph. Figure A-5b Visual Simulation for KOP-North-3, is representative of future visual conditions seen at foreground and middleground viewing distances from 170th Street West. The proposed Whirlwind Substation would have a precast concrete perimeter wall as shown in this simulation, which would partially screen from view some of the shorter equipment inside the substation.

Overall Visual Change: moderate-to-high. The addition of two 220-kV lines, a line of 500-kV line, and a new substation would add visual clutter in this landscape, and would create moderate-to-high visual contrast, high dominance, and moderate view blockage/impairment. The overall visual change would be moderate-to-high.

KOP-North-4 – California Poppy Reserve (Segment 4)

KOP-North-4 was established at the Antelope Buttes Vista Point within the Antelope Valley California Poppy Reserve, looking northeast. The Poppy Reserve is a day-use park, with a visitor center that is open from March 31 through May of each year to correspond with the typical poppy season. This KOP was selected because the Poppy Reserve is a heavily-visited destination during poppy season.

This specific location is a viewing point identified on the Poppy Reserve trail map and is the viewpoint that is closest to the transmission corridor. Figure A-6b is the visual simulation from KOP-North-4.)

Overall Visual Change: moderate. The addition of a new 500-kV line parallel and adjacent to existing transmission lines through the Antelope Valley would continue and compound the visual clutter of transmission lines in this viewshed. It would create moderate-to-high visual contrast, moderate dominance, and low view blockage/impairment. The overall visual change would be moderate.

KOP-North-5 – 110th Street at Silverwind Way (Segment 4)

KOP-North-5 was established on 110th Street near its intersection to Silverwind Way, a private road. At this location, 110th Street is a Priority 2 County Scenic Highway. This view is looking northwest across the Antelope Valley toward the Tehachapi Mountains in the background. SCE's proposed Project would follow along 110th Street West for approximately two miles. West 110th Street is a straight north-south road that gradually descends in elevation from Portola Ridge into the flat Antelope Valley. Under the proposed Project, new 500-kV transmission lines and LSTs would be located on the east side of the road, right next to the county road ROW. These structures would be very visually evident in the immediate foreground of West 110th Street from S4 MP 15.8 to S4 17.9, a distance greater than 2 miles, and would be very visually evident and incongruent with the natural-appearing scenery.

Overall Visual Change: high. The new 500-kV line would be parallel to 110th Street West in the immediate foreground for a distance of more than 2 miles. It would create high visual contrast, high dominance, and high view/skyline blockage. The overall visual change would be high.

KOP-North-6 – Avenue J at Antelope Substation (Segment 9)

KOP-North-6 was established on Avenue J looking southwest at the existing Antelope Substation. The camera location is just slightly east of the proposed expansion area for the Antelope Substation. KOP-North-6 was selected to represent views of the substation expansion by travelers driving west on Avenue J and from the scattered residences in the Project vicinity. The human-made elements of substation, transmission lines, and Avenue J in KOP-North-6 dominate the view. The proposed expansion of the Antelope Substation was simulated by SCE and used in the EIR/S visual analysis. At the time this simulation was prepared in 2007, SCE intended to install a perimeter chain link fence around the expanded substation. Subsequently, SCE decided it would have a precast concrete perimeter wall (not shown in this simulation). The location of this perimeter concrete wall is shown in Figure 2.2-76 of the TRTP Project Description.

Overall Visual Change: high. The proposed Antelope Substation expansion would be highly visible in the foreground as seen from Avenue J and middleground from other nearby roads and residences. It would create high visual contrast, high dominance, and high view blockage/impairment. The overall visual change would be high.

KOP-North-7 – Avenue L Near Olive Grove (Segment 5)

KOP-North-7 was established on Avenue L near an existing homestead with an olive grove, looking southeast. The proposed Project would traverse the flat desert plain of Antelope Valley, following multiple existing transmission lines in the Antelope-Vincent Corridor (see Figure A-9b). Segment 5 would remove two existing 220-kV lines and replace them with one new 500-kV line in the same

alignment. Additionally, Segment 2 of the already approved Antelope Transmission Project would remove the line of wooden 66-kV transmission poles and replace them with 75-foot-tall, light-weight, direct-buried TSPs, 180 feet west of and parallel to the existing alignment of the existing wooden structures. Following this relocation, Segment 2 will construct the proposed 500-kV LSTs in the location of the existing 66-kV transmission poles. Figure A-9b in the Appendix is representative of existing conditions seen at foreground and middleground viewing distances from S5 MP 0.0 to S5 MP 4.4.

Overall Visual Change: moderate. Replacement of an existing 220-kV line with new 500-kV LSTs would create very little new contrast because of the amount of existing visual clutter in the Antelope-Vincent ROW. The new transmission line would add to the visual clutter, but would not change the contrast, structural dominance, or view blockage of the skyline at Portal Ridge, all of which are high. The overall visual change would be moderate.

KOP-North-8 – Avenue N at Agena Road (Segment 5)

KOP-North-8 was established on Avenue N at Agena Road, looking south. From S5 MP 4.4 to S5 MP 6.4, the proposed Project would cross over the crest of Portal Ridge. Because Portal Ridge forms a landscape backdrop for much of the Antelope Valley and the City of Lancaster, any skylining of additional industrial character structures would be a potential visual impact. There are numerous major roads from which the proposed Project would be viewed with Portal Ridge as a backdrop or with towers seen on the skyline, including 70th Street West, 60th Street West, Avenue M-8, Godde Hill Road, and Avenue N. Numerous minor roads and residential streets also provide views to the proposed Project for nearby residents and visitors to Lancaster. A new development is currently under construction at the Quartz Hill Water Treatment Plant of the Antelope Valley East Kern (AVEK) Water Agency, in the immediate foreground of KOP-North-8 (see Figure A-10b in Appendix A).

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter in the Antelope-Vincent ROW. The new transmission line would add to the visual clutter, and because new LSTs would be taller and wider, would increase contrast, structural dominance, or view blockage of the skyline at Portal Ridge. The overall visual change would be moderate.

KOP-North-9 – Godde Hill Road (Segment 5)

At approximately S5 MP 6.4, the proposed Project would cross over Godde Hill Road, just downhill on the north side of Godde Pass on Portal Ridge. KOP-North-9 was established on Godde Hill Road at the center of the existing utility corridor, looking southeast. There is a turnout at this location along the twisting, two-lane paved road. During site investigations, it was noted at several times that people were stopped at the turnout, looking at the five existing transmission lines that cross the road at this location (see Figure A-11b).

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter in the Antelope-Vincent ROW. Vegetation would be cleared at the base of each new structure and at pulling/splicing locations. The new transmission line would add to the visual clutter, and because new LSTs would be taller and wider, would increase contrast, structural dominance, and view blockage of the skyline at Portal Ridge. The overall visual change would be moderate.

KOP-North-10 – Elizabeth Lake Road (Segment 5)

KOP-North-10 was established on Elizabeth Lake Road (a Second Priority County Scenic Highway) near several existing rural ranchettes, looking north (see Figure A-12b). From S5 MP 6.7 to S5 MP 7.9, the proposed Project would be visible from Elizabeth Lake Road and these residential ranchettes. The proposed Project Segment 5 would replace two existing 220-kV lines with one 500-kV line and would pass near one uninhabited and three inhabited residences in this vicinity, which includes the AV Buffalo Ranch. At approximately S5 MP 7.5, the proposed Project would enter property owned by Ritter Ranch Development, a large planned development currently under construction. This Figure is representative of existing conditions seen at foreground viewing distances from S5 MP 6.7 to S5 MP 7.9.

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter in the Antelope-Vincent ROW. Vegetation would be cleared at the base of each new structure and at pulling/splicing locations. The new transmission line would add to the visual clutter, and because new LSTs would be taller and wider, would increase contrast, structural dominance, and view blockage of the skyline at Portal Ridge. The overall visual change would be moderate.

KOP-North-11 – Sierra Pelona Ridge from Avenue S (Segment 5)

KOP-North-11 was established on Avenue S looking southwest at Sierra Pelona Ridge. As before, two existing 220-kV lines would be replaced by one 500-kV line in this vicinity leading into the Vincent Substation south of the Antelope Freeway (I-14). Visual characteristics of the landscape are similar from approximately S5 MP 14.8 to S5 MP 20.2. This KOP is typical of views from many different vantage points, including new residential streets in the Anaverde and Palmdale 1000 Developments, existing residential streets in Palmdale, Tuckerway Ranch Road, Peaceful Valley Road, and Avenue S (see Figure A-13b). Currently under construction, the Anaverde Development is visible on the right in Figure A-13a and the proposed Palmdale 1000 Development would be constructed on vacant lands to the left side in Figure A-13b.

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter on the skyline and in the Antelope-Vincent ROW. Vegetation would be cleared at the base of each new structure and at pulling/splicing locations. The new transmission line would add to the visual clutter, and because new LSTs would be taller and wider, would increase contrast, structural dominance, and view blockage of the skyline at Portal Ridge. The overall visual change would be moderate.

KOP-North-12 – Sierra Highway and Antelope Valley Freeway (Segment 5)

KOP-North-12 was established on the Sierra Highway looking northeast at the Antelope Valley Freeway corridor. At approximately S5 MP 20.4 to S5 MP 20.6, the proposed Project would cross over the Antelope Valley Freeway (a six-lane highway), the Sierra Highway (a two-lane highway), and the Acton/Vincent Grade Metrolink railroad (two-tracks) (see Figure A-14b).

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter on the skyline and in the Antelope-Vincent ROW. The new transmission line would add to the visual clutter, and

because new LSTs would be taller and wider, would increase contrast, structural dominance, and view blockage of the skyline. The overall visual change would be moderate.

KOP-North-13 – Acton/Vincent Grade Metrolink Park and Ride (Segment 5)

KOP-North-13 was established at the Acton/Vincent Grade Metrolink Park and Ride access road, looking south to the Vincent Substation. The proposed Project would be located approximately 0.1 mile west of the Acton/Vincent Grade Metrolink Park and Ride and looking south from this facility, the Vincent Substation and a multitude of transmission lines are visible (see Figure A-15b). Looking between the two LSTs in the center of this Figure, the viewer can see a multitude of parallel transmission lines exiting the Vincent Substation and heading south over the San Gabriel Mountains into Landscape Unit 5. The proposed Project would remove two existing 220-kV lines and replace them with one 500-kV line that would lead into the substation. Figure A-15b is representative of the proposed Project from S5 MP 20.5 to its terminus at S5 MP 21.6 in the substation. The Angeles Forest Highway is approximately 0.25 mile east of this location, and it runs parallel to the transmission line, thereby affording foreground views to the proposed Project.

Overall Visual Change: moderate. Replacement of two existing 220-kV lines with a new 500-kV line would create very little new contrast because of the amount of existing visual clutter on the skyline and in the vicinity of the Metrolink and Vincent Substation. The new transmission line would add to the visual clutter, and because new 500-kV structures would be taller, they would increase contrast, structural dominance, and view blockage of the skyline. The overall visual change would be moderate.

Indirect Effects

In the North Area an indirect visual effect of Alternative 2 would be the further development of wind farms and wind turbine generators in the TWRA. Without implementation of the proposed Project or one of its physical alternatives, the amount of new wind energy development in the TWRA would be limited by transmission constraints. Consequently, under Alternative 2 the landscape in TWRA could be further modified by construction, operation and maintenance of new large wind turbine generators and development of new wind farms.

Center Area

Potential visual impacts resulting from the proposed Project's construction and operation in the Center Area would primarily be experienced by sensitive receptors from roads, trails, and recreation areas in the ANF. These travelways and use areas include State, county, and Forest Service roads, Forest Service trails (including National Scenic and National Recreation Trails), a Los Angeles Unified School District Outdoor Education Center, and nearby developed recreation sites and undeveloped recreation areas. Refer to Section 3.15 (Wilderness and Recreation) of the EIR/EIS for a complete list of these recreation sites. In the Center Area, new TRTP 500-kV single-circuit lattice steel towers would be 85 to 220 feet tall and have four legs that occupy an area of approximately 38 to 42 feet square at the base, tapering to a waist of approximately 19 feet, with 96 foot wide arms holding up the long strands of conductors. The Center Area in the vicinity of Segments 6 and 11 has a predominantly natural-appearing existing landscape character, except for landscape scars that have been created by pads for the existing high-voltage transmission lines, access roads, and spur roads. Additionally, the existing lattice steel structures are generally the tallest objects in the landscape, dwarfing the native chaparral vegetation and scattered groves of conifer trees, and have introduced geometric forms, angular lines, and an industrial landscape character in an otherwise natural-appearing landscape. Other existing

landscape features that have impacted natural-appearing landscape character and decreased visual quality are existing highways with large cut-and-fill slopes.

In the Center Area, Segment 11 would replace existing shorter, smaller 220-kV lattice steel towers and small conductors with new, taller, wider 500-kV lattice steel towers and larger conductors for a distance of approximately 18.7 miles. Segment 11 would leave the Vincent Substation on 500-kV delta configuration LSTs, and structures 1 to 17 would be these delta towers rather than the more typical 500-kV LSTs. Structures 7-14 and 16-17 would be located on NFS lands inside the ANF boundary and would be delta towers, for a total of 10 delta towers on NFS lands. These delta towers are shown in cross-section Figures 2.2-56 through 2.2-58 of the Project Description, but do not appear in any of the visual simulations from selected KOPs.

In several locations, Segment 11 would be seen at foreground distances, including Angeles Forest Highway, the PCT, Mount Gleason Road, Mount Gleason CDF Camp 16, Big Tujunga Canyon Road, Clear Creek Outdoor Education Center, and Angeles Crest Scenic Byway (also known as the Angeles Crest State Scenic Highway). In these locations, existing 220-kV lattice steel towers and conductors already detract from desired natural-appearing landscape character and lower the visual quality. The existing towers are grandfathered in and do not have to meet the SIOs because they were there before the SIOs were established, but new towers are subject to the SIOs. New, taller, wider 500-kV lattice steel towers and conductors would emphasize and augment the industrial landscape character and would further lower visual quality. Scenic integrity levels that would be achieved by the proposed Project would be moderate, low, very low, and unacceptably low, as shown in Table 2-5.

From other vantage points such as the Angeles Forest Highway, Segment 11 would be visible at middleground and background viewing distances, and at certain times of day and with certain sun angles, the new transmission line's towers and conductors would reflect sunlight and be very visible. These adverse visual effects would not meet the Desired Condition of natural-appearing landscape character or the High SIO. Near the Clear Creek Outdoor Education Center, Segment 11 would be very noticeable from the nature trail and would detract from the natural-appearing landscape character, plus it would not meet the High SIO. Scenic integrity levels that would be met by the Project would be low.

Near the Millard Campground, Segment 11 would simply string new conductors on the vacant side of existing double-circuit 220-kV lattice steel towers. When viewed from below, conductors appear dark in color. The scenic integrity level that is currently met near Millard Campground is unacceptably low, and with implementation of Alternative 2, it would continue to be unacceptably low.

Segment 6 from S6 MP 3.25 to 4.8 would replace two existing 220-kV transmission lines with two new 500-kV transmission lines composed of new, taller, wider lattice steel towers that would be visible in the foreground of the Angeles Forest Highway. From S6 MP 4.8 to 26.9, Segment 6 would replace one existing 220-kV transmission line with one new 500-kV transmission line composed of new, taller, wider lattice steel towers and larger conductors. Segment 6 would be visible in the foreground from the Angeles Forest Highway, the PCT and trailheads at Mill Creek Summit. With regard to the PCT, ANF Standard S1 requires that the scenic integrity of foreground views and designated viewpoints be protected, and where practicable to avoid establishing nonconforming land uses within the viewshed of the trail. Currently, there is an existing Antelope Mesa 220 kV tower (M34-T2) located immediately within the viewshed and foreground of the PCT, but because it was installed prior to the development of ANF Standard S1, it was not considered to be in violation of the Standard. This tower, however, would be replaced by a new larger 500 kV LST tower, which would have direct impacts on visual resources and recreational resources of the PCT because it would be visible in the immediate foreground and foreground of the PCT and trailhead at Mill Creek Summit. Based on

site investigations and preliminary engineering by SCE, it would not be practicable to locate the new tower anywhere other than in the immediate location of the existing 220 kV tower. However, SCE has also indicated that despite the increased size of the 500-kV lattice steel structure proposed for Segment 6 at the Mill Creek Summit, it would not encroach directly on the PCT or the PCT feeder trail from the trailhead parking area, and would not require relocation of the PCT or feeder trail trailbeds. Because it would not be practicable to locate the new tower elsewhere, and a trail reroute should not be necessary, ANF Standard S1 is still upheld and a Project-specific Forest Plan amendment would not be required. However, in an effort to help protect the scenic integrity of the PCT as much as possible, SCE and the FS have agreed that at this particular tower site, the existing vegetation around this tower and along the PCT, for the most part, shall not be cleared and will be preserved to the greatest degree possible without violating GO-95 Rule 35. The only sections that should be cleared of vegetation for operation and maintenance at this specific tower site are the area directly underneath the base of the new tower and the immediate space adjacent to FS Road 3N17 and the new tower (STR 34 M7-T2)

Segment 6 also would be visible in the foreground from the Upper Big Tujunga Canyon Road, Angeles Crest Scenic Byway (also known as the Angeles Crest State Scenic Highway), and the Rincon-Red Box OHV Trail. Segment 6 would be visible in middleground from Vetter Mountain Lookout, the San Gabriel River National Scenic Bikeway at Cogswell Reservoir, Silver Fish Trail, and Upper Creek Winter Trail. This would create adverse visual impacts including reductions in visual quality and increased industrial landscape character under Alternative 2. Along the alignment of Segment 6, existing 220-kV and 500-kV lattice steel towers and conductors already do not attain the Desired Condition of natural-appearing landscape character and have lowered the existing visual quality. New, taller, wider 500-kV lattice steel towers and larger conductors would emphasize and augment the industrial landscape character and would lower visual quality further. Scenic integrity levels that would be met by Alternative 2 Segment 6 would be moderate, low, very low, and unacceptably low.

The new single-circuit 500-kV lattice steel towers would range from 85 to 220 feet tall in the Center Area, while existing 220-kV lattice steel towers of Segments 6 and 11 are 20 to 25 percent shorter and narrower. The increased size of these new towers would result in several adverse visual effects. Additional structure height and width of 500-kV structures, as compared to existing 220-kV structures that would be removed, would cause an increase in structural prominence, and create a visible increase in industrial character. As a result, visual quality would be further reduced by unnatural geometric forms and straight lines, and the resulting visual contrast would be very high. The proposed Project would appear to dominate the existing natural-appearing landscape character in, as well as adjacent to, the utility corridor. The new and increased structure height would create additional intrusions of the foreground, middleground, and background landscapes and would result in a high degree of view interference of high quality landscapes as seen from the KOPs.

Additional structure height also would cause additional structure skylining (towers and conductors extending above the horizon line), particularly for towers where, from some vantage points, the existing shorter structures remain below the skyline or only slightly extend above the horizon line. New taller, wider structures protruding above the skyline or ridgeline would block more of the natural-appearing horizon and impair scenic views in the ANF, as illustrated in Center Area photos/simulations: Figures A-16a/b through A-35a/b (see Appendix A).

Footing work for each LST in the Center Area would generally be completed using standard “poured-in-place concrete” with augured excavation techniques. At the time of construction, footing elevations would be established; rebar cages set, stub angles and concrete placed, and survey positioning would be verified. Typically, on a regular terrain under ideal circumstances, a single footing crew could be expected to excavate,

place steel cages and stub angles, and pour in place concrete for one complete LST every 2 days. A foundation set for each LST would include four footings. The single foundation for a TSP can typically be completed in 3 days.

Where appropriate, feasible, and/or cost-effective, foundations may also be installed utilizing micropiles. Installation of micropiles would require the drilling of several smaller diameter holes (approximately 7-10, 8-inch holes) for each footing, which ultimately would impact a relatively smaller area than conventional footing installations due to the much smaller volume of excavated material. After drilling all the holes, each hole would be flushed with water or air to remove drill cuttings and loose material. Micropiles would then be installed by placing a rebar in each hole with cement grout injected through grout tubes at the lowest point of each micropile, and the hole filled until viscous grout reaches the top of the casing. The micropiles would then be tied together, to act as a single unit foundation, in a reinforced concrete pile cap approximately 4 to 9 feet tall and 1.5 to 6 feet in diameter. Grout could be brought to each tower site dry and mixed at the site, requiring a much reduced amount of concrete required and associated transportation requirements and limitations. Because of the height of the micropiles above the ground surface, visual impacts could occur and would necessitate visual mitigation by use of colored concrete.

Following are descriptions of KOPs in the Center Area relevant to Impact V-3 under Alternative 2. First, analysis of individual KOPs along Segment 6 are presented from north-to-south, followed by analysis of individual KOPs along Segment 11, also presented from north-to-south.

KOP-Center-1 – Southbound Angeles Forest Highway (Segment 6)

KOP-Center-1 (see Figures A-16a&b) was established by the consultant and FS visual analysts and is located on NFS lands along the Angeles Forest Highway, looking south, near the intersection of Mount Emma Road and the Angeles Forest Highway. The proposed Project would replace two existing transmission lines with new, taller 500-kV LSTs in this location and would widen existing access roads to accommodate large construction equipment and movement of structural materials.

Future Scenic Integrity: High, with Areas of Very Low. Removal of vegetation on this flat landscape would be noticeable to travelers on the Angeles Forest Highway and Mount Emma Road, but landform modification would be minimal. This simulation depicts landscape conditions upon completion of construction and before revegetation becomes visually evident. Existing access and spur roads would be re-opened and used for construction of the proposed Project on the hillside to the right. Visual contrasts associated with road widening and improvements (curve widening, etc) would be visually evident in Alternative 2, the proposed Project. Replacement of two existing 220-kV lines with two new 500-kV lines would create new skyline interference in the existing transmission line ROW. The two new transmission lines would add to the visual clutter, and would increase contrast, structural dominance, and view interference of the skyline. These visual changes would create very low scenic integrity for the marshalling yard and the two new transmission lines.

KOP-Center-2 – Northbound Angeles Forest Highway (Segment 6)

KOP-Center-2 (see Figure A-17a&b) was established by the consultant and FS visual analysts on the northbound side of the Angeles Forest Highway that leads towards Lancaster. It is located approximately one-mile north of Mill Creek Summit, headed northbound toward Lancaster and Palmdale. At this location, the proposed Project would replace an existing 220-kV single circuit transmission line with a new, taller 500-kV single-circuit transmission line on LSTs.

Future Scenic Integrity: High, with Areas of Unacceptably Low. SCE's proposed action (Alternative 2, Segment 6) would replace existing 220-kV LSTs with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall and have 96-foot-wide arms holding up the conductors. These large Segment 6 transmission lines would be seen in the foreground and immediate foreground from Mill Creek Summit for several miles to the north, and would achieve unacceptably low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Light gray colors would blend somewhat with the sky, but would create visual contrasts as seen from above, as from the PCT to the south. Access and spur roads leading to each new structure would be screened by topography from this vantage point, and therefore, are not visible in the simulation.

KOP-Center-3 – Mount Gleason Road (Segment 6)

KOP-Center-3 (see Figure A-18a&b) was established by the consultant and FS visual analysts on Mount Gleason Road, about 3 miles west of Mill Creek Summit, looking southeast, down to Segment 6. The existing utility corridor that encompasses Segment 6 is very visible against the dark green, uniform textured, chaparral-covered mountainsides in the Angeles High Country. Existing 220-kV and 500-kV LSTs have a landform backdrop and are barely visible in Figure A-18a, but by connecting the lines created by sunlight reflecting off existing conductors, it is possible to distinguish and locate the transmission line structures. These conductors were specified to be “non-reflective and non-refractive” but in actuality they are quite visually evident during certain lighting conditions, such as shown in this mid-afternoon photograph depicted in Figure A-18a. The proposed Project would replace an existing 220-kV single circuit transmission line with a new, taller 500-kV single circuit transmission line on LSTs.

Future Scenic Integrity: High, with Areas of Very Low. SCE's proposed action (Alternative 2, Segment 6) would replace existing 220-kV LSTs with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, Segment 6 transmission lines, access roads, and spur roads would be seen in the middleground, and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-4 – Southbound Angeles Forest Highway (Segment 6)

KOP-Center-4 (see Figure A-19a&b) was established by the consultant and FS visual analysts on the Angeles Forest Highway, going southbound away from Mill Creek Summit, looking downhill and to the south-southwest. In crossing over Mill Creek Summit, Segment 6 would also traverse the PCT at S6 MP 7.3. Similar to the existing visual impacts that were seen from KOP-Center-3 on Mount Gleason Road, the existing utility corridor that would be upgraded by Segment 6 is very visible against the dark green, uniform textured, chaparral-covered mountainsides in the Angeles High Country. Some of the existing 220-kV and 500-kV LSTs have a landform backdrop but many are situated against the skyline and are very visible in Figure A-19a. Sunlight reflecting off existing conductors and steel lattice towers creates strong visual contrasts. As mentioned before, these conductors were specified to be “non-reflective and non-refractive” but in actuality they are quite visually evident during certain lighting conditions, such as shown in the mid-afternoon photograph depicted in Figure A-19a. This view is typical from Mill Creek Summit, southbound on the Angeles Forest Highway for approximately 2.5-to-3 miles. The proposed Project would replace an existing

220-kV single circuit transmission line with a new, taller 500-kV single circuit transmission line on LSTs.

Future Scenic Integrity: High, with Areas of Unacceptably Low. SCE's proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-foot tall with 96-foot-wide arms. In this area, Segment 6 transmission lines, access roads, and spur roads would be seen in the foreground and middleground, and would achieve unacceptably low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-5 – Northbound Angeles Forest Highway (Segment 6)

KOP-Center-5 (see Figure A-20a&b) was established by the consultant and FS visual analysts on the Angeles Forest Highway approximately 2-air-miles south of Mill Creek Summit, traveling northbound toward the Summit and looking uphill to the northeast. Similar to the existing visual impacts that were seen from KOP-Center-3 on Mount Gleason Road and KOP-Center-4 southbound on the Angeles Forest Highway, the existing utility corridor that would be used by Segment 6 is very visible against the dark green, uniform textured, chaparral-covered mountainsides in the Angeles High Country. Some of the existing 220-kV and 500-kV LSTs have a landform backdrop and are barely visible, but many are situated against the skyline and are very visible as seen in Figure A-20a. Even though the time of day was similar to that for KOPs-Center-3 and 4, in this image sunlight reflecting off existing conductors is not a problem, because the angle of view is different. However, the conductors may, and most likely will, reflect sunlight at some point in time throughout the day. The steel lattice towers create strong visual contrasts when seen against the skyline, and draw attention away from the natural landscape features (see Figure A-20a). This view is typical for northbound travelers for approximately 2.5 miles as they climb toward Mill Creek Summit on the Angeles Forest Highway. The proposed Project would replace an existing 220-kV single circuit transmission line with a new, taller 500-kV single circuit transmission line on LSTs.

Future Scenic Integrity: High, with Areas of Very Low. SCE's proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-foot tall with 96-foot-wide arms. In this area, Segment 6 transmission lines, taller LSTs, and re-opened access/spur roads would be seen in the foreground and middleground, and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-6 – Upper Big Tujunga Canyon Road - Southbound (Segment 6)

KOP-Center-6 (see Appendix A, Figure A-21a&b) was established by the consultant and FS visual analysts on Upper Big Tujunga Canyon Road between Lynx Gulch and Alder Gulch, approximately one mile northwest of KOP-Center-7 and approximately two-air-miles north of the Angeles Crest Scenic Byway. The Segment 6 transmission lines are approximately 0.5 miles away in this view from KOP-Center-6. The proposed Project would replace an existing 220-kV single circuit transmission line with a new, taller 500-kV single circuit transmission line on LSTs.

Future Scenic Integrity: High, with Areas of Very Low. The proposed Project would replace an existing 220-kV transmission line with a new 500-kV transmission in the middle of three parallel lines

in this view. In this area of Segment 6, the proposed Project would construct the new transmission line using re-opened access/spur roads in this vicinity. Segment 6 transmission lines, access roads, and spur roads would be seen in the middleground, and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-7 – Upper Big Tujunga Canyon Road - Northbound (Segment 6)

KOP-Center-7 (see Appendix A, Figure A-22a&b) was established by the consultant and FS visual analysts on the northbound side of Upper Big Tujunga Canyon Road approximately one-air-mile north of the Angeles Crest Scenic Byway, looking north. It is approximately 1.5 miles north and downhill of the intersection of Big Tujunga Canyon Road and the Angeles Crest Scenic Byway. The transmission corridor is very visible along this section of road because the road parallels and crosses under transmission lines in several locations. From this view, new, taller Segment 6 LSTs and conductors would be very visible in the foreground, and they would be very visible in the middleground from the point where they cross over the Angeles Crest Scenic Byway (behind the view of this photograph) and then continue north, as shown in Figure A-22b. Segment 6 also would be visible in the immediate foreground of the Upper Big Tujunga Canyon Road for approximately three miles past the intersection with the Angeles Crest Scenic Byway.

Future Scenic Integrity: High, with Areas of Unacceptably Low. SCE's proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, Segment 6 transmission lines, taller LSTs, and re-opened access/spur roads would be seen in the foreground of this road for approximately 2 miles, and would achieve unacceptably low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-8 – Vetter Mountain Lookout (Segment 6)

KOP-Center-8 (see Appendix A, Figure A-23a&b) was established by the consultant and FS visual analysts at Vetter Mountain Lookout looking southwest toward the Mount Wilson electronic site on the skyline. New Segment 6 LSTs and conductors would be very visible as they would cross over the Angeles Crest Scenic Byway and two middleground ridges. The proposed Project would replace an existing 220-kV single circuit transmission line with a new, taller 500-kV single circuit transmission line on LSTs. A helicopter staging area is proposed by SCE in this vicinity, and it is visible in the center of this simulation.

Future Scenic Integrity: High, with Areas of Very Low. SCE's proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, Segment 6 transmission lines, taller LSTs, re-opened access/spur roads and SCE proposed Fly Yard #6 would be seen in the middleground from Vetter Mountain, and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008, and the Fly Yard is simulated near the existing sewer treatment ponds near Shortcut Station, based on a location designated by SCE. This simulation depicts landscape conditions upon completion of construction and before revegetation becomes visually evident.

KOP-Center-9 – Angeles Crest Scenic Byway (Westbound) & Rincon-Shortcut Trailhead (Segment 6)

KOP-Center-9 (see Appendix A, Figure A-24a&b) was established by the consultant and FS visual analysts on the Angeles Crest Scenic Byway just east of the Shortcut Saddle Area, looking west at the Rincon-Shortcut OHV Trailhead. Existing LSTs and conductors are very visible in this view as they cross over the highway and trail. The Rincon-Shortcut OHV Trail follows the corridor of Segment 6 for approximately seven-air-miles; and new taller LSTs, new conductors, and re-opened spur roads of the proposed Project would be very visible from this OHV Trail.

Future Scenic Integrity: High, with Areas of Very Low. SCE’s proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 6 LST would also have orange and black aviation markers. It would be seen in the foreground of the Angeles Crest Scenic Byway and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads and pulling/splicing areas are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-10 – Angeles Crest Scenic Byway (Eastbound) (Segment 6)

KOP-Center-10 (see Appendix A, Figure A-25a&b) was established by the consultant and FS visual analysts on the Angeles Crest Scenic Byway approximately 1.5 miles west of the Shortcut Saddle Area, at the southern crest of the San Gabriel Mountains. This location was selected to represent middleground views of the new, taller Segment 6 transmission line as seen by people driving up the highway. The proposed Project would replace existing 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Very Low. SCE’s proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 6 LSTs would be taller and wider than the existing LSTs at this location, and some would require orange & black aviation markers. New LSTs and re-opened access/spur roads would be seen in the middleground of this view. Segment 6 would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-11 – Silver Moccasin Trailhead (Segment 6)

KOP-Center-11 (see Appendix A, Figure A-26a&b) was established by the consultant and FS visual analysts on the Angeles Crest Scenic Byway at the Shortcut Saddle Area, looking southwest from the Silver Moccasin Trailhead. The proposed Project in Segment 6 would be very visible from this popular high elevation recreation area. Existing LSTs and conductors are very visible in this view as they cross over the saddle and proceed south along the southwestern border of the San Gabriel Mountain Wilderness, which is situated to the left of the structures. New, taller structures would be more visible than existing shorter, weathered structures.

Future Scenic Integrity: High, with Areas of Unacceptably Low. SCE’s proposed action (Alternative 2, Segment 6) would replace the middle of three existing transmission lines with new 500-kV LSTs in

most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 6 LST would be taller and wider than the existing LST in this view. It would be seen in the foreground of the Angeles Crest Scenic Byway and Silver Moccasin Trailhead and Trail. Segment 6 would achieve unacceptably low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-12 – Cogswell Reservoir & National Scenic Bikeway (Segment 6)

KOP-Center-12 (see Appendix A, Figure A-27a&b) was established by the consultant and FS visual analysts on Cogswell Reservoir Dam, looking west. KOP-Center-12 is located at the west end of the West Fork San Gabriel River National Scenic Bikeway, and just south of the San Gabriel Wilderness. The proposed Project would replace existing 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Low. SCE's proposed action (Alternative 2, Segment 6) would replace existing 220-kV LSTs with new 500-kV LSTs in most of the same footprint areas. New LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 6 LSTs would be taller and wider than the existing 220-kV LSTs and would protrude above the skyline. SCE would use the West Fork National Scenic Bikeway and existing FS Road 2N25.2 for access to Segment 6. Additionally, existing access/spur roads would be re-opened, creating fresh road scars. Segment 6 would achieve low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-13 –Mount Zion (Segment 6)

KOP-Center-13 (see Appendix A, Figure A-28a&b) was established by the consultant and FS visual analysts on Mount Zion looking northeast. Mount Zion is a mountain peak just north of Chantry Flat Picnic Area and Trailhead, which is a popular recreation destination featuring American Disability Act (ADA) accessible facilities at the picnic area and a trail-riding concessionaire under special use permit from the Forest Service. From this vantage point, the tops of 10 existing lattice steel structures are visible to the naked eye; five are very evident on the skyline near the right-center of this view, and others just barely are visible on the skyline to the left of the saddle. The proposed Project would replace existing shorter, weathered 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Moderate. SCE's proposed action (Alternative 2, Segment 6) would replace existing 220-kV LSTs with new 500-kV LSTs in most of the same footprint areas. New LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 6 LSTs would be taller and wider than the existing 220-kV LSTs and would protrude above the skyline. Segment 6 would achieve moderate scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

This concludes the analysis of individual KOPs for Segment 6. Following is the aforementioned north-to-south analysis of KOPs in the Center Area for Segment 11, as relevant to Impact V-3 for Alternative 2.

KOP-Center-14 – Pacific Crest Trail (Segment 11)

KOP-Center-14 (see Appendix A, Figure A-29a&b) was established by the consultant and FS visual analysts on the Pacific Crest Trail (PCT), just north of the Mount Gleason Road and just west of Big Buck Campground, looking north toward two existing parallel transmission lines: a set of 220-kV towers and conductors on the left and a set of 500-kV towers and conductors on the right. The proposed Project in Segment 11 would replace existing shorter, weathered 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Very Low. SCE's proposed action (Alternative 2, Segment 11) would replace existing 220-kV LSTs with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-foot tall with 96-foot-wide arms. In this area, Segment 11 transmission lines, access roads, and spur roads would be seen in the foreground and middleground, and would achieve very low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-15 – Mount Gleason Road (Eastbound) (Segment 11)

KOP-Center-15 (see Appendix A, Figure A-30a&b) was established by the consultant and FS visual analysts on Mount Gleason Road, approximately 0.3-miles east of Camp 16, looking northeast toward the ridgetop and an existing pull-out on the north side of the road. The proposed route for Segment 11 would not traverse this landscape, but would be located approximately 0.3-miles west of this location. However, this KOP is relevant because in this vicinity SCE proposes to construct a helicopter staging area (SCE #1) for the proposed Project.

Future Scenic Integrity: High, with Areas of Unacceptably Low. The proposed Project would utilize this area to construct a large helicopter staging area (SCE Fly Yard #1). There would be a large area of existing vegetation that would be cleared in the immediate foreground of Mount Gleason Road, and the saddle area would be leveled for use as a marshalling yard and Fly Yard. This simulation depicts landscape conditions upon completion of construction and before revegetation becomes visually evident. The future scenic integrity of this foreground landscape would be unacceptably low scenic integrity.

KOP-Center-16 – Angeles Forest Highway (Southbound) (Segment 11)

KOP-Center-16 (see Appendix A, Figure A-31a&b) was established by the consultant and FS visual analysts on the Angeles Forest Highway, approximately 0.25-miles north of the intersection of the Highway and the Lower Big Tujunga Canyon road, looking west toward the skyline and an existing access road that leads to an existing underground water tank that is used for fire-fighting. Although the proposed route for Segment 11 would not traverse this landscape, but instead would be located approximately 0.5-miles west of this location, this KOP was chosen because at this location, there is a proposed helicopter staging area for Alternative 6 (Maximum Helicopter Alternative). However, this site would not be used for the proposed Project (Alternative 2).

Future Scenic Integrity: High, with Areas of Low. The proposed Project would not utilize this site or area for a helicopter staging area or a marshalling yard. Therefore, there would be no change to existing scenic conditions. The majority of this landscape in the Tujunga River Canyon has high

scenic integrity, but this hillside has been modified and currently has low scenic integrity. This low level of scenic integrity would remain unchanged under the proposed Project.

KOP-Center-17 – Angeles Forest Highway (Northbound) (Segment 11)

KOP-Center-17 (see Appendix A, Figure A-32a&b) was established by the consultant and FS visual analysts on the Angeles Forest Highway approximately three miles north of its intersection with the Angeles Crest Scenic Byway. This location was selected to represent middleground and background views of the Segment 11 transmission corridor as seen by people driving north and down into the Big Tujunga Canyon on their way to Palmdale, Lancaster, or the Antelope Valley. The proposed Project would replace existing shorter, weathered 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Unacceptably Low. SCE's proposed action (Alternative 2, Segment 11) would replace the western line (left) of two existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms, which is generally taller and wider than the existing LSTs in this area. New LSTs and re-opened access/spur roads would be visible in the middleground and background of this view. Segment 11 would achieve unacceptably low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads are simulated based on Road Permit Plans provided by SCE in August 2008.

KOP-Center-18 – Clear Creek Outdoor Education Camp (Segment 11)

KOP-Center-18 (see Appendix A, Figure A-33a&b) was established by the consultant and FS visual analysts on a nature trail just west of the Clear Creek Outdoor Education Camp. This camp is operated by the Los Angeles Unified School District under special use permit from the Forest Service. This location was selected to represent foreground, middleground, and background views of the Segment 11 transmission corridor as seen by students hiking on the nature trail down into Clear Creek, a tributary of Big Tujunga Creek. This view, looking northwest, is typical of the view for approximately ¼-mile along this trail before it crosses under the existing transmission lines. The proposed Project would replace existing shorter, weathered 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High, with Areas of Low. SCE's proposed action (Alternative 2, Segment 11) would replace the western line (left) of two existing transmission lines with new 500-kV LSTs in most of the same footprint areas. New 500-kV LSTs would be 85-to-220-feet tall with 96-foot-wide arms. In this area, the new Segment 11 LSTs would be taller and wider than the existing LSTs in this view. New LSTs would be extend above the skyline and become visible in this view. Because of the increased height and new materials, Segment 11 would achieve low scenic integrity in an otherwise predominantly natural-appearing existing landscape character. Access and spur roads would not be visible from this vantage point.

KOP-Center-19 – Gould Substation from Angeles Crest Scenic Byway (Segment 11)

KOP-Center-19 (see Appendix A, Figure A-34a&b) was established by the consultant and FS visual analysts and is located adjacent to the Angeles Crest Scenic Byway in a paved pullout and overlook, approximately 0.5 mile north of the Gould Substation, looking south toward downtown Los Angeles. This location was selected to represent middleground views of the Segment 11 transmission corridor and the existing Gould Substation, as seen by people driving downhill on the highway or stopped at

this developed pullout. The proposed Project would replace existing shorter, weathered 220-kV LSTs with new, taller 500-kV single circuit LSTs.

Future Scenic Integrity: High (on NFS Lands). SCE's proposed action (Alternative 2, Segment 11) would construct a new 500-kV transmission line around the north and east side of Gould Substation. The only visible change in this simulation, provided by SCE, is one 500-kV LST that would be constructed and it is located on non-NFS lands near the substation and just south of the Forest boundary. Access and spur roads were not shown in this simulation that was prepared by SCE.

KOP-Center-20 – Forest Road to Millard Campground (Segment 11)

KOP-Center-20 (see Appendix A, Figure A-35a&b) was established by the consultant and FS visual analysts on the Chaney Trail, leading to the Millard Campground just north of the City of Altadena, looking west. This location is approximately 0.5 miles north of and inside the ANF boundary. This location was selected to represent immediate foreground views of the Segment 11 transmission corridor along this recreation road and trail. Two existing double-circuit 220-kV transmission structures are evident from this vantage point in the landscape; the LST on the left has an unused position on the right side of the tower, where no insulators or conductors are located. In this portion of Segment 11 from the Gould Substation to the Mesa Substation, new insulators would be hung on the vacant positions of these existing 220-kV double-circuit towers and new conductors would be strung.

Future Scenic Integrity: High, with Areas of Unacceptably Low. In this portion of Segment 11, and for all areas from the Gould Substation to the Mesa Substation, new insulators would be hung on the vacant positions of these existing 220-kV double circuit towers and new conductors would be strung. The only visible change would be new insulators and conductors on existing LSTs. Access and spur roads are not visible from this vantage point.

Indirect Effects

Under Alternative 2, no indirect effects of Impact V-3 would occur in the Center Area.

South Area

Potential visual impacts resulting from the proposed Project's construction and operation in the South Area would be experienced by thousands of people from a multitude of vantage points, including freeways, highways, collector streets, local streets, county roads, parks, trails, greenways, schools, hospitals, memorial parks, shopping centers, commercial areas, manufacturing areas, and numerous residential neighborhoods. Existing high-voltage transmission line structures are some of the tallest structures in the South Area, and in some locations these structures are visible against the horizon, towering over rooftops and treetops, or situated along skyline ridges where they are even more visible.

In the South Area, several different tower structure types are proposed under Alternative 2, including single-circuit 500-kV lattice steel towers, double-circuit 500-kV lattice steel towers, double-circuit 500-kV tubular steel poles, and double-circuit 220-kV lattice steel towers. All of the proposed structures would be taller than existing structures that would be removed and replaced. In almost all occurrences, the new replacement structures would be 1 to 2.5 times taller than the existing structures that would be removed. Alternative 2 would lead to an increased industrial landscape character and a decrease in visual quality throughout the South Area.

Landscape character varies widely in the South Area, with the actual ROW of Segments 11, 7, and 8 having an existing industrial landscape character because of the existing transmission lines. However, adjacent landscape characters range widely and include (but are not limited to) undeveloped open space, plant nurseries, parklands, memorial parks, single-family residential areas, gravel quarries, oil fields, commercial areas, and light industrial uses [refer to Section 3.9 (Land Use) of the EIR/EIS and EIR/EIS Appendix A, Figures 3.9-3a to 3.9-3i, which present existing land uses within 0.5 mile of the proposed Project].

Segment 11 in the South Area would add a new 220-kV circuit (three 220-kV conductors in a vertical array) onto the vacant side of existing 220-kV double-circuit lattice steel towers from the Gould Substation to the Goodrich and Mesa Substations. It is expected that the largest adverse visual impact of this portion of Segment 11 in the South Area would be the presence of equipment and the labor necessary for the stringing and pulling of these new conductors onto existing lattice steel towers (Impact V-1). Because no new lattice steel structures would be built for Segment 11 in the South Area, it is expected that the visual impacts of operation and maintenance of this portion of Segment 11 would remain unnoticed (see Appendix A, Figure A-35a and A-35b for KOP-Center-20).

Segment 7 would extend from the ANF boundary to the existing Mesa Substation and would remove existing, short, single-circuit 220-kV lattice steel towers and replace them with taller, wider, double-circuit 500-kV lattice steel towers and tubular steel poles. Segment 7 would be seen from numerous residences and residential streets, golf courses, parklands, a shopping center, neighborhood streets, Interstates 10, 210, and 605, and Highway 60.

Segment 8 would extend from the existing Mesa Substation on the west to the existing Mira Loma Substation on the east, and is divided into three subsegments: Segments 8A, 8B, and 8C. Segment 8A would construct approximately 35.2 miles of new 500-kV transmission line on double-circuit lattice steel towers and double-circuit tubular steel poles. Segment 8B would construct approximately 6.8 miles of new double-circuit 220-kV transmission line (75 to 115 feet tall) replacing an existing 220-kV transmission line on single and double-circuit structures. All of Segment 8 would remove these existing short 220-kV lattice steel towers and replace them with taller, wider, 500-kV double-circuit lattice steel towers and tubular steel poles, mostly in existing ROW. However, Segment 8 would require new ROW in the following locations, as discussed above under Impact V-2:

- Rose Hills Memorial Park ROW relocation (existing: 1.1-mile, 200-foot-wide; future: 1.4-mile, 240-foot-wide) (Discussed above, under Impact V-2.)
- Hacienda Heights ROW expansion (existing: 2.15-mile, 150 to 230-foot-wide; future: 250 to 330-foot-wide) (Discussed here under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)
- Fullerton Road new ROW (existing: none; future: 0.4-mile, 100-foot-wide) (Discussed here under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)
- Ontario (near Mira Loma Substation) ROW expansion (existing: 0.45-mile, 100-foot-wide; future: 250-foot-wide) (Discussed here under Impact V-3 because there are existing transmission lines adjacent to the expanded ROW.)

The Hacienda Heights ROW expansion widens an existing ROW for a length of 2.15 miles, from an existing width of 150 to 230 feet wide to a future width of 250 to 330 feet wide. Because there are existing transmission line facilities in this ROW, visual impacts will be discussed in subsequent sections of this analysis. In the Fullerton Road area, a new ROW would be required for 0.4 mile, and it would be 100 feet-wide. Both of these areas are discussed in Section 2.3, under KOP-South-10, and are displayed in Figures A-45a and A-45b (see Appendix A). The Ontario ROW expansion near Mira Loma Substation would expand an existing ROW from 100 feet wide to 250 feet-wide near the Mira Loma Substation. Because there are existing transmission line facilities in this ROW, visual impacts will be discussed in subsequent sections of this

analysis. See Section 2.3 under KOP-South-20, and Figures A-55a and A-55b (see Appendix A). Segment 8 would be visible from numerous residences and residential streets, parklands, a cemetery, the Orange Freeway (State Highway 57), fairgrounds on Edison Avenue, light manufacturing and commercial areas, and rural and agricultural areas.

The new double-circuit 500-kV lattice steel towers of Segments 7 and 8 would be 147 to 262 feet tall, and tubular steel poles would be 195 to 200 feet tall in the South Area, while existing 220-kV lattice steel towers associated with Segments 7 and 8 are much shorter and narrower, as shown in the photos and simulations in Appendix A. The increased size of these new towers would result in several adverse visual effects. Additional structure height and width of 500-kV structures, as compared to existing 220-kV structures that would be removed, would cause an increase in structural prominence, and create a visible increase in industrial landscape character. As a result, visual quality would be reduced by contrasting geometric forms and straight lines; therefore the resulting visual contrast would be high. The proposed Project would appear to dominate the existing landscape character(s) adjacent to the utility corridor, and the new increased industrial character would visually extend further into neighboring lands. The new and increased structure height would create additional obstruction of the foreground landscapes, and in some cases views to middleground and background landscapes, and would result in a high degree of view blockage.

Additional structure height also would cause additional structure skylining (towers and conductors extending above the horizon line), particularly for towers where, from some vantage points, the existing 220-kV structures remain below the skyline or only slightly extend above the horizon line. New 500-kV structures that protrude above the skyline would block more of the horizon and impair scenic views. Increased tower height would also raise the conductors such that more of the background landscapes in the South Area (San Gabriel Mountain Range, Hacienda Hills, and Chino Hills) would be visually obstructed, depending on direction of view.

Structure Types and Colors

SCE's APM AES-2 (Transmission Lines - TSPs Near Existing Residential Development) indicates that TSPs would be used in close proximity to existing residential development to provide tower structures that relate visually to the other elements in these settings, with the exceptions of turning tower locations, at long spans, and where LSTs are better suited to match existing structure types adjacent to the transmission corridor.

At turning tower locations, it is possible to use multiple monopoles, H-frame monopoles, or guyed monopoles, instead of LSTs. It may be undesirable to have newer, taller LSTs adjacent to existing shorter, older LSTs. The public has requested monopoles in several communities, including Cities of Ontario, Hacienda Heights, La Habra Heights, and Chino Hills. The PCT Association and LA County Parks also commented on the adverse visual effects of LSTs.

Based on the analysis of the North, Center, and South Areas where new, taller, wider transmission lines would replace existing smaller transmission lines, the Senior Visual Analyst recommends to the CPUC that colored galvanizing treatment should be used in the following locations denoted in Table 6-6, for multiple reasons, including reduction of visual, recreation, and social impacts. This recommendation is similar to APM AES-1, Transmission Lines - Reduce Light Reflection off Towers/Poles and APM AES-2, Transmission Lines - TSPs Near Existing Residential Development, and lists specific areas of special concern, as expressed by public scoping comments and developed from on-site professional expertise.

Table 6-6. In Landscapes That Currently Have Transmission Lines, Locations Where Tubular Steel Poles and Colored Galvanizing Treatments Are Recommended to Improve the Visual Environment

TRTP Segment and Structure Size	Location by Milepost	Galvanizing Treatments and Structure Types
Segment 4 – 220-kV SC	MP 0.0 to 4.0	Light dulled galvanizing treatment on “Y” shaped monopoles, H-frame monopoles, or multiple 220-kV monopoles of TRTP to match light-gray colors of existing and future wind turbine generator (WTG) monopoles of the Tehachapi Wind Resource Area (TWRA).
Segment 7 – 500-kV DC	MP 1.0 to 2.2 (SCE plans to use TSPs from S7 MP 1.2 to 1.7, with LSTs for turns/dead-end structures) MP 10.8 to 15.8	Light dulled galvanizing treatment on TSPs because TSPs are preferred structures in residential areas and parklands. If TSPs cannot carry as much weight and there has to be more TSPs with shorter spans, or H-frame monopoles or multiple monopoles at turning points, it is still an improvement to the visual environment.
Segment 8A – 500-kV DC	MP 2.2 to 5.9 MP 7.1 to 19.2 (Additionally, SCE plans to use TSPs from MP 22.9 to 35.0, with LSTs for turns/dead-end structures)	Light dulled galvanizing treatment on TSPs because 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.
Segment 8B – 220-kV DC	MP 0.0 to 1.3 MP 4.8 to 6.0	TSPs are preferred structures in residential areas and parklands. 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.
Segment 8C – 500-kV DC	MP 4.85 to 5.6	8C is mounted on same structures as 8A in this vicinity

Based on the analysis of the North, Center, and South Areas where new, taller, wider transmission lines would replace existing smaller transmission lines, the Senior Visual Analyst recommends to the CPUC, and the Senior Visual Analyst and the Forest Landscape Architect recommend to the CPUC and FS, that colored galvanizing treatment should be used in the following locations denoted in Table 6-7, for multiple reasons, including reduction of visual, recreation, and social impacts.

Table 6-7. Locations Where Colored Galvanizing Treatments Are Recommended to Improve the Visual Environment

TRTP Segment and Structure Size	Location by Milepost	Galvanizing Treatments and Structure Types
Segment 5 – 500-kV SC	MP 0.0 to 17.8	Light dulled galvanizing treatment on LSTs
Segment 6 – 500-kV SC	MP 0.0 to 1.45 Structure 1 MP 0 Tower 1 (Str-1 M0-T1) through Structure 7 MP 1 Tower 2 (Str-7 M1-T2)	Light dulled galvanizing treatment on LSTs Light dulled galvanizing treatment on TSPs
Segment 6 – 500-kV SC	Structure 8 MP 1 Tower 3 (Str-8 M1-T3) through Structure 18 MP 3 Tower 3 (Str-18 M3-T3)	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-19 M3-T4	Light dulled galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-20 M4-T1 through Str-33 M7-T1	Dark galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Structure 34 MP 7 Tower 2 (Str-34 M7-T2) at the PCT and Mill Creek Summit	Light dulled galvanizing treatment on LST.
Segment 6 – 500-kV SC	Str-35 M7-T3	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-36 M8-T1	Light dulled galvanizing treatment on LSTs 1
Segment 6 – 500-kV SC	Str-37 M8-T2	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-38 M8-T3 through Str-42 M9-T3	Dark galvanizing treatment on LSTs

Table 6-7. Locations Where Colored Galvanizing Treatments Are Recommended to Improve the Visual Environment

TRTP Segment and Structure Size	Location by Milepost	Galvanizing Treatments and Structure Types
Segment 6 – 500-kV SC	Str 43 M9-T4 through Str45 M9-T6	Light dulled galvanizing treatment on LSTs 1
Segment 6 – 500-kV SC	Str-46 M10-T1 through Str-48 M10-T3	Dark galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-49 M11-T1	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-50 M11-T2	Light dulled galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-51 M11-T3	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-52 M11-T4 through Str-71 M16-T2	Dark galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-72 M16-T3 and Str-73 M17-T1	Light dulled galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-74 M17-T2 and Str-75 M17-T3	Medium galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-76 M17-T4 through Str-79 M18-T3	Dark galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-80 M19-T1 through Str-93 M22-T2	Light dulled galvanizing treatment on LSTs
Segment 6 – 500-kV SC	Str-94 M22-T3 through South boundary of ANF	Dark galvanizing treatment on LSTs
Segment 7 – 500-kV DC	MP 0.0 to 1.0	Dark-brown-gray galvanizing treatment on LSTs to blend with dark landscape backdrop
Segment 7 – 500-kV DC	MP 2.2 to 10.8	Light dulled galvanizing treatment on LSTs will blend with the color of the existing LSTs in this corridor.
Segment 8A – 500-kV DC	MP 19.2 to 27.7	Light dulled galvanizing treatment on LSTs
Segment 8A – 500-kV DC	MP 29.75 to 33.3	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	MP 0.0 to 1.5 Structure 1 MP 0 Tower 1 (Str-1 M0-T1) through Structure 6 MP 1 Tower 2 (Str-6 M1-T2)	Light dulled galvanizing treatment on LSTs Light dulled galvanizing treatment on TSPs
Segment 11 – 500-kV SC	Str-7 M1-T3 through Str-12 M2-T4	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-13 M3-T1 and Str-14 M3-T2	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-15 M3-T3 through Str-17 M3-T5	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-18 M4-T1	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-19 M4-T2 and Str-20 M4-T3	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-21 M5-T1	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-22 M5-T2 and Str-23 M5-T3	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-24 M5-T4	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-25 M6-T1 through Str-27 M6-T3	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-28 M6-T4	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-29 M7-T1	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-30 M7-T2 and Str-31 M7-T3	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-32 M8-T1 through Str-40 M9-T6	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-41 M10-T1 through Str-43 M10-T3	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-44 M10-T4 through Str-	Dark galvanizing treatment on LSTs

Table 6-7. Locations Where Colored Galvanizing Treatments Are Recommended to Improve the Visual Environment

TRTP Segment and Structure Size	Location by Milepost	Galvanizing Treatments and Structure Types
	52 M12-T5	
Segment 11 – 500-kV SC	Str-53 M13-T1	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-54 M13-T2 and Str-55 M13-T3	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-56 M14-T1 and Str-57 M14-T2	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-58 M14-T3	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-59 M15-T1	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-60 M15-T2 and Str-61 M15-T3	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-62 M16-T1	Medium galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-63 M16-T2 and Str-64 M17-T1	Dark galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-65 M17-T2 and Str-66 M18-T1	Light dulled galvanizing treatment on LSTs
Segment 11 – 500-kV SC	Str-67 M18-T2	Medium galvanizing treatment on LSTs
Segment 11 – 220-kV DC	MP 18.8 to 36.2	New conductors will be mounted on existing double-circuit 220-kV LST structures. No structure color treatment necessary.

¹ (SCE to provide three (3) samples of material and finish, as well as example of new LSTs constructed with these materials).

Mitigation Measure V-3a (Match spans of existing transmission structures) is similar to and augments APM AES-5 (For Transmission Lines - New Structures Aligned with Existing Structures). Based on the analysis of the North, Center, and South Areas where new, taller, wider transmission lines would replace existing smaller transmission lines, Mitigation Measure V-3a recommends that new structures should match spans of existing 500-kV structures to the extent feasible and practicable, in the following locations denoted in Table 6-8, as this would reduce visual impacts by minimizing visual complexity.

Table 6-8. Locations Where New Structures Are Recommended to Match Spans of Existing 500-kV Structures, to the Extent Feasible and Practicable, to Improve the Visual Environment

TRTP Segment	Location by Milepost	Size of Adjacent Transmission Line
Segment 4 220-kV SC	MP 0.0 to 4.0	220-kV SC
Segment 4 500-kV SC	MP 15.8 to 17.9	500-kV SC
Segment 5 500-kV SC	MP 0.0 to 17.8	500-kV SC
Segment 6 500-kV SC	MP 3.2 to 26.9	500-kV SC
Segment 7 500-kV DC	MP 0.0 to 15.8	500-kV SC
Segment 11 500-kV SC	MP 0.0 to 18.7	220-kV SC

Following are descriptions of KOPs in the South Area relevant to Impact V-3 under Alternative 2.

KOP-South-1 – Royal Oaks/Tocino Intersection, Duarte (Segment 7)

KOP-South-1 was established by SCE and represents views from generally level terrain looking north toward the San Gabriel Mountains along the transmission corridor. Viewers from this KOP include residents with static views from their homes, and pedestrians, bicyclists, and motorists traveling on the area’s streets. This KOP is located within a residential neighborhood immediately adjacent to the transmission corridor, looking north-northeast. Because only non-NFS lands are visible in the view, the VS/VC methodology applies to this KOP. Figure A-36b illustrates SCE’s simulations of the proposed Project as seen at foreground viewing distances from S7 MP 0.0 to S7 MP 1.8.

Overall Visual Change: high. Segment 7 starts at the southern boundary of the ANF, and would replace existing single-circuit 220-kV LSTs with new double-circuit 500-kV LSTs (147-262 feet tall) and new double-circuit 500-kV TSPs (195-200 feet tall) in the same ROW. With high visual contrast, high dominance, and high view blockage/impairment, the overall visual change would be high.

KOP-South-2 – I-605 Corridor Between I-210 & Arrow Hwy, Irwindale (Segment 7)

This KOP was established by SCE and is located just south of the I-210/I-605 interchange, looking south on the southbound I-605 freeway and it represents a typical view for motorists traveling south along this freeway. See Figure A-37b for a simulation prepared by SCE for the proposed Project.

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

KOP-South-3 – Linard Street/Kayann Place Intersection, South El Monte (Segment 7)

This KOP was established by SCE and is located within a residential neighborhood in the southern portion of Landscape Unit 10, in close proximity to the proposed transmission corridor. Figure A-38b for a simulation prepared by SCE for the proposed Project, which would replace two shorter LSTs with one small light weight steel pole and one large double circuit 500-kV LST.

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

KOP-South-4 – Paramount Boulevard, Montebello Hills (Segment 7)

KOP-South-4 was established by SCE on Paramount Boulevard heading east near the Montebello Boulevard intersection. This location represents a foreground view of the transmission corridor for people driving southeast on Paramount Boulevard to North Montebello Boulevard and is similar to other views of the transmission corridor from nearby travelways. Paramount Boulevard is used to access the Montebello Town Center, approximately 0.25 mile downhill to the left (northeast), to connect with San Gabriel Boulevard and to access office park and residential areas to the south. The proposed Project would replace one of three identical existing 220-kV double circuit transmission lines with a line of taller, wider 500-kV double circuit structures (see Appendix A, Figure A-39b, which was prepared by SCE).

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

KOP-South-5 – Montebello Town Center, Montebello Hills (Segment 7)

KOP-South-5 was established by SCE at the main entrance on the southern side of the Montebello Town Center. It represents views that shoppers have as they leave the shopping complex. As they enter the parking area, they see cars and landscaped islands ahead and beyond that, six parallel transmission lines. There are three identical LST lines and three identical TSP lines visible on the skyline. The proposed Project would replace one line of double circuit 220-kV LSTs with a line of new, taller, wider 500-kV double circuit LSTs (see Appendix A, Figure A-40b, prepared by SCE).

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

KOP-South-6 – Legg Lake, Whittier Narrows, L.A. County (Segment 7)

This KOP was established by the visual analyst at Legg Lake Park, on the western shore of the lake, looking southeast toward the proposed Segment 7 transmission corridor. Legg Lake Park is open daily, and affords the general public access to fishing, picnicking, wildlife-watching, and other outdoor recreation. The proposed Project would replace short 220-kV single circuit LSTs (that are effectively screened by existing vegetation) with new, taller, wider double circuit 500-kV LSTs that would be taller than existing trees and would not be visually screened (see Appendix A, Figure A-41b).

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

KOP-South-8 – Colima Road, Hacienda Heights (Segment 8A)

KOP-South-8 was established by SCE from the passenger's seat of a vehicle on Colima Road, just west of the intersection of Hacienda Boulevard. This KOP was selected to represent views for local residents traveling west-southwest on Colima Road into the residential areas north of the transmission corridor. This is a typical streetscape view of a divided four-lane collector street in Hacienda Heights with convenience commercial development at the intersection. A line of existing 220-kV LSTs would be replaced with a line of 500-kV TSPs on the skyline ridge. See Figure A-43b in Appendix A for a simulation prepared by SCE.

Overall Visual Change: low-to-moderate. With ratings of moderate visual contrast, low-to-moderate dominance, and low-to-moderate view blockage/impairment, the overall visual change would be low-to-moderate.

KOP-South-9 – Hsi Lai Buddhist Temple (Segment 8A)

KOP-South-9 was established by the visual analyst at the front entrance steps of the Hsi Lai Buddhist Temple in Hacienda Heights. The Temple is a well-known landmark, notable for its prominence as a spiritual and cultural center and also as a tourist destination. The Temple is open to the public daily. KOP-South-9 was selected to represent typical views to the surrounding landscape and the proposed transmission corridor from the Temple main entrance and steps above the main parking area. A line of existing 220-kV LSTs would be replaced with a line of 500-kV LSTs and TSP, as shown in the simulation. See Appendix A, Figure A-44 b for a simulation of the proposed Project.

Overall Visual Change: high. New TSPs and LSTs would be taller than existing 220-kV LSTs and would protrude above the skyline. With ratings of high visual contrast, high dominance, and high skyline blockage/impairment, the overall visual change would be high.

KOP-South-10 – Pathfinder Park, Rowland Heights (Segment 8A)

KOP-South-10 was established by SCE directly under the transmission lines at Pathfinder Park in Rowland Heights. It was selected because this is a recreational area located adjacent to a large number of residences, and the transmission corridor passes directly overhead. The view is of a grassy area adjacent to picnic tables bordered by decorative trees and walking paths and an access road. Facilities at the park include a recreation center, ball fields, picnic areas with shelters, tennis courts, lawns, and playground. A line of existing 220-kV LSTs would be replaced with a line of 500-kV LSTs on the skyline ridge and proceeding across the park, directly overhead (see Appendix A, Figure A-45b).

Overall Visual Change: high. The new double-circuit LSTs would be taller than existing LSTs, and would interrupt skyline views and dominate the landscape. With ratings of high visual contrast, high dominance, and high view blockage/impairment, the overall visual change would be high.

KOP-South-11 – Orange Freeway (Highway 57), Diamond Bar (Segment 8A)

This KOP was established by SCE and is located on the northbound Orange Freeway (Highway 57), just north of the Orange County/Los Angeles County line. In this location, Highway 57 is designated by the State as an eligible State Scenic Highway from State Highway 90 to State Highway 60 (CALTRANS, 2008). KOP-South-11 represents typical views of the TRTP transmission corridor for motorists traveling through Landscape Unit 16. At this location, new double circuit 500-kV LSTs of TRTP would be very visually evident on the skyline straight ahead of northbound travelers. See Appendix A, Figure A-46b for a simulation prepared by SCE.

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

KOP-South-12 – Crooked Creek Drive, Diamond Bar (Segment 8A)

KOP-South-12 was established by SCE within a residential neighborhood in the western portion of the landscape unit on Crooked Creek Drive, less than 0.75 mile northeast of KOP-South-11, looking south-southeast at the existing transmission line corridor. Existing transmission towers and conductors are present on top of the hill approximately 900 feet to the south-southeast. An existing line of 220-kV single circuit LSTs would be replaced with a line of 500-kV double circuit LSTs. See Appendix A, Figure A-47b for a simulation prepared by SCE.

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

KOP-South-13 – Intersection of Avenida Anita/Avenida Compadres, Chino Hills (Segment 8A)

This KOP was established by SCE and is located within a residential neighborhood adjacent to undeveloped land in Chino Hills, in the western portion of the Landscape Unit 17. Foreground features include the street, sidewalks, houses, parked automobiles, street-lights, planted lawns, shrubs, and trees, with native grasses and shrubs on the skyline hill behind the houses. The existing 220-kV transmission tower and conductors are visible on a low skyline ridge approximately 800 feet to the southwest. The proposed Project would replace an existing line of 220-kV single circuit LSTs with a line of 500-kV double circuit TSPs in this vicinity. See Appendix A, Figure A-48b for a simulation prepared by SCE.

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

KOP-South-14 – Coral Ridge Park, Chino Hills (Segment 8A)

This KOP was established by SCE within Coral Ridge Park, a residential “pocket” park on Eucalyptus Avenue in Chino Hills, looking northeast. The nearest existing 220-kV transmission tower is approximately 250 feet east of this viewpoint, and a second tower is roughly 1,000 feet further to the east. An existing line of 220-kV LSTs would be replaced by a line of double circuit 500-kV TSPs in this vicinity. See Figure A-49b in Appendix A for a simulation prepared by SCE.

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

KOP-South-15 – Cork Drive, Chino Hills (Segment 8A)

KOP-South-15 was established by the visual analyst on Cork Drive, looking west. Cork Street is a north-south street that connects Tupelo Street on the south and Garden Court on the north, all of which is in a residential subdivision north of Chino Hills Parkway. TRTP Segment 8 would occupy the existing transmission corridor through this neighborhood. Existing chain link fences and gates prohibit public use of the utility corridor ROW in this vicinity and therefore, north of Garden Court (and out of view of Figure A-50a from Appendix A) the equestrian trail that was visible from KOP-South-14 continues along a floodway channel. SCE does not own the land for the utility corridor in this location, and private land owners have extended landscaping into the ROW under existing (un-electrified) conductors. The proposed Project would replace a line of existing 220-kV LSTs with a line of double circuit 500-kV TSPs and LSTs. See Figure A-50b in Appendix A for a simulation prepared by the visual analysts.

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

KOP-South-16 – Yellowstone Circle, Chino (Segment 8A)

This KOP was established by SCE and is located within a residential neighborhood in the eastern portion of Landscape Unit 17. Although within the City of Chino, this location is west of Highway 71 and is thus part of Landscape Unit 17. The proposed Project would replace a line of existing 220-kV LSTs with a line of double circuit 500-kV TSPs. See Figure A-51b in Appendix A for a simulation prepared by SCE.

Overall Visual Change: high. Replacing existing single-circuit 220-kV LSTs with double-circuit 500-kV TSPs would create high visual contrast, high dominance, and high view blockage/impairment. The overall visual change would be high.

KOP-South-17 – Edison Avenue at Reuben S. Ayala Community Park, Chino (Segment 8A, 8B, 8C)

This KOP was established by SCE and is located in the central portion of Landscape Unit 18 along Edison Avenue, a four-lane arterial that parallels the existing transmission corridor. Figure A-52a from Appendix A was taken from the exit to the San Bernardino Fairgrounds parking lot, looking east. The existing view from this KOP includes a multitude of overhead electric distribution lines, and two sets of high-voltage transmission lines with LSTs. The nearest high-voltage transmission tower is visible approximately 300 feet to the east-southeast. The proposed Project would place many of these existing transmission lines underground and would create one line of 500-kV double circuit TSPs in their place, with double circuit LSTs at dead-end structure locations. See Figure A-52b in Appendix A for a simulation prepared by SCE.

Overall Visual Change: high and beneficial. Replacing a multitude of existing overhead transmission lines and distribution lines with one double-circuit 500-kV line on TSPs and placing other circuits underground would create high visual change that is beneficial. The overall visual change would be high.

KOP-South-18 – Chipola Court, Chino (Segments 8A, 8B, 8C)

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. The proposed Project would replace existing single-circuit 220-kV LSTs and architectural (Dreyfus) structures with new double-circuit 500-kV LSTs and TSPs for Segment 8A and new 220-kV TSPs for Segment 8B. See Figure A-53b in Appendix A for a simulation prepared by SCE.

Overall Visual Change: high. Replacing existing single-circuit 220-kV LSTs and architectural (Dreyfus) structures with new double-circuit 220-kV TSPs and new 500-kV LSTs and TSPs would create high visual contrast, high dominance, and high view/skyline blockage/impairment. The overall visual change would be high.

KOP-South-19 – Tumbleweed Street, Ontario (Segments 8A, 8B, 8C)

This KOP was established by SCE and is located within a residential neighborhood in east-central portion of Landscape Unit 19. The nearest Dreyfus double-circuit transmission tower situated approximately 700-feet away, to the east-southeast. The transmission corridor that would be occupied by proposed Segment 8 continues to the east with two additional Dreyfus towers. The transmission line would then transition to LSTs at the far edge of the foreground. The proposed Project would replace existing double-circuit 220-kV architectural (Dreyfus) structures with double-circuit 500-kV LSTs and TSPs. From this view, the San Bernardino Mountains are very faintly visible in the background. See Appendix A, Figure A-54b for a simulation prepared by SCE.

Overall Visual Change: high. Replacing existing double-circuit 220-kV architectural (Dreyfus) structures with double-circuit 500-kV LSTs and TSPs would create high visual contrast, high dominance, and high view/skyline blockage/impairment. The overall visual change would be high.

KOP-South-20 – Chaparral Street and Clover Way, Ontario (Segments 8A & 8B)

This KOP was established by SCE and is located within a residential neighborhood in east-central portion of Landscape Unit 19. The existing view includes four lattice-steel transmission towers in the foreground view. The nearest of these is 700 feet to the north-northeast, and it is a dead-end LST with greater visual bulk because of the extra strength needed to change directions of the transmission line. The proposed Project would add another line of 500-kV single -circuit LSTs. See Figure A-55b in Appendix A for a simulation prepared by SCE.

Overall Visual Change: high. The addition of another set of 500-kV single -circuit LSTs would add to the visual clutter of this landscape, and would create high visual contrast, high dominance, and high view/skyline blockage/impairment. The overall visual change would be high.

Indirect Effects

In the South Area, no indirect visual effects would be anticipated to occur.

Mitigation Measures for Impact V-3:

Mitigation measures for Impact V-3 (For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects) include implementation of some Impact V-2 mitigation measures, as indicated below:

- 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-3a Match spans of existing transmission structures.** If the new Project components are adjacent to an existing transmission line, SCE shall, where feasible, match existing structure spacing and spans as closely as possible in order to reduce visual complexity as seen from sensitive receptor locations. All new structures should also match the heights of existing transmission line structures to the extent possible as dictated by variation in terrain and kV-capacity of lines.
- V-3b On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality.** All reasonable efforts shall be made to meet the Scenic Integrity Objectives (SIOs) shown on the SIO Map in the ANF Land Management Plan. SIO adjustments that exceed a drop of more than one SIO level would require a Project-specific amendment to Forest Plan (Part 3) Standards S9 and S10. In order to compensate for the Project's long-term visual impacts to the landscape character and visual quality, including but not limited to impacts to landscape character and visual quality of scenic highway and scenic trail viewsheds, SCE and the Forest Supervisor shall reach a consensus on what is a commensurate amount of restoration, monetary compensation, or landscape character/visual quality improvement.

Environmental Effects of Mitigation Measure V-3b

While Mitigation Measure V-3b is recommended to meet the Scenic Integrity Objectives on NFS lands, this measure may adversely affect other issue areas. The restoration/improvement activities that may be associated with this measure could contribute to greater land disturbance, which may affect biological resources in the activity area. Cultural resources that may be located in the restoration or improvement area may be damaged by these activities. In addition, greater land disturbance could contribute to increased soil erosion, which could potentially affect water quality. Such potential impacts are similar to the effects of other Project activities, and would require the implementation of mitigation measures presented in Sections 3.4 (Biological Resources), 3.5 (Cultural Resources), and 3.8 (Hydrology and Water Quality) of the EIR/EIS.

CEQA Significance Conclusion

Implementation of Mitigation Measure V-2a (Use tubular steel poles instead of lattice steel towers in designated areas) would help make the two new 220-kV lines leading from Cottonwind Substation into the new Whirlwind Substation more visually congruent with planned wind turbines in this area. This would set an architectural style for the future enlarged TWRA and would allow the new Segment 4 structures to blend in with monopoles of existing and future wind turbine generators. Implementation of Mitigation Measures V-2a and V-3a (Match spans of existing transmission structures) in this area would reduce visual impacts and would improve the overall visual environment, and would result in visual effects in the area of the Cottonwind and Whirlwind Substations that are adverse but less than significant.

For Segment 4 from the Whirlwind Substation to S4 MP 15.8 and for all of Segment 5, use of lattice steel towers and implementation of Mitigation Measures 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); V-

2b (Treat surfaces with appropriate colors, textures, and finishes); V-3a (Match spans of existing transmission structures); V-4b (Slope-round and re-contour in areas as prescribed) [on Portal Ridge and Sierra Pelona Ridge]; and V-4d (Dispose of excavated materials as prescribed) would reduce visual impacts to an adverse but less-than-significant level. For Segment 4 from S4 MP 15.8 to the Antelope Substation, because the transmission line would be in the immediate foreground of 110th Street West, implementation of Mitigation Measure V-2a (Use tubular steel poles instead of lattice steel towers in designated areas) would reduce the visual bulk of the new structures, but visual impacts would remain adverse and significant because of the introduction of a new transmission line in the immediate foreground of this road.

For expansion of the Vincent Substation as part of Segment 9, APM AES-23 would provide for an appropriate landscape plan for the area on the west side of the Vincent Substation expansion to screen the equipment from view and blend the substation into the surroundings. To augment this APM, implementation of Mitigation Measure V-2c (Establish permanent screen) around the Antelope and Vincent Substations would help to improve the overall visual environment of these substations and would reduce visual contrasts. Because of the size and scale of the existing Vincent Substation facilities, and its existing industrial character in this rural environment, the substation expansion and newer, taller lattice steel towers leading into and out of the substation will largely go unnoticed, resulting in an adverse, but less than significant visual effect. Introduction of the Whirlwind Substation into the North Area would create adverse but not significant visual impacts.

In the Center Area, removal of older existing 220-kV lattice steel towers and conductors, and construction of new, taller, wider 500-kV lattice steel towers with new, specially treated galvanized steel, would be very noticeable. In general, the existing 220-kV and 500-kV lattice steel towers and conductors create strong contrasts of form, line, color, texture, and scale, and do not meet the High scenic integrity objective or the natural-appearing desired condition that has been adopted in the new Forest Plan. Scenic integrity levels that would be met under Alternative 2 would be moderate, low, very low, and unacceptably low scenic integrity levels, and future landscape character would be industrial instead of natural-appearing. This represents scenic integrity levels that are one, two, three, and four levels below the High SIO and desired conditions that would not be achieved. Implementation of Alternative 2 would either require a project-specific Forest Plan amendment (to lower most of the SIOs throughout the Project corridors and to modify the desired condition in the ROW of Segments 6 and 11), or it would require disapproval of the proposed Project. Amendment of the Forest Plan is discussed in Section 3.9 (Land Use) of the EIR/EIS. Amendment of the Forest Plan to lower the SIOs and modify the desired condition does not reduce the physical impacts to landscape character or visual quality, and implementation of Mitigation Measure V-3b (On NFS lands, provide restoration/ compensation for impacts to landscape character and visual quality) still would be required.

In the South Area, the proposed Project would appear to dominate the existing landscape character(s) adjacent to the utility corridor, and the new increased height of structures would cause the industrial character to visually extend further into neighboring lands. The new and increased structure skylining and additional obstruction of the foreground landscapes, and in some cases views to middleground and background landscapes, would result in a high degree of visual contrast, view blockage, and/or skyline impairment. Additional structure height also would cause additional structure skylining (towers and conductors extending above the horizon line), particularly for towers where, from some vantage points, the existing 220-kV structures remain below the skyline or only slightly extend above the horizon line. New 500-kV structures that protrude above the skyline would block more of the horizon and impair scenic views. Increased tower height would also raise the conductors such that more of the background landscapes in the South Area (San Gabriel Mountain Range, Hacienda Hills, and Chino Hills) would be visually obstructed, depending on view direction.

The goals of Mitigation Measures V-2a and V-2b are to reduce visual impacts in the immediate foreground of 110th Street West in the North Area, select appropriate structure types and heights near residential and recreation areas, and identify exact structure placement in the North, Center, and South Areas through planning and design so that new structures (lattice steel towers or tubular steel poles) would blend into the landscape to the greatest extent possible and with the least impact to landscape character and visual quality. Implementation of all these mitigation measures would reduce Impact V-3 somewhat in the Study Area, but the presence of newer, taller, wider transmission line structures and conductors (in some cases, very tall double circuit structures) would remain a significant adverse visual impact.

As discussed under Impact V-2 above, installation of TSPs is not feasible in all locations. There are various technical constraints that limit the ability to utilize TSPs in some locations. Therefore, the feasibility of constructing TSPs must be determined on a site-by-site basis based on detailed engineering design as well as construction planning. In order to implement Mitigation Measure V-2a, the Lead Agencies will need to determine appropriate and feasible locations for the use of TSPs instead of LSTs. While no final determinations have been made regarding the use of TSPs as visual mitigation, Appendix J of the EIR/EIS describes candidate locations for the installation of TSPs on non-NFS lands (no additional TSPs are recommended for NFS lands). The CPUC, which has approval authority over the Project on non-federal lands, has developed a set of draft guidelines intended to help identify appropriate and feasible locations for the use of TSPs as visual mitigation. These draft guidelines are also provided in Appendix J. Unless the CPUC approves specific locations for the use of TSPs as mitigation, no additional TSPs would be installed as part of the proposed Project.

As also discussed for Impact V-2 above, implementation of Mitigation Measure V-2b (Treat surfaces with appropriate colors, textures, and finishes) would require the Lead Agencies to identify appropriate locations for the use of colored galvanizing treatments, ranging from light to dark, on transmission structures (LSTs and TSPs). Colored galvanizing treatments would need to be selected that enable the transmission structures to blend with backgrounds (typically landforms and sky) as seen from sensitive viewing locations. Unless the Lead Agencies approve colored galvanizing treatments for individual structures or specific groups of structures, SCE's standard galvanizing treatment, which is light gray in color, would be used by default. Appropriate colored galvanizing treatments will be determined through the development and review of the Structure Type and Treatment Plan called for in Mitigation Measure V-2b. This Report primarily recommends the use of colored galvanizing treatments on NFS lands.

While the mitigation measures described above would reduce the effects of Impact V-3 along portions of the Project route, visual impacts to 110th Street West, a Priority 2 Los Angeles County Scenic Highway and the Angeles Crest Scenic Byway (SR2 – a State scenic highway), as well as the impacts from increased tower heights in the South Area, would remain significant and unavoidable (Class I).

Impact V-4: Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality.

This impact deals with all vegetative clearing and all earthwork that might be expected to occur with implementation of the Project, including the following locations: access roads, spur roads, access trails, spur trails, pulling/splicing locations, marshalling yards, helicopter staging areas (large, medium, and small), LST and TSP structure locations, substations, and ancillary facilities. This impact also deals with vegetative clearing and/or vegetative management along the ROW.

Aesthetic APMs 8 through 14 address the visual effects of vegetative clearing and/or earthwork associated with road improvements, pulling/splicing locations, marshalling yards, and laydown areas. These Aesthetic APMs were considered in the analysis of the proposed Project. However, the Aesthetic APMs are general in nature and are not location-specific. The following discussion addresses vegetative clearing and/or earthwork associated with the proposed Project in specific places, and is subdivided into North, Center, and South Areas.

General Order-95 (GO-95 – Rules for Overhead Electric Line Construction) specifies requirements for all overhead electric transmission lines in California (CPUC, 2009). Rule 35 specifies minimum clearances between energized conductors and vegetation. In the TRTP Draft EIR/EIS, Section 2.2.13 Operations and Maintenance describes the typical vegetation management practices that SCE expects to implement. Vegetation management includes pruning and removal of trees, where only those trees that require trimming before the next planned trim cycle would be pruned. Pruning shall achieve clearance requirements plus one year's growth at time of trimming. Tree removal is the preferred method of vegetation management; however, consideration is given with respect to growth rates, species, environmental and regulatory constraints, property owner approval, and budgetary allowances. Vegetation clearances shall comply with regulations included in GO-95 Rule 35 and related appendices and the required clearances specified in the California Public Resources Code, Section 4292. Within the ANF it is assumed an approximately 20-foot radius from each tower footprint would be kept clear of vegetation. Herbicides nationally approved by the Forest Service would be used within the ANF for control of invasive species, subject to all applicable laws and regulations.

North Area

All of Segment 10 and a portion of Segment 4 would be constructed in a new ROW where there is no existing transmission line; therefore, new access and spur roads would be built to each structure location, splicing location, and pulling location. All of these activities would involve vegetative clearing and earthwork modification for the access and spur roads, as well as vegetative clearing and earthwork modification for structure placement and conductor splicing and stringing.

For Segment 10, vegetative clearing and earthwork to construct new access and spur roads and structure pads in the uniform brushfields of the Mojave Desert would adversely affect the existing natural-appearing and rural landscape character. New access and spur roads tend to follow the linear nature of the transmission line, not necessarily the natural contours of the landscape, and the combination of vegetative clearing, earthwork cuts and fills, and transmission line structures and conductors creates unnatural linear patterns in the landscape.

All of Segments 4 and 5 (except S4 MP 15.8 to S4 17.9) would be constructed in existing corridors or alongside existing transmission lines which have existing access and spur roads. Therefore, vegetative clearing and earthwork grading would be minimal for these two Segments of TRTP, and there would be no substantial changes in existing landscape character and visual quality.

Center Area

There are existing access and spur roads in the Center Area that follow most of Segments 6 and 11 that service some existing transmission structures, and some existing structures are isolated and accessible only by helicopter or foot travel. Many of these existing access and spur roads have not been maintained for years, reportedly as much as 15 to 25 years, according to SCE employees (Susan J Nelson, 2007). Many of the access and spur roads, especially along portions of Segment 11, have cut-slope failures and fill-slope failures that have narrowed the access roads substantially and would make physically impossible to drive large trucks hauling structural members of new LSTs. Potential visual impacts resulting from vegetative clearing and earthwork modification to allow access for large equipment would be substantial in the Center Area because

natural revegetation has occurred along and on these access and spur roads, beginning the process of landscape restoration and visual rehabilitation. Furthermore, the existing corridors that contain Segments 6 and 11 in the Center Area already do not meet the High SIO or the natural-appearing Desired Condition designated in the Forest Plan. Re-opening access roads and spur roads, in general, would not achieve the Desired Condition of natural-appearing landscapes in the ANF and would not meet the High scenic integrity objectives described in the Forest Plan because new vegetative clearing and earthwork would reverse the natural revegetation that has already occurred and would increase road cut scars by creating soil color contrasts and vegetation/bare earth texture contrasts, thereby further decreasing scenic integrity and visual quality. Increased Off Highway Vehicle (OHV) use is likely to occur on re-opened/widened access roads and re-opened/re-constructed spur roads. Increased OHV use in the ANF would thereby increase the potential for increased illegal OHV use, soil erosion, wildlife harassment, and additional visual scars in the landscape.

Construction of Segment 6 at Mill Creek Summit would entail replacement of an existing 220-kV LST with a 500-kV LST in the same general location. The new structure would be located immediately within the viewshed and foreground of the PCT, PCT feeder trail, and PCT trailhead at Mill Creek Summit. Based on site investigations and preliminary engineering by SCE, it would not be practicable to locate the new tower anywhere else other than in the immediate location of the existing 220 kV tower, but SCE has indicated that despite the increased size of the 500-kV lattice steel structure proposed for Segment 6 at the Mill Creek Summit, it would not encroach directly on the PCT or the PCT feeder trail leading to and from the Mill Creek trailhead parking area, and would not require relocation of the PCT or the feeder trail trailbeds. Because it would not be practicable to locate the new tower elsewhere, and because a trail reroute should not be necessary, ANF Standard S1 is still upheld and a Project-specific Forest Plan amendment would not be required for this LST construction. However, in an effort to help protect the scenic integrity of the PCT as much as possible, SCE and the FS have agreed that at this particular tower site, the existing vegetation around this tower and along the PCT, for the most part, shall not be cleared and will be preserved to the greatest degree possible without violating GO-95 Rule 35. The only areas that should be cleared of vegetation for operation and maintenance at this specific tower site is the area directly underneath the base of the new tower and the immediate space adjacent to FS Road 3N17 and the new tower (STR 34 M7-T2).

Under Alternative 2, 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 from Cogswell Dam uphill to the west in order to access Segment 6. Use of this road and construction of Segment 6 are simulated at KOP-Center-12 (see Figure A-27a/b). The use of the National Scenic Bikeway and FS Road 2N25.2 would alter the existing visual environment by the presence of multiple occurrences of heavy equipment and personnel driving on these roads. Because of the size and weight of these construction vehicles, it can be anticipated that some damage would occur to the pavement, and certain narrow areas of roadway along the creek may need to be widened for large construction vehicles, thereby further altering the visual environment.

Under Alternative 2, SCE would use the existing Mount Gleason Road, going west from Mill Creek Summit to access Segment 11 in the vicinity of Camp 16, SCE would be required to maintain the pavement in good condition. Approximately 0.3-miles east of Camp 16, 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. Visual impacts of this helicopter staging area are simulated at KOP-Center-15 (see Figure A-30a/b).

Under Alternative 2, SCE would reconstruct a washed-out bridge over Fall Creek and re-open FS Road 3N27 to access Segment 11 near MP 12.8. Reconstruction of this road and construction of Segment 11 are simulated at KOP-Center-17 (see Figure A-32a/b).

Recurring maintenance identified in the inspection process would include vegetation management, invasive plant survey and control, wood pole management, insulator washing, insulator replacement, repair of ground wires, tighten/repair of hardware, tighten/replacement of guy wires, and adjustments to switch mechanisms. Vegetation management includes pruning and removal of trees, where only those trees that require trimming before the next planned trim cycle would be pruned. Pruning shall achieve clearance requirements plus one year's growth at time of trimming. Tree removal is the preferred method of vegetation management; however, consideration is given with respect to growth rates, species, environmental and regulatory constraints, property owner approval, and budgetary allowances. Vegetation clearances shall comply with regulations included in GO-95 Rule 35 and related appendices and the required clearances specified in the California Public Resources Code, Section 4292. Within the ANF it is assumed an approximately 20-foot radius from each tower footprint would be kept clear of vegetation. Herbicides, nationally approved by the Forest Service, would be used within the ANF within and along areas of Project disturbance (access/spur roads, laydown and assembly areas, helicopter landing sites, etc.) for control of invasive species, subject to all applicable laws and regulations.

South Area

There are existing access roads and spur roads in the South Area that service Segments 7, 8, and 11, and provide access for maintenance of existing transmission structures. However, for the one occurrence of a new ROW in the South Area at Rose Hills Memorial Park, there are no existing SCE access or spur roads on the skyline ridge, rather existing ridgetop roads are in conjunction with the Puente Hills Landfill, administered by the Puente Hills Landfill Native Habitat Preservation Authority. In this location, construction of new access and spur roads to the two relocated transmission lines might entail additional vegetative clearing and earthwork modifications. Because the landforms are relatively gentle in this location, and because vegetation is generally grasses and low growing shrubs, very little visual contrast would be created. Existing landscape character and visual quality would, however, be greatly affected by the presence of the new and relocated transmission lines on this skyline, with these new access and spur roads, creating an overall industrial character in the landscape, and because of the skyline location, transmission lines would affect two viewsheds, seen from both the north and south.

Vegetative Clearing and/or Earthwork

Based on the analysis of the North, Center, and South Areas where vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality, the Senior Visual Analyst therefore recommends to the CPUC that slope rounding and recontouring should be used in the following locations denoted in Table 6-9, for reduction of visual resource impacts, and perhaps for improved wildlife movement.

Indirect Effects

Under Alternative 2, there would be no indirect visual effects due to the construction, use, and maintenance of access and spur roads in the North, Center, or South Areas.

Table 6-9. Locations Where Slope Rounding and Re-Contouring Are Recommended to Improve the Visual Environment		
TRTP Segment and Structure Size	Location by Milepost	Reasons for Slope Rounding and Re-Contouring
Segment 5 – 500-kV SC	MP 4.4 to 16.5	Rounded landforms of Portal Ridge and Sierra Pelona Ridge are conducive to slope-rounding to create permanent landforms that are natural-appearing. Rounded slopes aid movement of some wildlife, as an additional benefit.
Segment 8A – 500-kV DC	MP 0.0 to 25.6	Rounded landforms of Puente Hills are conducive to slope-rounding to create permanent landforms that are natural-appearing. Rounded slopes aid movement of some wildlife, as an additional benefit.

Mitigation Measures for Impact V-4

V-4a Construct, operate, and maintain the Project using existing access and spur roads where feasible. For non-NFS lands and in locations designated by the CPUC, to protect landscape character and promote visual quality, SCE shall remove existing transmission line towers and conductors using existing and already maintained access roads and spur roads, and shall construct the new transmission line using the existing and already maintained network of access roads and spur roads to the greatest practical extent. SCE shall submit plans for any new access roads and spur roads, and any maintenance plans for un-maintained access and spur roads, demonstrating compliance with this measure, to the CPUC for review and approval at least 60 days prior to the start of construction.

For NFS lands, to protect landscape character and promote visual quality, SCE shall use only those access roads and spur roads designated by the FS for that purpose.

For the new LST at Mill Creek Summit, SCE shall maintain vegetative screening as seen from the PCT, trailhead, and PCT feeder trail to the extent feasible and practical and as GO-95 allows. In an effort to protect the scenic integrity along the PCT, SCE and the FS have agreed that for the new LST at Mill Creek Summit, the existing vegetation around this tower and along the PCT, for the most part, shall not be cleared and will be preserved to the greatest degree possible without violating GO-95 Rule 35. The only sections that should be cleared of vegetation for operation and maintenance at this specific tower site is the area directly underneath the base of the new tower and the immediate space adjacent to FS Road 3N17 and the new tower (STR 34 M7-T2).

V-4b Slope-round and re-contour in areas as prescribed. For areas of non-NFS lands where natural terrain includes rounded landforms, where soil types are conducive, and where cuts-and-fills and excavated materials would be visible from sensitive viewing locations, SCE shall employ slope-rounding techniques to blend earthwork with natural contours where feasible. Greater land area would be disturbed by this measure, possibly increasing exposure to soil erosion and possibly causing more vegetation disturbance, but the goal of this measure is a permanent landform that is natural-appearing in the long-term and may be conducive to wildlife movement. During and following re-contouring, applicable mitigation measures of the other issue area sections shall be applied, including biological resources, cultural resources, geology and soils, hydrology and water resources, wilderness and recreation, land use, and possibly agricultural resources. SCE shall submit plans for proposed new, upgraded, or newly maintained access roads and spur roads or structure pads to the CPUC for approval at least 60 days prior to construction.

V-4c Avoid locating new roads in bedrock on NFS lands. Where feasible, re-opened and/or new access road and spur road locations on NFS lands shall be designed to avoid bedrock cuts, and shall be located in soil material to protect landscape character, ensure revegetation opportunities, and

promote visual quality. SCE shall submit road construction plans to the CPUC and FS for review and approval at least 60 days prior to the start of construction.

V-4d Dispose of excavated materials as prescribed. For non-NFS lands, SCE shall dispose of excavated materials (soil, rocks, and concrete, and reinforcing steel) in a manner that is not visually evident and does not create visual contrasts. For NFS lands, SCE shall dispose of excavated materials (excess soil and rocks) in disposal areas (either on-NFS lands or off-NFS lands) as designated by the FS. For NFS lands, the FS will designate whether any footings from existing transmission structures need to be removed. Any designated footings designated for removal (concrete, reinforcing steel, angle steel, anchor bolts, etc.) shall be disposed off-NFS lands in disposal areas that do not create visual contrasts. These sites shall be pre-approved by the CPUC and FS.

Environmental Effects of Mitigation Measures V-4b and V-4d

Mitigation Measures V-4b and V-4d are recommended to minimize the effects of excavated materials on the landscape character and visual quality of the Project area. However, the removal of tower footings (Mitigation Measure V-4d) and proposed slope-rounding techniques (Mitigation Measure V-4b) could contribute to greater land disturbance, which could create several additional impacts to other issue areas. Vegetation removal that would result from earthmoving activities could affect the flora and fauna in the area of disturbance. Greater land disturbance could also contribute to increased soil erosion, which could potentially affect water quality. Cultural resources that could be located in areas to be excavated or re-contoured may be damaged by such proposed activities. In addition, geology-related impacts may be associated with any earthmoving activities that are located in the presence of unstable slopes.

Such potential impacts are similar to the effects of other Project activities, and would require the implementation of mitigation measures presented in Sections 3.4 (Biological Resources), 3.5 (Cultural Resources), 3.8 (Hydrology and Water Quality), and 3.7 (Geology, Soils, and Paleontology) of the EIR/EIS.

CEQA Significance Conclusion

Because analysis of visual impacts associated with the proposed Project indicate that APMs presented in Table 2-6 would not fully mitigate visual impacts associated with construction and operation of the proposed Project, additional measures were developed to augment the APMs and more fully mitigate visual impacts. Implementation of Mitigation Measures 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) would decrease the amount of visual disturbance and would improve the visual environment as compared to the Project without mitigation. The combination of all these measures would lessen the adverse visual impacts of Alternative 2 and would improve the visual attributes of the affected area. However, 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 (Class I).

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

Impact V-5: New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glint and glare in certain lighting conditions.

Aesthetic APMs 1, 3, 4, 15, 18, 19, and 22 address the visual effects of new metal surfaces and materials associated with new transmission infrastructure that could potentially reflect sunlight and produce glare in

certain lighting conditions. Aesthetic APMs 16 and 21 address the visual effects of new lighting sources that could produce light spill or glare. These Aesthetic APMs were considered in the analysis of the proposed Project. The following discussion addresses visual light or glare associated with the proposed Project, and is subdivided into North, Center, and South Areas.

North Area

The new Whirlwind Substation would introduce lighting sources in a portion of this rural landscape where no nighttime lighting currently exists. Implementation of APM AES-21 (Substations - Reduce Glare and Light Spill) would reduce visual impacts of new light sources.

Conductors seen by sensitive receptors from below do not reflect sunlight or cause glare. In fact, conductors appear dark gray or black when seen from below.

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. However, with implementation of APM AES-1 (Transmission Lines - Reduce Light Reflection off Towers/Poles) and Mitigation Measure V-2b (Treat surfaces with appropriate colors, textures, and finishes), it is not anticipated that there would be any substantial daytime glare produced by the new structures.

Center Area

When viewed from higher vantage points, such as a mountain road, a high mountain highway, or a ridgeline or crest trail, sunlight reflecting off or glinting 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. For examples of this visual phenomenon see Appendix A for the existing condition photographs and simulations for the Center Area (Center-KOPs 3, 4, 10, 11, 13, 17, and 18). This reflectivity and sunlight glint or glare seems to be a visual phenomenon mostly occurring in the Center Area, where observers are located above looking down on the transmission lines. This phenomenon does not occur in the North or South Areas, where conductors appear mostly black against the sky when viewed from below or in a nearly horizontal fashion. The galvanizing treatments recommended in APM AES-1 and Mitigation Measure V-2b would help to reduce the glint and glare, although not completely. The treatment of the new structures and conductors may not be enough to completely eliminate 100% of the visual impacts of glint and glare.

South Area

Similar to the North Area, in the South Area new metals for the Alternative 2's lattice steel towers, tubular steel poles, light weight steel poles, and conductors would reflect more sunlight than old, rusted metals. However, with implementation of APM AES-1 (Transmission Lines - Reduce Light Reflection off Towers/Poles) and Mitigation Measure V-2b (Treat surfaces with appropriate colors, textures, and finishes), it is not anticipated that there would be any substantial daytime glare produced by the new structures.

Indirect Effects

Under Alternative 2 there would be no indirect effects associated with Impact V-5 in the North, Center, or South Areas.

CEQA Significance Conclusion

While implementation of APMs AES-18 through AES-22 at the Whirlwind, Antelope, Vincent, Gould, Mesa, and Mira Loma Substation sites would lead to an improved visual environment, as compared to the Project without measures, the resulting nighttime environment would be adversely affected. However, visual impacts would be reduced to a level that is less than significant (Class II) with the following mitigation measure: V-2b (Treat surfaces with appropriate colors, textures, and finishes).

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)

Impact V-6: The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or a scenic trail viewshed.

There are no Applicant Proposed Measures for Aesthetics (APM-AES) that addresses the long-term loss or degradation of a scenic highway viewshed or a scenic trail viewshed. The following discussion addresses potential long-term loss or degradation of a scenic highway viewshed or a scenic trail viewshed, and is subdivided into North, Center, and South Areas.

North Area

In the North Area, there are no scenic highways in Kern County from which Alternative 2 would be seen (United States Bureau of Land Management [BLM], California Desert District. 2007). 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. In the North Area, the proposed Project would cross directly over the PCT at Segment 4 MP 2.7.

Center Area

In the Center Area, the proposed Project would cross directly over the PCT at two locations: Segment 6 MP 7.3; and 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 affected by Alternative 2. The exact location of the lattice steel structure proposed for Segment 6 at the Mill Creek Summit would have to be carefully designed so that it does not encroach upon the PCT feeder trail from the trailhead parking area or on the paved road at the trailhead. Field verification by SCE engineers indicates that the increased size of the footprint of the new LST would not require relocation of the feeder trail trailbed or the PCT trailbed. However, views to the new, taller, wider LST would be very visible in the foreground of the PCT. Because there is no other feasible or practicable location for the transmission line structure at Mill Creek Summit, the Project would not conflict with Forest-specific Design Criteria Standard ANF S1. Therefore, the proposed Project would not require a Project-specific Forest Plan amendment for Design Criteria Standard ANF S1.

The proposed Project's Segment 6 and Segment 11 would cross over the Angeles Crest Scenic Byway 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, with Segment 6 being visible from approximately S6 MP 19 to MP 22. At these crossings of scenic highways, scenic byways, scenic and recreation trails, Segments 6 and 11 would not achieve SIOs of these scenic viewsheds.

Under Alternative 2, SCE would use the West Fork National Scenic Bikeway and FS Road 2N25.2 to access Segment 6 from the San Gabriel Canyon Road (State Highway 39). By using the Scenic Bikeway and FS Road 2N25.2 for construction of Segment 6, SCE equipment and personnel would alter the visual environment of the West Fork San Gabriel River during construction. It is very likely that this recreation trail (single lane paved road used for bicycling, hiking, and fishing access) would be degraded by heavy construction equipment, and it is likely that recreationists would be restricted or prohibited from using this area during construction of Segment 6 for safety reasons (see Recreation Report for further analysis of impacts to recreationists). Use of these roadways for construction would alter the availability of scenic resources for human enjoyment during construction, thereby degrading the visual environment.

South Area

In the South Area in 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.

Indirect Effects

Under Alternative 2 no indirect impacts associated with Impact V-6 would be anticipated to occur in the North, Center or South Area.

CEQA Significance Conclusion

The introduction of new 500-kV transmission lines crossing over scenic highways and trails, and visible within viewsheds of scenic highways and trails, as proposed under Alternative 2, would create a significant impact. Implementation of Mitigation Measure V-3b (On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality) would help to minimize and compensate for the adverse visual effects of these new transmission lines and structures, resulting in adverse but less-than-significant visual impacts (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)

Any Project-related construction or operational activity that would occur within the jurisdictional boundaries of an established Resource Management Plan or Conservation Plan, and that would not be in compliance with such plans, would cause an impact under Criterion VIS-4. Of particular note is the Forest Service’s Land Management Plan (Forest Plan) for the ANF which, for the purposes of this analysis, is confined to the Center Area. In addition, as described in Section 3 and Appendix C, there are local laws, regulations, and standards for the protection and enhancement of visual resources. The majority of these laws, regulations, and standards are managed by city or county governments, and a few are managed by the State Department of Parks and Recreation, which operates in accordance with a General Plan or the State Department of Transportation for scenic highways.

Impact V-7: The Project would conflict with established visual resource management plans or landscape conservation plans.

There are no Applicant Proposed Measures for Aesthetics (APM-AES) that addresses the potential conflict of the Project with established visual resource management plans or landscape conservation plans. The following discussion addresses the potential conflict with established visual resource management plans or landscape conservation plans, and is subdivided into North, Center, and South Areas.

North Area

There are no established Visual Resource Management Plans or Visual Resource Conservation Plans within the North Area that have been identified as being in conflict with the proposed Project. Table C-3 in Appendix C lists applicable local laws, regulations, and standards for visual resources in the North Area.

Center Area

In Appendix C, Tables C-1 and C-2 provide lists of applicable federal and State laws, regulations, and standards for visual resources in the Center Area, which contains all portions of the ANF over which the proposed Project would cross. The ANF is managed by the Forest Service's Land Management Plan (Forest Plan) for the ANF.

Parts 2 and 3 of the Forest Plan provide standards specific for Aesthetic Management (Forest Service, 2005b and 2005c). These standards include scenic integrity objectives (SIOs) that have been designated for all areas of the Angeles National Forest. At a project level, all national forest activities are subject to review of these scenic integrity objectives. For the Project-specific amendment(s) to the 2005 Forest Plan that would be required before this Project could be approved, the SIOs designated in the Forest Plan would not change; however, the Project would be allowed to be constructed without achieving these SIOs within the project ROW.

The following Forest-specific Design Criteria and Place-specific Standards are applicable to the proposed Project:

- ANF S1 - Pacific Crest Trail - Protect scenic integrity of foreground views as well as from designated viewpoints. Where practicable, avoid establishing nonconforming land uses within the viewshed of the trail (Liebre-Sawmill, Santa Clara Canyons, Soledad Front Country and Angeles High Country). (p. 76)
- S9: Design management activities to meet the Scenic Integrity Objectives (SIOs) shown on the Scenic Integrity Objectives Map.
- S10: Scenic Integrity Objectives will be met with the following exceptions: Minor adjustments not-to-exceed a drop of one SIO level is allowable with the Forest Supervisor's approval.
- Temporary drops of more than one SIO level may be made during and immediately following project implementation providing they do not exceed three years in duration.

With regard to visual resources, it is expected that approval of the proposed Project would require Project-specific amendments to the Forest Plan, specifically for Forest Plan (Part 3) Standards 9 and 10. Only with the implementation of these Project-specific Forest Plan amendments would the proposed Project maintain consistency with the Forest Plan with regards to visual resources. No other established visual resource management plans or visual conservation plans have been identified as being in conflict with the proposed Project in the Center Area. Visual impacts would occur and compensatory measures would be required by Mitigation Measure V-3b (On NFS lands, provide restoration/compensation for impacts to landscape character and visual quality).

Within the ANF, Segments 6 and 11 of the proposed Project would replace existing transmission lines located in established utility corridors and require that the existing utility ROWs be widened in certain areas to accommodate the need for larger towers. As described in Table 2-4 and Section 2.1, 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. However, because of lack of use and lack of maintenance, many of these existing access and spur roads have begun the process of landscape restoration and visual rehabilitation through natural revegetation. While this process has begun and the visual condition has improved, the roads do not yet achieve the natural-appearing Desired Condition or High SIO. Re-opening/reconstructing roads that are in the aforementioned conditions to higher road maintenance standards would adversely impact visual resources by removing the natural revegetation, would further degrade existing visual conditions, and would not meet the Natural-Appearing Desired Condition or the High Scenic Integrity Objective. In addition, increased road widths, re-opened access/spur roads, and new spur road construction would likely lead to increased OHV usage in the ANF. Therefore the proposed Project would increase the potential for increased illegal OHV use and the accompanying problems of soil erosion, wildlife harassment, and additional visual scars in the landscape. 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, would further degrade existing conditions, and would not meet the Desired Condition (natural-appearing) or the Scenic Integrity Objective (High). Nonetheless, according to the Commodity and Commercial Uses (Non-Recreation Special-Uses) section of the existing Forest Plan, non-recreation special-uses (including energy projects) are authorized within the ANF when they cannot be reasonably accommodated on non-NFS lands (USDA Forest Service, 2005a).

South Area

The South Area does not include any lands within the ANF or other areas that are within the jurisdiction of the Forest Service; therefore, the Forest Plan, Natural-Appearing Desired Condition, and High Scenic Integrity Objective are not applicable to the South Area.

However, as described in Section 3 and Appendix C, there are State and local laws, regulations, and standards for the protection and enhancement of visual resources. Tables C-2 and C-3 in Appendix C list applicable laws, regulations, and standards for visual resources. The majority of these laws, regulations, and standards are managed by city or county governments, and a few are managed by the State Departments of Parks and Recreation, which operate in accordance with a General Plan. State Scenic Highways are managed by the State Department of Transportation. One Resource Management Plan (RMP) within the South Area is established by the Puente Hills Landfill Habitat Preservation Authority (PHLHPA), which is an established public agency that owns and manages lands within Puente Hills for the purposes of protecting biological diversity and providing opportunities for education and low-impact recreation (SCE, 2007a). The proposed Project would cross through lands managed by the 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 needs to conform to the management goals and objectives identified in the PHLHPA RMP to the degree feasible. 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. PHLNHPA Resource Management Plan Goal Visual-1 states: Protect and enhance views and distinctive landscape features that contribute to the

setting, character and visitor experience of the Preserve. Objective Visual-1.2 states: Protect views from within the Preserve to outlying properties. Evaluate proposed projects surrounding the Preserve with a priority to retain the visual quality of the Preserve's undeveloped landscape (PHLNHPA, 2009).

Indirect Effects

No indirect effects associated with Impact V-7 would occur in the North, Center or South Areas.

CEQA Significance Conclusion

As discussed above, the proposed Project would require Project-specific amendments for Forest Plan (Part 3) Standards 9 and 10. The Project would also conflict with Goal Visual-1 and Objective Visual-1.2 of the Puente Hills Landfill Native Habitat Preservation Authority Resource Management Plan. As such, Impact V-7 would be significant and unavoidable (Class I).

6.2 Cumulative Effects Analysis

A cumulative impact is one that results from the incremental impact of the proposed Project when combined with other past, present, and reasonably foreseeable future actions that occur within the geographic extent of the cumulative visual effects analysis.

6.2.1 Geographic Extent

The geographic extent of the cumulative impacts analysis for visual resources is the same as the extent of the regional setting, as described in Section 2 (Affected Environment). That extent is defined as the viewsheds from which the proposed Project and its alternatives might be seen, including immediate foreground, foreground, middleground, and background viewing distances. This cumulative effects analysis is presented according to the three separate geographic areas (the North, Center and South Areas), as described in Section 2.

6.2.2 Existing Cumulative Conditions

North Area: In the North Area, there are many past projects and activities that have modified the landscape and changed the naturally evolving landscape character. Some of these past activities have adversely affected natural-appearing landscape character and visual quality, including a one-mile grid of roads, Highways 58 and 14, wind farms in the TWRA, scattered rural/agricultural developments, transmission lines, substations, the California Aqueduct, and the communities of Monolith, Rosamond, Leona Valley, Quartz Hill, Lancaster, and Palmdale. The one mile grid of roads in the region provides numerous vantage points from which the landscape easily can be viewed. Agricultural developments include irrigated and dry-crop farming, and irrigated fields have introduced lush green landscapes into the otherwise dry, relatively barren desert environment that was previously covered by creosote bush scrub. Wind farms have introduced motion into an otherwise motionless landscape, and large rotors atop tall monopole and lattice structures attract attention to the wind turbine generators in the TWRA. The newest generation of turbines are much taller than older turbines, and have introduced a massive, sculptural character, albeit industrial in nature. Existing transmission lines cross the North Area in several different directions, including SCE's Antelope-Magunden corridor, Antelope-Vincent corridor, Midway-Vincent corridor, and LADWP's 1,000-kV direct current corridor. All of these corridors contain large, industrial character lattice steel towers and high voltage conductors that have affected the naturally evolving and/or natural-appearing landscape character and visual quality. In addition, the Sagebrush Transmission Line carries wind power from the TWRA to the Vincent Substation on tubular steel

poles, some of which are dark brown corten steel and others near Palmdale are painted white, creating a different kind of visual impact. New residential subdivisions and residential planned developments are occurring in the vicinity of West Lancaster and West Palmdale, and they have dramatically altered existing landscape character and visual quality of the desert environment through the addition of numerous streets, street lights, houses, driveways, vehicles, non-native landscaping, and people. These past and existing projects include Specific Plans and Master Plans, consisting of Willow Springs Specific Plan, Ritter Ranch Master Planned Community, City Ranch Specific Plan (also known as Ana Verde), and Quail Valley Annexation and Development Plan.

Center Area: In the Center Area, there are many past projects and activities that have modified the landscape and changed the naturally evolving landscape character, although most of the Center Area remains natural-appearing in the ANF. Some of these past activities have adversely affected naturally evolving and/or natural-appearing landscape character and visual quality, including the construction of dams, reservoirs, highways, and roads. The Big Tujunga and Cogswell Dams have altered landscape character through the introduction of large water-bodies and large concrete structures into landscapes that generally have no natural lakes. New paved highways have created large cut-and-fill slopes with barren soils, creating adverse color and texture contrasts. Previous timber harvests have altered natural vegetative communities, but generally these past timber harvest activities are natural-appearing and have not created adverse visual impacts. Fire breaks, fuel breaks, and fire suppression activities have created visual scars in the landscape, and large-scale wildfires have changed vegetative communities and resulted in loss of mature forest landscape character and degradation of visual quality. Also within the Center Area, there are several existing high-voltage transmission lines including the Gould-Vincent, La Honda-Vincent, and Antelope-Pardee corridors operated by SCE. The City of Los Angeles Department of Water and Power (LADWP) 1000-kV direct current transmission line corridor is located in San Francisquito Canyon, in the Center Area. These existing high-voltage transmission lines in the Center Area have introduced industrial landscape character features into the naturally evolving and natural-appearing landscapes of the Center Area, and have degraded landscape character and visual quality; additionally, off highway vehicle (OHV) use in designated and undesignated areas has created unnatural appearing lines, soil erosion, and visual scars in the landscape.

South Area. In the South Area, naturally evolving landscapes are almost non-existent, having been replaced by hundreds of years of urban and suburban development in the Los Angeles Basin and Inland Empire. Freeways, highways, streets, commercial, industrial, and residential developments dominate this landscape. However, there are several large tracts of land along Segment 8 that remain relatively natural-appearing, including the Boy Scout Camp lands near Highway 57, Puente Hills Landfill Native Habitat Preserve, Chino Hills State Park (CHSP), and surrounding lands around CHSP.

6.2.3 Reasonably Foreseeable Future Projects and Changes

As discussed above, ongoing development throughout the cumulative effects area for visual resources is dominated by residential developments clustered in and around community developments on non-NFS lands, and also includes additional development of wind resources in the TWRA. As reasonably foreseeable future projects within the Study Area are expected to be characteristic of past and ongoing projects, this trend in wind development and residential development is representative of reasonably foreseeable future projects in the cumulative effects area, as supported by the aggressive population growth and demand for electricity forecasted throughout the Study Area. The types of cumulative projects that are expected to occur in each of the three Areas (North, Center, and South) are described below.

North Area

As previously discussed, the North Area is currently undergoing rapid population growth and development, particularly in and surrounding Lancaster and Palmdale. The Cumulative Scenario presents data regarding population growth in Kern and Los Angeles County; according to this information, the population in Kern County is expected to rise by 113 percent between the years 2000 and 2050. During the same time period, the population in Los Angeles County is expected to rise by varying degrees, depending on the city, with the Cities of Lancaster and Palmdale experiencing growth of 117.5 percent and 186.5 percent, respectively. As such, development and urbanization in the North Area is expected to continue and increase substantially to accommodate the increasing population. Furthermore, it is expected that existing open space areas in the North Area, which are currently either natural-appearing or used for agricultural operations, will be utilized for the construction of residential developments and other city infrastructure. With regards to visual resources, these changes will dramatically alter the current open space landscapes.

Center Area

As with the future non-NFS projects, the past and ongoing USDA Forest Service projects are representative of future Forest Service projects. It is expected that most of these projects are focused on repairs, re-establishment, or rehabilitation of ecosystems and existing facilities. As presented in the Cumulative Scenario, some of the Forest Service projects which are planned or underway in the ANF include the following: Big Tujunga Dam Operation and Maintenance Plan; Hi-Hill Outdoor School Permit Re-issuance; Millard and Big Tujunga Canyon Recreation Tract; Santa Anita Canyon Special Use Cabins; Drinkwater Flat and Rowher Flat OHV Site Improvements; Littlerock Reservoir Sediment Removal Project; Old Highway 99 Re-pavement Project; PCT Bridge Construction at Cooper Canyon; Teresita Pines Organization Camp Construction; and Uppershake Campground Improvements Project. In addition, a variety of fuels reduction activities, which include fire prevention measures, are expected to occur throughout the Forest. These projects indicate a persistence of past and present Forest Service activities to preserve natural resources within the Forest while providing recreational opportunities for the public. Reasonably foreseeable changes to visual resources in the Forest may include improvements to and expansion of existing firebreaks and fuel treatment areas, continued fire suppression activities that impact visual resources, and establishment of additional recreational or administrative facilities. Also it is anticipated that there will be applications for new utilities and new infrastructure projects within the Forest, such as microwave sites, communications sites, pipelines, and transmission lines. It is expected that existing wilderness areas in the Forest will continue to be protected from development and expanded if possible (for instance, through the conversion of an Inventoried Roadless Area under consideration for wilderness designation to a designated Wilderness Area), thereby further protecting visual resources.

South Area

As described above, the South Area is characterized by predominately built-out urban and suburban settings. It is reasonably foreseeable that these settings will persist in the future and may continue as population growth continues. As presented in the Cumulative Scenario, expected population growth in the South Area ranges from about five percent or less (Cities of Industry, La Canada Flintridge, San Marino) to more than 90 percent (City of Ontario), between the years 2000 and 2030. Considering that the area is already highly urbanized, the lower growth projections could be an indication that those areas cannot accommodate further growth, while the higher projections indicate areas that are not yet fully built-out. As urban build-out continues in the South Area, it is reasonably foreseeable that remaining open space areas would either be occupied by development-related infrastructure, or specifically protected by conservation groups and resource agencies such as the

Puente Hills Landfill Native Habitat Authority or CHSP. In addition, it is reasonably foreseeable that the existing undeveloped land within utility corridors (under the transmission lines) will be increasingly utilized for recreational opportunities, such as the River and Mountains Conservancy’s development of the Duck Farm Project, as described in Section 2 (Affected Environment), or as improved landscaped areas, thereby improving visual quality and landscape character.

6.2.4 Cumulative Impact Analysis

Impacts of 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 projects. Table 6-10, below, identifies which impacts of the proposed Project would be cumulatively considerable and of those, what the cumulative significance of each impact would be. Impacts that are not found to be cumulatively considerable would not have an incremental effect on the cumulative scenario.

Impact	Cumulatively Considerable?	Cumulative Significance
V-1: Temporary visibility of construction activities and equipment involved with the Project would alter the landscape character and visual quality of landscape views.	Yes	Class I
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.	Yes	Class I
V-3: For a landscape with an existing transmission line, increased structure size and new materials would result in adverse visual effects.	Yes	Class I
V-4: Vegetative clearing and/or earthwork associated with road improvements and pulling/splicing locations would adversely affect landscape character and visual quality.	Yes	Class I
V-5: New metal surfaces associated with transmission infrastructure would potentially reflect sunlight and produce glint and glare in certain lighting conditions.	Yes	Class I
V-6: The Project would contribute to the long-term loss or degradation of a scenic highway viewshed or scenic trail viewshed.	Yes	Class I
V-7: The Project would conflict with established visual resource management plans or landscape conservation plans.	Yes	Class I

It has been determined that visual resources impacts associated with the proposed Project, as identified in Section 6.1, would be cumulatively considerable and therefore would contribute to cumulative impacts. These impacts include all seven impacts: Impacts V-1 through V-7, listed above in Table 6-10. The potential for cumulatively considerable visual resources impacts of the proposed Project to combine with similar impacts of other projects within the geographic scope of the cumulative analysis are described below.

- **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 the proposed Project would be visible and would attract attention temporarily, as described in Section 6.1 above. As stated above, ongoing development throughout the cumulative effects area for visual resources is dominated by residential developments, clustered in and around community developments on non-NFS lands, and also includes additional development of wind resources in the TWRA. 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 substation in areas that currently do not have such industrial facilities would adversely affect natural-appearing landscape character and visual quality, and added to existing and future wind developments in the TWRA, would be cumulatively adverse and significant. Future residential developments in West Lancaster and West Palmdale could encroach on undeveloped, natural-appearing landscapes in the Project area, further reducing natural-appearing landscape character and visual quality, which would also create cumulatively adverse and significant visual impacts (Class I).

- **In 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, and future transmission lines that may be proposed in the same viewsheds, 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 existing and proposed Project transmission lines in the proposed Project corridors would create permanent visual scars that would be visible and would attract attention, as described in Section 6.1 above. Combined with future transmission lines that may be proposed in the same viewsheds, but in same or different ROWs, the proposed Project 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 existing 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. Combined with the proposed Project, 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).** 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. In the Center Area, no projects in the ANF threaten the viewsheds of the Angeles Crest Scenic Byway, the PCT, Silver Moccasin National Recreation Trail, or West Fork National Scenic Bikeway, except for the proposed Project and/or any of the TRTP alternatives. 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. In the North Area, there are no established Visual Resource Management Plans or Visual Resource Conservation Plans; therefore, existing and future projects would not add cumulative visual effects for Impact V-7. In the Center Area, the majority of Segments 6 and 11 are situated within areas of natural-appearing landscapes designated with a High Scenic Integrity Objective (SIO) by the Forest Plan. 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, further degrade existing conditions, and continue to not meet the Desired Condition or established High Scenic Integrity Objectives. Therefore, Project-specific amendments to the 2005 Forest Plan would be required, as described in Sections 2.1 and 6.1. Future projects that would upgrade the size of transmission lines or maintain/improve access and spur roads would add to adverse cumulative visual effects. In the South Area, the proposed Project and future projects would cross lands administered by the Puente Hills Landfill Habitat Preservation Authority (PHLHPA). The proposed Project would conflict with Goal Visual-1 and Objective Visual-1.2 of the PHLHPA Resource Management Plan. PHLNHPA Resource Management Plan Goal Visual-1 states: Protect and enhance views and distinctive landscape features that contribute to the setting, character and visitor experience of the Preserve. Objective Visual-1.2 states: Protect views from within the Preserve to outlying properties. Evaluate proposed projects surrounding the Preserve with a priority to retain the visual quality of the Preserve's undeveloped landscape. Impact V-7 would be cumulatively adverse and significant (Class I).

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

Implementation of the mitigation measures outlined in Section 6.1 (Direct and Indirect Effects Analysis) would help to reduce the proposed Project's incremental contribution to cumulative visual impacts. However, no

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



Source: SCE, 2007a.

Photo by Lee Anderson



Mitigation Measure V-2b
Treat surfaces with appropriate colors, textures, and finishes

Figure 6-1 (Revised)

Examples of Galvanized Color Treatments