5.0 Comparison of Alternatives

The purpose of an alternatives analysis pursuant to the California Environmental Quality Act (CEQA) is to identify feasible options that would attain most of the basic objectives of a proposed project while reducing its significant effects. Pursuant to Section IX.A.1.e of California Public Utilities Commission (CPUC) General Order 131-D, San Diego Gas & Electric Company (the applicant, or SDG&E) provided an analysis of the South Orange County Reliability Enhancement Project (proposed project) and alternatives as part of their application and Proponent's Environmental Assessment (PEA). After the application was filed, additional alternatives to the proposed project were identified during scoping and by the CPUC's Energy Division as a result of the agency's independent review. This chapter provides comparisons of the environmental advantages and disadvantages of the proposed project to each Alternative considered in this Environmental Impact Report (EIR) (Chapter 3, "Description of Alternatives"). The comparisons are based on the assessment of environmental impacts of the proposed project presented in Chapter 4, "Environmental Analysis," with the environmental impacts of the following alternatives:

- Alternative A: No Project
- Alternative B1: Reconductor Laguna Niguel–Talega 138-kilovolt (kV) Line
- Alternative B2: Use of Existing Transmission Lines (Additional Talega–Capistrano 138-kV Line)
- Alternative B3: Phased Construction of Alternatives B1 and B2
- Alternative B4: Rebuild South Orange County 138-kV System
- Alternative C1: SCE 230-kV Loop-in to Capistrano Substation
- Alternative C2: SCE 230-kV Loop-in to Capistrano Substation Routing Alternative
- Alternative D: SCE 230-kV Loop-in to Reduced-Footprint Substation at Landfill
- Alternative E: New 230-kV Talega–Capistrano Line Operated at 138 kV
- Alternative F: 230-kV Rancho Mission Viejo Substation
- Alternative G: New 138-kV San Luis Rey–San Mateo Line and San Luis Rey Substation Expansion
- Alternative J[1]: SCE 230-kV Loop-in to Trabuco Substation

An Environmentally Superior Alternative is proposed in Section 5.3.

5.1 Comparison Methodology

Specific direction regarding the methodology for comparing alternatives to the proposed project is not provided by the CEQA statute or guidelines. Alternatives must be evaluated in terms of the resource areas impacted by the proposed project. CEQA Guidelines Section 15126.6 states that the alternatives considered in an EIR must avoid or substantially lessen a significant impact of the proposed project. This EIR identified six resource areas for which impacts from the proposed project would be significant and unavoidable (air quality, biological resources, cultural resources, land use and planning, transportation and traffic, and cumulative impacts) and10 resource areas for which impacts would be less than

[1] As described in the Alternatives Screening Report (Appendix B of the Draft EIR), Alternatives H and I were not carried forward to the EIR.

significant with or without mitigation (Chapter 4, "Environmental Analysis" and Chapter 6, "Cumulative Impacts and Other CEQA Considerations").

Resource areas that are generally given more weight in the comparison of alternatives presented in this chapter are those with long-term or widespread impacts. Impacts associated with construction (i.e., temporary or short-term impacts), those that would remain localized, or those that can be easily mitigated to less than significant levels are given less weight. For example, impacts on air quality and transportation and traffic would both be temporary (occur only during construction of the proposed project), but impacts on air quality would not remain localized. Direct mitigation for air pollutant emissions can be difficult to implement and, in some cases, cannot sufficiently reduce impacts. In this chapter, the following methodology is used to compare the environmental impacts of the proposed project and alternatives:

- **Step 1: Identification of Alternatives and Potential Environmental Effects.** A screening process was used to identify a number of alternatives to the proposed project. An Alternatives Screening Report (Appendix B) was prepared during this process that documents the criteria used to evaluate and select alternatives for further analysis, including their feasibility, the extent to which they would meet most of the basic objectives of the proposed project (Section 1.2.1, "Objectives of the Proposed Project"), and their potential to avoid or substantially lessen a potentially significant effect of the proposed project. The potentially significant effects identified for the screening report were defined based on the applicant's PEA and a preliminary review of the proposed project and environmental setting in proposed project area.
- **Step 2: Evaluation of Environmental Impacts.** The list of potential environmental effects identified for alternatives screening purposes (see Appendix B, Table 4, "Summary of Potentially Significant Effects of the Proposed Project") was updated based on site visits, CPUC requests for further information, and further research. Environmental impacts from construction and operation of the proposed project are evaluated by resource area in Chapter 4 of this EIR. The evaluation presented in Chapter 4 is much more detailed than presented in the Alternatives Screening Report and covers more resource areas.
- **Step 3: Comparison of the Proposed Project and Alternatives.** In this chapter, the environmental impacts of the proposed project are compared to those of each alternative, including the No Project Alternative. An Environmentally Superior Alternative is then proposed.

5.2 Analysis of Alternatives

An analysis of the advantages and disadvantages of each Alternative in comparison to the proposed project is presented in this section. Determinations are provided that indicate whether the Alternative would be more or less impactful than the proposed project ~~with respect to resource areas for which a significant and unavoidable impact would occur from construction or operation of the proposed project (i.e., impacts on air quality, biological resources, cultural resources, land use and planning, transportation and traffic, and cumulative impacts)~~. Impacts that would be less than significant without mitigation or for which feasible mitigation exists to reduce the impact to less than significant levels are not the focus of the comparison of alternatives presented. Where the analysis determines that impacts would be similar to the proposed project, the proposed project is selected as environmentally superior for that resource area. Table 5-1 provides a summary of the analysis and determinations.

Table 5-1 Summary of the Alternatives Analyses and Determinations

Resource Area	Proposed Project	Alt. A	Alt. B1	Alt. B2	Alt. B3	Alt. B4	Alt. C1	Alt. C2	Alt. D	Alt. E	Alt. F	Alt. G	Alt. J	Environmentally Superior Alternative
Aesthetics	LTS	Less	Less	Less	Less	Similar	Similar	~~Similar~~Greater	Less	Less	Similar	Greater	Less	—
Agriculture and Forestry Resources	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Greater	Similar	Less	—
Air Quality	**S**	Less	Less	Less	Less	Greater	Less	Less	Less	Less	~~Similar~~Greater	Similar	Less	Alternative J
Biological Resources	~~**S**~~ LTS	Less	~~Similar~~ Less	~~Similar~~ Less	~~Similar~~ Less	~~Similar~~ Greater	Less	~~Less~~ Greater	Similar	Similar	~~Greater~~Similar	Similar	Less	~~Alternative J~~—
Cultural and Paleontological Resources	**S**	Less	Less	Less	~~Similar~~Less	Similar	Similar	Similar	~~Similar~~Less	Less	Less	Greater	Less	Alternative J
Geology, Soils, and Mineral Resources	LTS	Less	Less	Less	Similar	Similar	Similar	Similar	Similar	Less	Greater	Greater	Less	—
Greenhouse Gas Emissions	LTS	Less	Less	Less	Less	Greater	Similar	Similar	Similar	Less	Greater	Greater	Less	—
Hazards and Hazardous Materials	LTS	Less	Less	Less	Less	Similar	Similar	Similar	Greater	Less	Similar	Greater	Similar	—
Hydrology and Water Quality	LTS	Less	Similar	Similar	Similar	Greater	Similar	Greater	Similar	Similar	Similar	Greater	Less	—
Land Use and Planning	~~**S**~~ LTS	Less	Less	Less	Less	Similar	Less	Less	Similar	Less	~~Less~~ Similar	Similar	Less	~~Alternative J~~—
Noise	LTS	Less	Less	Less	Less	Greater	Similar	Similar	Less	Less	Less	Greater	Less	—
Population and Housing	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar	—
Public Services and Utilities	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	~~Similar~~Greater	Similar	Similar	Greater	Similar	—
Recreation	LTS	Less	Similar	Similar	Similar	Similar	Similar	Greater	Similar	Similar	Similar	Greater	Less	—
Transportation and Traffic	~~**S**~~ LTS	Less	~~Less~~ Similar	Less	Less	Greater	Similar	Greater	Less	Less	Less	Greater	Less	~~Alternative J~~—
Cumulative	~~**S**~~ LTS	Less	Less	Less	Less	Greater	Similar	Similar	Less	Less	Less	Greater	Less	Alternative J

Note:
LTS = Less than significant (including impacts that are Less Than Significant with Mitigation)
S = Significant

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The following sections compare the environmental impacts of the proposed project with those of each alternative. Determinations are provided that indicate whether the Alternative would result in greater or lesser impacts than the proposed project. A description of each Alternative is provided in Chapter 3, "Description of Alternatives." Each of the following alternatives are considered to be potentially feasible and would meet most of the basic objectives of the proposed project.

5.2.1 Alternative A – No Project

Under the No Project Alternative, it is assumed that none of the components of the proposed project would be constructed. All of the significant impacts from construction and operation of the proposed project would be avoided. It is anticipated that minor maintenance work would occur as needed to repair or replace failed or inadequate substation equipment and transmission line facilities as described in Chapter 3, "Description of Alternatives." Such maintenance activities are not expected to cause a significant impact as they would be constructed without obtaining a Certificate of Public Convenience and Necessity or Permit to Construct from the CPUC pursuant to CPUC General Order 131-D and CEQA Guidelines Section 15260 et seq. and 15300 et seq. (statutory and categorical exemptions).[2] Work that may require review pursuant to CEQA is not considered part of the No Project Alternative. It follows that none of the mitigation measures included in this EIR to reduce significant impacts to less than significant levels would apply to the No Project Alternative.

Determination

The No Project Alternative would be environmentally superior in comparison to the proposed project. Significant and unavoidable impacts of the proposed project on air quality~~, biological resources,~~ and cultural resources~~, land use and planning, transportation and traffic, and cumulative~~ would be avoided.

5.2.2 Alternative B1 – Reconductor Laguna Niguel–Talega 138-kV Line

Under this alternative, a new double-circuit 230-kV line would not be installed and the San Juan Capistrano Substation would not be constructed. The use of high-capacity conductor would reduce the number of support structures that would be required to be replaced for 138-kV line reconductoring. For the purposes of this EIR, however, it is conservatively assumed that all of the existing 138-kV structures would be replaced along the section of TL13835 between Capistrano Substation and Talega Substation to allow for reconductoring (approximately 45 transmission line poles[3]). No new distribution line structures would be installed under Alternative B1. Under the proposed project, approximately 82 transmission line poles and 10 distribution line poles would be installed. The transmission structures installed under Alternative B1 would be smaller than those installed for the proposed project. They would be designed to support a single circuit of a smaller, 138-kV conductor instead of two circuits of a larger 230-kV conductor. In addition, fewer structures would be removed under Alternative B1 than the proposed project.

[2] A categorical exemption is an exemption from CEQA consideration for a class of projects based on a finding by the California Secretary for Resources that the class of projects does not have a significant effect on the environment (CEQA Guidelines Section 15354). A statutory exemption is an exemption from some or all CEQA considerations or the timing of CEQA consideration as defined by California legislature (CEQA Guidelines Section 15260).

[3] Along proposed transmission line Segments 1b through 3 (Figure 2-1), 42 new transmission line poles are proposed. It is assumed three transmission line poles would be replaced within the Talega Corridor area. To present a conservative comparison of alternatives to the proposed project, it was not assumed that the existing steel structures between Capistrano Substation and the Rancho San Juan residential area could be used for Alternative B1 without replacement.

Accounting for the reduced number of poles to be installed and removed and assuming that the existing Capistrano Substation footprint would remain unchanged, approximately 19 acres[4] of temporary land disturbance would occur for the construction of Alternative B1, which would be approximately 31.2 acres fewer than for construction of the proposed project (50.2 acres; Table 2-8). Alternative B1 would be completed in approximately 45 months instead of 64 months, see Table 2-6. In addition, fewer workers (less than 45 per day instead of up to 80 per day, Section 2.4.1.2) and less equipment would be required for the construction of Alternative B1 than the proposed project.

Aesthetics

Alternative B1 does not include the expansion of the existing Capistrano Substation. Alternative B1 would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative B1 would reduce impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other Habitat Conservation Plans (HCPs) and Natural Community Conservation Plan (NCCPs in the area; similar to the proposed project, impacts under this alternative would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~
Construction and operation of this alternative would occur within the same environmental setting as the proposed project, but would require approximately 62 percent less ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be reduced. Additionally, the temporal length of disturbance would also be reduced under this alternative. However, similar to the proposed project impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative B1 does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative B1 would avoid significant impacts on historic resources when compared to the proposed project.

Land Use and Planning

Alternative B1 does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with local zoning height restriction would not result. Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local

[4] The sum of the temporary disturbance areas listed for installation of the proposed transmission lines in Table 2-8 is 33.7 acres. This assumes that 82 transmission line poles would be installed and 38 would be removed. If only 45 transmission line poles were installed and a similar ratio of transmission line poles were removed, this would equate to approximately 19 acres of land disturbance.

jurisdictions are given consideration by the CPUC during its review process. ~~Alternative B1 would substantially reduce impacts on land use and planning when compared to the proposed project. However,~~ ~~a~~As discussed above under "Biological Resources," ~~this alternative would have significant impacts from conflicts with applicable NCCPs and HCPs in the area. Therefore, impacts on land use under Alternative B1 would remain significant.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

~~Under this alternative, a new double-circuit 230-kV line would not be installed and the San Juan Capistrano Substation would not be constructed. The use of high-capacity conductor would reduce the number of support structures that would be required to be replaced for 138-kV line reconductoring. For the purposes of this EIR, however, it is conservatively assumed that all of the existing 138-kV structures would be replaced along the section of TL13835 between Capistrano Substation and Talega Substation to allow for reconductoring (approximately 45 transmission line poles[5]). No new distribution line structures would be installed under Alternative B1. Under the proposed project, approximately 82 transmission line poles and 10 distribution line poles would be installed. The transmission structures installed under Alternative B1 would be smaller than those installed for the proposed project. They would be designed to support a single circuit of a smaller, 138-kV conductor instead of two circuits of a larger 230-kV conductor. In addition, fewer structures would be removed under Alternative B1 than the proposed project.~~

~~Accounting for the reduced number of poles to be installed and removed and assuming that the existing Capistrano Substation footprint would remain unchanged, approximately 19 acres[6] of temporary land disturbance would occur for the construction of Alternative B1, which would be approximately 31.2 acres fewer than for construction of the proposed project (50.2 acres; Table 2-8). Alternative B1 would be completed in approximately 45 months instead of 64 months, see Table 2-6. In addition, fewer workers (less than 45 per day instead of up to 80 per day, Section 2.4.1.2) and less equipment would be required for the construction of Alternative B1 than the proposed project.~~

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative B1 would be approximately 62 percent below the construction emissions for the proposed project. While Alternative B1 would reduce emissions of reactive organic gas (ROG) to less than significant, Alternative B1 criteria pollutant emissions would still exceed regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative B1 to less than significant. However, similar to the proposed project, PM_{10} and $PM_{2.5}$ emissions from Alternative B1 would remain significant and unavoidable.

Because Alternative B1 does not include expanding the existing Capistrano Substation, the associated significant air quality impact resulting from exceeding the South Coast Air Quality Management District (SCAQMD) local significance threshold (LST) at the 6.4-acre construction site would be avoided.

[5] Along proposed transmission line Segments 1b through 3 (Figure 2-1), 42 new transmission line poles are proposed. It is assumed three transmission line poles would be replaced within the Talega Corridor area. To present a conservative comparison of alternatives to the proposed project, it was not assumed that the existing steel structures between Capistrano Substation and the Rancho San Juan residential area could be used for Alternative B1 without replacement.

[6] The sum of the temporary disturbance areas listed for installation of the proposed transmission lines in Table 2-8 is 33.7 acres. This assumes that 82 transmission line poles would be installed and 38 would be removed. If only 45 transmission line poles were installed and a similar ratio of transmission line poles were removed, this would equate to approximately 19 acres of land disturbance.

However, LSTs would still be exceeded by Alternative B1 at other locations, and impacts would remain significant and unavoidable.

Transportation and Traffic

Under Alternative B1, new conductor would be installed across Interstate 5 (I-5) and State Route 74 (SR-74). Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative B1 than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit~~; however, no full road closure is anticipated~~. Additionally, Alternative B1 does not include the expansion of the existing Capistrano Substation; therefore, the associated partial ~~or full~~ closures of Calle San Diego ~~and Camino Capistrano~~ would not occur. ~~Alternative B1 would avoid significant impacts on transportation and traffic when compared to the proposed project.~~

Cumulative Impacts

Alternative B1 does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative B1 would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

Other Resource Areas

Alternative B1 would reduce impacts on aesthetics, ~~cultural resources,~~ geology and soils, GHGs, hazardous materials, and noise as a result of not expanding the existing Capistrano Substation, avoiding trenching along Via Montana, and construction of fewer facilities within the same transmission corridor compared to the proposed project. However, the proposed project would already have less than significant impacts on these resources. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative B1 would result in fewer impacts on air quality ~~and land use~~ than the proposed project; however, this~~ese~~ impact~~s~~ would remain significant under Alternative B1. Alternative B1 would reduce the proposed project's cultural resources~~, transportation and traffic,~~ and cumulative impacts to less than significant. This alternative would not increase the capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.3 Alternative B2 – Use of Existing Transmission Lines (Additional Talega–Capistrano 138-kV Line)

Under this alternative, the proposed San Juan Capistrano Substation would not be constructed, and it is assumed that the same number of transmission structures that would be installed for Alternatives B1 would be installed for Alternative B2. Although the use of high-capacity conductor would reduce the number of support structures requiring replacement for 138-kV line reconductoring under Alternative B2, it is conservatively assumed that all of the existing 138-kV and 66/69-kV structures would be replaced between Capistrano Substation and Talega Substation.

Under Alternative B2, however, 38 distribution line poles would be installed, and distribution line poles would be removed as proposed for the relocation of 12-kV Circuit 315. This would not be required under Alternative B2. Accounting for the reduced number of transmission line poles to be installed and removed and assuming that the existing Capistrano Substation footprint would remain unchanged, the construction of Alternative B2 would result in approximately 21.5 acres[7] of temporary land disturbance, which would be approximately 28.7 acres fewer than for construction of the proposed project.

Alternative B2 would be completed in less than 36 months (before 2018) instead of 64 months (mid 2020), see Table 2-6. In addition, fewer workers (less than 60 per day instead of up to 80 per day, Section 2.4.1.2) and less equipment would be required for the construction of Alternative B2 than the proposed project.

Aesthetics

Alternative B2 does not include the expansion of the existing Capistrano Substation. Alternative B2 would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative B2 would reduce impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; similar to the proposed project, impacts under this alternative would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~ Construction and operation of this alternative would occur within the same environmental setting as the proposed project, but would require approximately 57 percent less ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be reduced. Additionally, the temporal length of disturbance would also be reduced under this alternative. However, similar to the proposed project impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative B2 does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative B2 would avoid significant impacts on historic resources when compared to the proposed project.

Land Use and Planning

Alternative B2 does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with local zoning height restriction would not result.

[7] The sum of the temporary disturbance areas listed for installation of the proposed transmission and distribution lines in Table 2-8 is 36.7 acres (33.7 acres plus 3 acres). This assumes that 82 transmission line and 38 distribution line poles would be installed. If the same number of distribution line poles were installed but only 45 transmission line poles were installed (assuming a similar ratio of transmission line poles were removed), this would equate to approximately 21.5 acres of land disturbance.

However, similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process.~~Alternative B2 would substantially reduce impacts on land use and planning when compared to the proposed project. However,~~ ~~a~~As discussed above under "Biological Resources," ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, impacts on land use under Alternative B2 would remain significant.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative B2 would be approximately 57 percent below the construction emissions for the proposed project. While Alternative B2 would reduce emissions of ROG to less than significant, Alternative B2 criteria pollutant emissions would still exceed regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative B2 to less than significant. However, similar to the proposed project, PM_{10} and $PM_{2.5}$ emissions from Alternative B2 would remain significant and unavoidable.

Because Alternative B2 does not include expanding the existing Capistrano Substation, the associated significant air quality impact resulting from exceeding the SCAQMD LST at the 6.4-acre construction site would be avoided. However, LST thresholds would still be exceeded by Alternative B2 at other locations, and impacts would remain significant and unavoidable.

Transportation and Traffic

Under Alternative B2, new conductor would be installed across I-5 and SR-74. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative B2 than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit~~; however, no full road closure is anticipated~~. Additionally, Alternative B2 does not include the expansion of the existing Capistrano Substation; therefore, the associated partial ~~and full~~ closures of Calle San Diego ~~and Camino Capistrano~~ would not occur. ~~Alternative B2 would avoid significant impacts on transportation and traffic when compared to the proposed project.~~

Cumulative Impacts

Alternative B2 does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative B2 would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

Other Resource Areas

Alternative B2 would reduce impacts on aesthetics, ~~cultural resources,~~ geology and soils, GHGs, hazardous materials, and noise as a result of not expanding the existing Capistrano Substation, avoiding trenching along Via Montana, and construction of fewer facilities within the same transmission corridor compared to the proposed project. However, the proposed project would already have less than significant

impacts on these resources. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative B2 would result in fewer impacts on air quality and land use than the proposed project; however, thisese impacts would remain significant under Alternative B2. Alternative B2 would reduce the proposed project's cultural resources, ~~transportation and traffic,~~ and cumulative impacts to less than significant. This alternative would not increase capacity of the South Orange Coast 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.4 Alternative B3 – Phased Construction of Alternatives B1 and B2

Because Alternative B1 and B2 may both be constructed under Alternative B3, it is assumed that the same number of transmission and distribution line poles may be installed as for the proposed project along proposed transmission line Segments 1b and 3. Alternative B3 would result in approximately 6.4 fewer acres of land disturbance than the proposed project because Capistrano Substation would not be expanded (Table 2-8) and trenching would not be required along proposed transmission line Segment 2 (approximately 1.1 acres of disturbance).

In addition, no work would be required along proposed transmission line Segment 1a and at Talega Substation. Less work would be required within the Talega Hub/Corridor because the existing lines would not need to be relocated to allow for construction of a new 230-kV line. Work would still be required within the Talega Hub/Corridor, however, to allow for the construction of Alternatives B1 and B2. It is conservatively estimated that at least 16 fewer transmission line structures would be installed under Alternative B3, which would equate to approximately 6.6 fewer acres of land disturbance. Refer to the calculation methodology described for Alternative B1. Hence, Alternative B3 would result in approximately 14.1 fewer acres of land disturbance than the proposed project.

Either Alternative B1 or B2 would be completed in less than 36 months (before 2018) instead of 64 months (mid 2020), see Table 2-6. It is unclear how much time may be required to complete both Alternatives B1 and B2 or when the two alternatives may be operational if both alternatives are constructed. Fewer workers (less than 60 per day instead of up to 80 per day, Section 2.4.1.2) and less equipment would be required for the construction of Alternative B3 than the proposed project.

Aesthetics

Alternative B3 does not include the expansion of the existing Capistrano Substation. Alternative B3 would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative B3 would reduce impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts under this alternative would be considered significant until SDG&E has completed the coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~ Construction and

operation of this alternative would occur within the same environmental setting as the proposed project, but would require approximately 28 percent less ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be reduced. Additionally, the temporal length of disturbance would also be reduced under this alternative. However, similar to the proposed project impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative B3 does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative B3 would avoid significant impacts on historic resources when compared to the proposed project.

Land Use and Planning

Alternative B3 does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with local zoning height restriction would not result. However, similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. ~~Alternative B3 would substantially reduce impacts on land use and planning when compared to the proposed project. However,~~ aAs discussed above under "Biological Resources," ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, impacts on land use under Alternative B3 would remain significant.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative B3 would be approximately 28 percent below the construction emissions for the proposed project. While Alternative B3 would reduce impacts on air quality, Alternative B3 criteria pollutant emissions would still exceed regional significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative B3 to less than significant. However, similar to the proposed project, ROG, PM_{10}, and $PM_{2.5}$ emissions from Alternative B3 would remain significant and unavoidable.

Because Alternative B3 does not include expanding the existing Capistrano Substation, the associated significant air quality impact resulting from exceeding the SCAQMD LST at the 6.4-acre construction site would be avoided. However, LST thresholds would still be exceeded by Alternative B3 at other locations, and impacts would remain significant and unavoidable.

Transportation and Traffic

Under Alternative B3, new conductor would be installed across I-5 and SR-74. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative B3 than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit~~; however, no full road closure is~~

~~anticipated~~. Additionally, Alternative B3 does not include the expansion of the existing Capistrano Substation; therefore, the associated partial ~~or full~~ closures of Calle San Diego ~~and Camino Capistrano~~ would not occur. ~~Alternative B3 would avoid significant impacts on transportation and traffic when compared to the proposed project~~.

Cumulative Impacts

Alternative B3 does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative B3 would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

Other Resource Areas

Alternative B3 would reduce impacts on aesthetics, GHGs, hazardous materials, and noise as a result of not expanding the existing Capistrano Substation, avoiding trenching along Via Montana, and constructing fewer facilities within the same transmission corridor compared to the proposed project. However, the proposed project would already have less than significant impacts on these resources. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative B3 would result in fewer impacts on air quality ~~and land use~~ than the proposed project; however, thi~~se~~s impact~~s~~ would remain significant under Alternative B3. Alternative B3 would reduce the proposed project's cultural resources~~, transportation and traffic,~~ and cumulative impacts to less than significant. This alternative would not increase capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.5 Alternative B4 – Rebuild South Orange County 138-kV System

Under this alternative, substantial construction would occur to reconductor, install new structures, and install new underground conduit along the segments of six 138-kV lines (TL13816, TL13833, TL13834, TL13835, TL13836, and TL13846), see Section 3.2.5, "Alternative B4 – Rebuild South Orange County 138-kV System." New structures and new underground conduit would be installed. In addition, new 138-kV facilities at Capistrano Substation would still be constructed as described for the proposed project. The construction area and total area of disturbance would be larger for Alternative B4 than for the proposed project.

Aesthetics

Alternative B4 does not include the expansion of the existing Capistrano Substation. Alternative B4 would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative B4 would reduce impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine~~

~~conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~ This alternative would require a greater amount of ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be increased. Construction and operation of this alternative would occur beyond the biological environmental setting for the proposed project, which could result in impacts on biological resources not analyzed in this EIR. However, similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative B4 includes the rebuild of 138-kV and 12-kV facilities as described for the proposed project. These components would be located in the western side of Capistrano Substation, which would require the former utility structure (historic site 30-179873) to be partially demolished under this alternative as described for the proposed project. Additionally, the construction of additional subtransmission lines beyond the proposed project would increase the potential to encounter previously unknown cultural resources.

Land Use and Planning

Alternative B4 includes the rebuild of 138-kV and 12-kV facilities as described for the proposed project. Therefore, this alternative would include construction of one 45-foot-tall 138-kV switchgear building as described for the proposed project. Similar to the proposed project, this structure would conflict with local zoning height restrictions (by 10 feet). However, similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. A~~dditionally, as~~ discussed above under "Biological Resources," ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, Alternative B4 would have similar significant impacts on land use as the proposed project.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Air Quality

Alternative B4 would increase the total amount of ground disturbance compared to the proposed project; therefore, the criteria pollutant emissions during construction of Alternative B4 would be greater than the construction emissions for the proposed project. Alternative B4 criteria pollutant emissions further exceed regional significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NOX emissions from Alternative B4 to less than significant. However, similar to the proposed project, ROG, PM_{10} and $PM_{2.5}$ emissions from Alternative B4 would remain significant and unavoidable. Additionally, if Alternative B4 were to disturb more than 58.3 acres (8 acres more than the proposed project) regional significance thresholds for CO_2 would likely be exceeded.

Alternative B4 includes the expansion of the existing Capistrano Substation similar to the proposed project. Therefore, Alternative B4 would result in a significant air quality impact from exceeding the SCAQMD LST at the 6.4-acre construction site. Alternative B4 would further contribute to the degradation of regional air quality and exacerbate significant air quality impacts.

Transportation and Traffic

Under Alternative B4, new conductor would be installed across I-5 and SR-74. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative B4 than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit~~; however, no full road closure is anticipated~~.

However, Alternative B4 includes the expansion of the existing Capistrano Substation; therefore, the associated partial closure~~s~~ of Calle San Diego ~~and Camino Capistrano~~ would occur similar to the proposed project. Additionally, Alternative B4 includes reconductoring of 138-kV transmission lines to the Laguna Niguel Substation, Trabuco Substation, and Pico Substation. This additional reconductoring would likely require additional temporary partial or full road closure or could have increased impacts to I-5 (see Figure 3-2). Alternative B4 would increase significant impacts on transportation and traffic when compared to the proposed project.

Cumulative Impacts

Alternative B4 includes the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano would occur similar to the proposed project. Additionally, as discussed above, Alternative B4 includes reconductoring of 138-kV transmission lines to the Laguna Niguel Substation, Trabuco Substation, and Pico Substation. This additional reconductoring would likely result in additional cumulative impact to other street segments. Alternative B4 would increase the cumulatively significant impact on the performance standards of local roadways.

Other Resource Areas

Alternative B4 would increase ~~biological resources, cultural resources,~~ GHGs, hydrology, and noise as a result of expanding the existing Capistrano Substation and increasing the amount of reconductoring that would occur compared to the proposed project. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative B4 would result in impacts on air quality~~, cultural resources, transportation and traffic,~~ and cumulative impacts that are greater than the proposed project. This alternative would not increase capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.6 Alternative C1 – SCE 230-kV Loop-in to Capistrano Substation

Under this alternative, a new double-circuit 230-kV line segment would not be installed between Talega Substation and a location just south of San Juan Hills High School and the Rancho San Juan residential development. The 230-kV line would be approximately 4 miles shorter than the proposed project. Approximately 31 transmission structures would be installed along transmission line Segments 1a, 1b, and 2 and a short section of Segment 3 (see Table 2-4). This would equate to approximately 12.7 acres of land disturbance compared to the 33.7 acres (Table 2-8) that would be disturbed if the proposed transmission lines were installed (82 transmission structures). Refer to the calculation methodology described for Alternative B1.

It is anticipated that Alternative C1 would be completed in less than 55 months instead of approximately 64 months because the work at Talega Substation, within the Talega Hub/corridor, and along most of transmission line Segment 3 would not be required (Table 2-6). In addition, fewer workers, less helicopter use, and less construction equipment use would be required for the construction of Alternative C1 than the proposed project.

Aesthetics

Alternative C1 include the expansion of the existing Capistrano Substation, which would have similar impacts on aesthetics as the proposed project. Additionally, the 230-kV transmission line between Capistrnao Substation and the loop-in location near San Juan Hills High School under Alternative C1 would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative C1 would have similar impacts on aesthetics compared to the proposed project.

Biological Resources

No new ROW or work within existing ROW located within an existing conservation easement would occur under this alternative. ~~Therefore, Alternative C1 would not conflict with other HCPs and NCCPs in the proposed project area, and impacts under this alternative would be reduced compared to the proposed project.~~ Construction and operation of this alternative would occur within the same environmental setting as the proposed project, but would require approximately 42 percent less ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be reduced. Additionally, the temporal length of disturbance would also be reduced under this alternative. However, similar to the proposed project impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative C1 includes the expansion of the existing Capistrano Substation; therefore, the former utility structure (historic site 30-179873) would be partially demolished as described for the proposed project. Impacts on historical resources under Alternative C1 would remain significant.

Land Use and Planning

As discussed above under "Biological Resources," implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with the SDG&E HCP/NCCP.~~this alternative would reduce conflicts with applicable NCCPs and HCPs in the area. Therefore, Alternative C1 would substantially reduce impacts on land use.~~ ~~However,~~ Alternative C1 includes the expansion of the existing Capistrano Substation. The construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would occur, and conflicts with local zoning height restrictions (by 10 to 15 feet) would result. ~~Therefore, impacts on land use under Alternative C1 would remain significant.~~ However, similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative C1 would be approximately 42 percent below the construction emissions for the proposed project. While Alternative C1 would reduce emissions of ROG to less than significant, Alternative C1

criteria pollutant emissions would still exceed regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative C1 to less than significant. However, similar to the proposed project, PM_{10} and $PM_{2.5}$ emissions from Alternative C1would remain significant and unavoidable.

Alternative C1 includes the expansion of the existing Capistrano Substation similar to the proposed project. Therefore, Alternative C1 would result in a significant air quality impact from exceeding the SCAQMD LST at the 6.4-acre construction site similar to the proposed project.

Transportation and Traffic

Under Alternative C1, a new double-circuit 230-kV line would be installed underground along Vista Montana Road and would cross I-5 and SR-74 as proposed. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. This alternative includes partial ~~and full~~ road closures along Via Pamplona~~,~~ and Calle San Diego~~, and Camino Capistrano~~, similar to the proposed project because trenching activities required to underground the 230 kV line in the vicinity of Via Pamplona and the expansion of the Capistrano would occur similar to the proposed project. Therefore, Alternative C1 would have similar ~~significant~~ impacts on traffic and transportation as the proposed project.

Cumulative Impacts

Alternative C1 includes the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano would occur similar to the proposed project. Alternative C1 would have similar cumulative impacts on the performance standards of local roadways.

Other Resource Areas

~~Alternative C1 would reduce impacts on biological resources and cultural resources as a result of constructing a shorter transmission line than would be constructed for the proposed project. However, the proposed project would already have less than significant impacts on these resources.~~ Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative C1 would result in impacts on air quality ~~and land use~~ that are less than the proposed project; however, this~~ese~~ impact~~s~~ would remain significant under Alternative C1. Alternative C1 would have significant impacts on ~~biological resources,~~ cultural resources~~, traffic and transportation,~~ and cumulative impacts, similar to the proposed project. This alternative would increase capacity of the South Orange County 138-kV system similar to the proposed project because a new 230-kV source to South Orange County would be constructed.

5.2.7 Alternative C2 – SCE 230-kV Loop-in to Capistrano Substation Routing Alternative

Under this alternative, a new double-circuit 230-kV line segment would not be installed between Talega Substation and a location just south of San Juan Creek Road. The 230-kV line would be 4.5 to 5 miles shorter than as proposed. Approximately 18 transmission structures would be installed along transmission line Segment 1a and a section of Segment 1b. The transmission line would be installed in new underground conduit along San Juan Creek Road. This would equate to approximately 7.39 acres of land disturbance compared to the 33.7 acres (Table 2-8) that would be disturbed if the proposed transmission

lines were installed (82 transmission structures). Refer to the calculation methodology described for Alternative B1.

More land disturbance would occur for trenching along San Juan Creek Road (approximately 1 mile) than along Vista Montana Road (approximately 0.35 miles). This would equate to approximately 6.1 acres of land disturbance along San Juan Creek Road under Alternative C2 and approximately 1.6 acres of land disturbance along Vista Montana Road under the proposed project.[8] With the additional 4.5 acres of land disturbance for trenching along San Juan Creek Road, Alternative C2 would still result in approximately 21.8 fewer acres of land disturbance compared to the proposed project. In addition, helicopter use would not be required for the construction of Alternative C2 (refer to the proposed pole sites north of site No. 11 on Figure 2-1). It is anticipated that Alternative C2 would be completed in less than 55 months instead of approximately 64 months because the work at Talega Substation, within the Talega Hub/corridor, and along transmission line Segment 3 would not be required (Table 2-6).

Aesthetics

Alternative C2 include the expansion of the existing Capistrano Substation, which would have similar impacts on aesthetics as the proposed project. Additionally, the 230-kV transmission line between Capistrano Substation and the loop-in location near San Juan Creek Road under Alternative C2 would have temporary impacts on aesthetics during construction and permanent impacts during operations greater than the aesthetic impacts associated with the transmission line for the proposed project as the transmission line would be located in a new ROW. For these reasons, the new transmission structures would introduce new encroaching elements that would substantially reduce the vividness, intactness, or unity of views or degrade the existing visual character or quality of the area. Therefore, Alternative C2 would have greater impacts on aesthetics compared to the proposed project.

Biological Resources

No new ROW or work within existing ROW located within an existing conservation easement would occur under this alternative. ~~Therefore, Alternative C2 would not conflict with other HCPs and NCCPs in the proposed project area and impacts would be reduced compared to the proposed project.~~ This alternative would result in approximately 42 percent less ground disturbance than the proposed project. However, construction and operation of this alternative would partially occur beyond the biological environmental setting for the proposed project and in a new ROW, which could result in impacts on biological resources not analyzed in this EIR. Similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative C2 includes the expansion of the existing Capistrano Substation; therefore, the former utility structure (historic site 30-179873) would be partially demolished under this alternative as described for the proposed project. Similar to the proposed project, impacts on historical resources under Alternative C2 would be significant.

Land Use and Planning

As discussed above under "Biological Resources," implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with the SDG&E HCP/NCCP. ~~this~~

[8] This disturbance estimate is based on the assumption that open-cut trenching for the installation of a single 230-kV circuit in new underground conduit would require a 25-foot-wide work area. Two separate trenches would be required along San Juan Creek Road (one for each 230-kV circuit), but only one would be required along Vista Montana Road because of the existing underground conduit available.

~~alternative would reduce conflicts with applicable NCCPs and HCPs in the area. Therefore Alternative C2 would substantially reduce impacts on land use.~~ ~~However,~~ Alternative C2 includes the expansion of the existing Capistrano Substation. The construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would occur, and conflicts with local zoning height restrictions (by 10 to 15 feet) would result. ~~Therefore, impacts on land use under Alternative C2 would remain significant.~~ However, similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative C2 would be approximately 43 percent below the construction emissions for the proposed project. While Alternative C2 would reduce emissions of ROG to less than significant, Alternative C2 criteria pollutant emissions would still exceed regional significance thresholds for NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative C2 to less than significant. However, similar to the proposed project, PM_{10} and $PM_{2.5}$ emissions from Alternative C2 would remain significant and unavoidable.

Alternative C2 includes the expansion of the existing Capistrano Substation similar to the proposed project. Therefore, Alternative C2 would result in a significant air quality impact from exceeding the SCAQMD LST at the 6.4-acre construction site similar to the proposed project.

Transportation and Traffic

Under Alternative C2, a new double-circuit 230-kV line would cross I-5 and SR-74 as proposed. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. This alternative would include partial ~~and full~~ road closures along Calle San Diego ~~and Camino Capistrano~~ because the expansion of the existing Capistrano Substation would occur similar to the proposed project. Alternative C2 would not include 0.4 miles of trenching in the vicinity of Via Pamplona; therefore, the ~~significant~~ impact on traffic and transportation would be avoided in this area. However, Alternative C2 would include approximately 1 mile of trenching along San Juan Creek Road in the City of San Juan Capistrano. Partial or full road closures along San Juan Creek Road would likely be necessary and would create a significant impact similar to or greater than the proposed project.

Cumulative Impacts

Alternative C2 includes the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano would occur similar to the proposed project.

Other Resource Areas

Alternative C2 would increase impacts on ~~biological resources, cultural resources,~~ hydrology, land use, and recreation as a result of the trenching in a new right-of-way (ROW) along San Juan Creek Road. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative C2 would result in impacts on air quality ~~and land use~~ that are less than the proposed project; however, these impacts would remain significant under Alternative C2. Alternative C2 would have greater impacts on cultural resources ~~and traffic and transportation~~ compared to the proposed project. This

alternative would have a significant impact on cumulative impacts, similar to the proposed project. This alternative would increase capacity of the South Orange County 138-kV system similar to the proposed project because a new 230-kV source to South Orange County would be constructed.

5.2.8 Alternative D – SCE 230-kV Loop-in to Reduced-Footprint Substation at Landfill

Under Alternative D, a new double-circuit 230-kV line segment (less than 0.25 miles long) and a new, single-circuit 138-kV line segment (approximately 0.75 miles long) would be constructed as described in Chapter 3, Section 3.2.8, "Alternative D – SCE 230-kV Loop In to Reduced-Footprint Substation at Landfill." The combined length of transmission line segments to be constructed under this alternative would be approximately 6.8 miles shorter than as proposed.

Approximately 8 transmission structures would be installed along transmission line Segment 3 and approximately 0.25 miles of new ROW within Prima Deshecha Landfill. This would equate to approximately 3.3 acres of land disturbance compared to the 33.7 acres (Table 2-8) that would be disturbed if the proposed transmission lines were installed (82 transmission structures). Refer to the calculation methodology described for Alternative B1. In addition, the new 230/138/12-kV substation would likely be smaller than the proposed 230/138/12-kV substation because only one 230/138-kV transformer would be installed instead of two, and only one 138/12-kV transformer would be installed instead of three. Space for a spare 230/138-kV transformer and spare 138/12-kV transformer would still be included as proposed.

It is anticipated that Alternative D would be completed in less than 50 months instead of approximately 64 months because the work at Talega Substation, within the Talega Hub/Corridor area, and along transmission line Segments 1a, 1b, 2, and 4 and most of transmission line Segment 3 would not be required (Table 2-6). In addition, fewer workers, less helicopter use, and less construction equipment use would be required for the construction of Alternative D than the proposed project. Therefore, construction emissions would be substantially less for Alternative D than the proposed project.

Aesthetics

Alternative D would include construction of a new substation within the Prima Deshecha Landfill and placement of eight new 138-kV and 230-kV transmission structures along Segment 3. The Prima Deshecha Landfill and the surrounding area are substantially disturbed and several existing large transmission lines occur in the area. Public views of the substation site are currently limited and views of existing transmission lines in the area are somewhat common (Figure 5-1, Photo 1). Although the substation site may be partially visible from some nearby residential areas, most views from residential areas are screened by terrain. The substation site would be visible from portions of several multiple-use recreation trails with high visual sensitivity located south of the site (e.g., Forster Ridgeline Trail and Talega/Cristianitos Trail); however, it would be viewed in the context of existing disturbed lands of the landfill and several existing large transmission lines. For these reasons, the new substation and transmission structures would not introduce new encroaching elements that would substantially reduce the vividness, intactness, or unity of views or degrade the existing visual character or quality of the area. In addition, Alternative D would require a shorter construction time and involve placement of substantially fewer new transmission structures compared to the proposed project. This alternative would also avoid expansion of the existing Capistrano Substation. Therefore, Alternative D would avoid significant impacts on aesthetics when compared to the proposed project.

Photo 1:
Southeast view of Prima Deshecha Landfill from La Pata Avenue

Photo 2:
Northeast view of Mission Viejo Substation from westbound State Route 74

Photo 3:
Southeast view of Trabuco Substation from Nellie Gail Ranch Equestrian Trail

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Figure 5-1

Representative Photos for Alternatives D, F, and J

South Orange County Reliability Enhancement Project

Biological Resources

Under this alternative, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts may be significant until the completion of SDG&E coordination requirements detailed in Section 6.2 of the SDG&E NCCP prove otherwise.~~ This alternative would result in approximately 61 percent less ground disturbance than the proposed project. Although, construction and operation of this alternative would partially occur beyond the biological environmental setting for the proposed project and in new ROW, impacts would occur within the Prima Deshecha Landfill. The Prima Deshecha Landfill is substantially disturbed and would not likely support sensitive species. Similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative D does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative D would require ground disturbance for the substation at the landfill; however, this area is substantially disturbed and the potential for a significant cultural resources to be present is low. Alternative D would avoid significant impacts on historic resources when compared to the proposed project.

Land Use and Planning

Alternative D does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with the City of San Juan Capistrano zoning height restriction would not result.

Alternative D would construct a new substation within the Prima Deshecha Landfill. The Orange County zoning ordinance designates the proposed location of the Landfill Substation as General Agricultural. Section 7-9-55.3 identifies public/private utility buildings and structures as a permitted use subject to approval of a site development permit. Section 7-9-55.8 (c) identifies a 35-foot maximum structure height for General Agricultural. (County of Orange 2015)

The construction of the 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment, as described for the proposed project, at the Landfill Substation would conflict with the County of Orange zoning height restriction. Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process.

Additionally, as discussed above under "Biological Resources," ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, Alternative D would have significant impacts on land use similar to the proposed project.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative D would be approximately 61 percent below the construction emissions for the proposed

project. While Alternative D would reduce emissions of ROG to less than significant, Alternative D criteria pollutant emissions would still exceed regional significance thresholds for NOX, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NOX emissions from Alternative D to less than significant. However, similar to the proposed project, PM_{10} and $PM_{2.5}$ emissions from Alternative D would remain significant and unavoidable.

Because Alternative D does not include expanding the existing Capistrano Substation, the associated significant air quality impact resulting from exceeding the SCAQMD LST at the 6.4-acre construction site would be avoided. However, LST thresholds would still be exceeded by Alternative D at other locations, including the reduced-sized substation, and impacts would remain significant and unavoidable.

Transportation and Traffic

Alternative D would use an existing 138-kV transmission line along Vista Montana. Therefore, partial ~~and full~~ road closures along Via Pamplona would not occur. Additionally, Alternative D does not include the expansion of the existing Capistrano Substation; therefore, the associated partial ~~and full~~ closures of Calle San Diego ~~and Camino Capistrano~~ would not occur. Alternative D would avoid significant impacts on transportation and traffic when compared to the proposed project.

~~Alternative D is the Environmentally Superior Alternative for transportation and traffic (Table 5-1) compared to the other alternatives because it would completely avoid the roads identified as having a significant impact under the proposed project without generating new traffic impacts.~~

Cumulative Impacts

Alternative D does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative D would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

~~Alternative D is the Environmentally Superior Alternative for cumulative impacts (Table 5-1) compared to the other alternatives because Alternative D would completely avoid the road identified as having a cumulatively significant impact under the proposed project as well as avoiding all roads identified as having a significant impact under the proposed project without generating new traffic impacts.~~

Other Resource Areas

Alternative D would reduce impacts on aesthetics and noise as a result of the reduced substation footprint at the Prima Deshecha Landfill, which, compared to the proposed project, would be in a more rural area than the Capistrano Substation. Alternative D would increase impacts on hazardous materials and land use from the construction of a 230-kV substation within an actively operating landfill. Alternative D would also increase impacts on public services as the substation would be located on land designated for future use (Zone 4) by the Prima Deshecha Landfill operations, which would significantly affect the overall performance objectives of the landfill (Orange County 2006). Mitigation that would require the applicant to locate the substation in an area of the landfill property to allow for a joint use could reduce this impact to less than significant. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative D would result in less impacts on air quality than the proposed project; however, impacts on air quality would remain significant under Alternative D. Alternative D would have similar significant

impacts on ~~biological resources,~~ cultural resources~~, and land use~~. Alternative D would reduce the proposed project's transportation and traffic and cumulative impacts to less than significant. This alternative would have substantially greater impacts on public services. Additionally, the feasibility of SDG&E obtaining the property for this alternative is uncertain as the property is owned and used by the County of Orange for an existing public use. Further, consultation between the applicant and the County of Orange would have to occur to determine the feasibility of this alternative. This alternative would increase capacity of the South Orange County 138-kV system similar to the proposed project because a new 230-kV source to South Orange County would be constructed.

5.2.9 Alternative E – New 230-kV Talega–Capistrano Line Operated at 138 kV

Under this alternative, San Juan Capistrano Substation would not be constructed, and a new double-circuit 230-kV line segment would not be installed between Capistrano Substation and San Juan Hills High School as proposed. The proposed double-circuit 230-kV line would be constructed between Talega Substation and the San Juan Hills High School and Rancho San Juan residential development area (Figure 3-4) but would be operated at 138 kV rather than 230 kV. The new 230-kV line would be approximately 3 miles shorter than the proposed 230-kV line.

Approximately 57 transmission structures would be installed along transmission line Segments 3 and 4 (see Table 2-4). The proposed distribution line work would not be required. This would equate to approximately 23.4 acres of land disturbance compared to the 33.7 acres (Table 2-8) that would be disturbed if the proposed transmission and distribution lines were installed. This equates to approximately 10 fewer acres of disturbance. Refer to the calculation methodology described for Alternative B1.

Given the reduced land disturbance associated with the proposed poles and considering that the proposed San Juan Capistrano Substation would not be constructed (6.4 acres), the combined components of Alternative E would result in approximately 16.4 fewer acres of land disturbance than the proposed project. In addition, fewer workers, less helicopter use, and less construction equipment use would be required for the construction of Alternative E than the proposed project.

Aesthetics

Alternative E does not include the expansion of the existing Capistrano Substation. Alternative E would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations similar to the aesthetic impacts associated with the transmission line for the proposed project. Therefore, Alternative E would reduce impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~ Construction and operation of this alternative would occur within the same environmental setting as the proposed project, but would require approximately 33 percent less ground disturbance than the proposed project; therefore, the potential impacts on special status species and their habitats would be reduced. Additionally, the temporal length of disturbance would also be reduced under this alternative. However, similar to the proposed project

impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative E does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative E would avoid significant impacts on historic resources when compared to the proposed project.

Land Use and Planning

Alternative D does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with local zoning height restriction would not result. Alternative D would substantially reduce impacts on land use and planning when compared to the proposed project. Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. ~~However, a~~As discussed above under "Biological Resources," ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, impacts on land use under Alternative D would remain significant.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative E would be approximately 33 percent below the construction emissions for the proposed project. While Alternative E would reduce impacts on air quality, Alternative E criteria pollutant emissions would still exceed regional significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative E to less than significant. However, similar to the proposed project, ROG, PM_{10} and $PM_{2.5}$ emissions from Alternative E would remain significant and unavoidable.

Because Alternative E does not include expanding the existing Capistrano Substation, the associated significant air quality impact resulting from exceeding the SCAQMD LST at the 6.4-acre construction site would be avoided. However, LST thresholds would still be exceeded by Alternative E at other locations, and impacts would remain significant and unavoidable.

Transportation and Traffic

Under Alternative E, new conductor would be installed across I-5 and SR-74. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative E than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit; however, no full road closure is anticipated. Additionally, Alternative E does not include the expansion of the existing Capistrano Substation; therefore, the associated partial or full closures of Calle San Diego and Camino Capistrano would not occur. Alternative E would avoid significant impacts on transportation and traffic when compared to the proposed project.

Cumulative Impacts

Alternative E does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative E would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

Other Resource Areas

Alternative E would reduce impacts on aesthetics, ~~cultural resources,~~ geology and soils, GHGs, hazardous materials, and noise as a result of not expanding the existing Capistrano Substation, avoiding trenching along Via Montana, and construction of a shorter transmission line compared to the proposed project. However, the proposed project would already have less than significant impacts on these resources. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative E would result in fewer impacts on air quality ~~and land use~~ than the proposed project; however, these impacts would remain significant under Alternative E. Alternative E would reduce the proposed project's cultural resources~~, transportation and traffic,~~ and cumulative impacts to less than significant. This alternative would not increase capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.10 Alternative F – 230-kV Rancho Mission Viejo Substation

Under Alternative F, a new double-circuit 230-kV line that follows the route of TL13831 would be constructed that is approximately 1 mile shorter than the 230-kV route for the proposed route. New ROW would be required, however, to widen the existing 138-kV ROW between Talega and Rancho Mission Viejo substations (approximately 6.5 miles long and 20 feet wide), which would result in more land disturbance than the propose route within existing ROW. It is assumed that additional land disturbance would be required for the installation of new 138-kV facilities and 138-kV reconductoring to make use of the additional power that would be available from an upgraded 230/138/12-kV Rancho Mission Viejo Substation. In addition, the expansion of Rancho Mission Viejo Substation would require a similar amount of land disturbance compared to the construction of San Juan Capistrano Substation.

Aesthetics

Alternative F would include expansion of the existing Rancho Mission Viejo Substation, placement of a new 230-kV transmission line adjacent to an existing 138-kV transmission line, and installation of new conductor across SR-74, an Eligible State Scenic Highway. This alternative would involve placement of fewer new transmission structures compared to the proposed project and avoid expansion of the existing Capistrano Substation. The existing Rancho Mission Viejo Substation is visible from nearby areas with high visual sensitivity, including residential areas and SR-74. Public views of the substation expansion site and new transmission line include views of the existing substation, transmission lines, and other development in the area (Figure 5-1, Photo 2). Although new facilities implemented as part of Alternative F would be viewed in the context of existing facilities similar in appearance, the new facilities would represent a substantial increase in the amount of these facilities and their expansion into areas and views of surrounding areas that are primarily natural in appearance. For these reasons, the expanded substation would introduce encroaching elements that potentially would substantially reduce the vividness, intactness, and unity of views and degrade the existing visual character or quality of the area. Aesthetic

impacts on SR-74 from conductor stringing and construction activities and equipment would be similar to those of the proposed project. Although new facilities implemented as part of Alternative F would be viewed from SR-74 in the context of existing facilities similar in appearance, the new facilities would represent a substantial increase in the amount of these facilities and their expansion into areas that are primarily natural in appearance. Therefore, Alternative F would potentially substantially damage scenic resources viewed from this Eligible State Scenic Highway. Although Alternative F would involve placement of fewer new transmission structures compared to the proposed project and avoid expansion of the existing Capistrano Substation and associated potential changes to the historic structure's aesthetic character, it has the potential to degrade the existing visual character or quality of the area in the vicinity of the substation expansion and substantially damage scenic resources viewed from a state scenic highway. Therefore, Alternative F would result in similar aesthetic impacts than the proposed project.

Biological Resources

Under this alternative, new ROW would be required within the boundaries of Rancho Mission Viejo conservation easements. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise.~~ Construction and operation of this alternative would require additional ground disturbance beyond the proposed project. Additionally, construction and operation of this alternative would occur outside of the biological environmental setting for the proposed project and in new ROW, which could result in impacts on biological resources not analyzed in this EIR. Similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Cultural Resources

Alternative F does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative F would avoid significant impacts on historic resources when compared to the proposed project. However, construction within a new ROW would increase the potential to encounter a previously unknown cultural resources. Implementation of mitigation similar to the proposed project would reduce this impact to less than significant.

Land Use and Planning

Alternative F does not include the expansion of the existing Capistrano Substation. ~~Therefore~~However, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would ~~not~~ occur at the Rancho Mission Viejo Substation, and conflicts with local zoning height restriction would ~~not result~~be similar. Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. ~~Alternative F would substantially reduce impacts on land use and planning when compared to the proposed project. However,~~ As discussed above under "Biological Resources," implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~this alternative may have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, impacts on land use under Alternative F would remain significant.~~

Air Quality

Alternative F would increase the total amount of ground disturbance compared to the proposed project; therefore, the criteria pollutant emissions during construction of Alternative F would be greater than the construction emissions for the proposed project. Alternative F criteria pollutant emissions further exceed regional significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative F to less than significant. However, similar to the proposed project, ROG, PM_{10} and $PM_{2.5}$ emissions from Alternative F would remain significant and unavoidable.

The associated significant air quality impact resulting from exceeding the SCAQMD LST at this site would still occur under Alternative F.

Transportation and Traffic

Under Alternative F, new conductor would be installed across SR-74. Impacts on this highway from conductor stringing and construction traffic would be similar to those of the proposed project. Alternative F would not include 0.4 miles of trenching in the vicinity of Via Pamplona; therefore, the ~~significant~~ impact on traffic and transportation would be avoided in this area. Additionally, Alternative F does not include the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Calle San Diego ~~and Camino Capistrano~~ would not occur. Alternative F would avoid ~~significant~~ impacts on transportation and traffic when compared to the proposed project.

However, Alternative F could result in localized traffic impacts in the vicinity of the Rancho Mission Viejo Substation.

Cumulative Impacts

Alternative F does not include the expansion of the existing Capistrano Substation. Therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano that are required under the proposed project would not occur, and the capacity of Camino Capistrano would not be reduced. Alternative F would avoid a cumulatively significant impact on the performance standard of Camino Capistrano.

Other Resource Areas

Alternative F would reduce impacts on noise as a result of expanding the Rancho Mission Viejo Substation, which compared to the Capistrano Substation, is in a rural area. Alternative F would increase impacts on agriculture as the alternative would impact designated Important Farmland.~~, biological resources, cultural resources,~~ Additionally, Alternative F would increase impacts on geology and soils, and GHGs as a result of building a transmission line through a less disturbed and accessible ROW, which would require more equipment and greater ground disturbance to develop the pole sites. Impacts on all other resources would be similar to the proposed project (Table 5-1).

Determination

Alternative F would result in impacts on air quality that are greater than the proposed project. Impacts on biological resources and land use would be similar to the proposed project~~, and impacts on land use would be reduced under this alternative. However, impacts on land use would remain to be significant.~~ Alternative F would reduce the proposed project's cultural resources, ~~transportation and traffic,~~ and cumulative impacts to less than significant. This alternative would not increase capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.11 Alternative G – New 138-kV San Luis Rey–San Mateo Line and San Luis Rey Substation Expansion

Under Alternative G, the applicant would still expand Capistrano Substation as proposed but would not install the proposed 230-kV components (SCE 2012). A similar amount of land disturbance would still occur at the proposed substation site. A new 138-kV line would be constructed between San Luis Rey Substation and San Mateo Substation that would be approximately 12 miles longer than the proposed line between Talega Substation and Capistrano Substation. Instead of the proposed 82 transmission line structures along a 7.8-mile-long route, more than 250 new structures would be installed. This would equate to approximately 102.7 acres of land disturbance compared to the 33.7 acres (Table 2-8) that would be disturbed if the proposed transmission lines were installed. Refer to the calculation methodology described for Alternative B1.

In addition, more workers, more helicopter use, and more construction equipment use would be required under this alternative. Therefore, construction emissions would be substantially greater under Alternative G than the proposed project.

Aesthetics

Alternative G includes the expansion of the existing Capistrano Substation, which would have similar impacts on aesthetics as the proposed project. Additionally, Alternative G would have temporary impacts on aesthetics during construction and negligible permanent impacts during operations of a new subtransmission line between San Mateo Substation and San Luis Rey Substation similar to the aesthetic impacts associated with the new transmission line for the proposed project. However, the subtransmission line would be longer under Alternative G would be substantially longer and therefore would have greater impacts associated with it. Therefore, Alternative G would have greater impacts on aesthetics compared to the proposed project.

Biological Resources

Under this alternative, new ROW, as described for the proposed project, would be required within Talega Hub within the boundaries of the Talega Conservation Easement. Additionally, construction would occur within the existing SDG&E ROW within the Prima Deshecha Conservation Easement. Implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs. ~~SDG&E has not completed the proper coordination with USFWS and CDFW to determine conflicts with other HCPs and NCCPs in the area; therefore, similar to the proposed project, impacts would be considered significant until SDG&E has completed coordination requirements detailed in Section 6.2 of the SDG&E NCCP that prove otherwise~~ Construction and operation of this alternative would require additional ground disturbance beyond the proposed project. Additionally, construction and operation of this alternative would partially occur outside of the biological environmental setting for the proposed project, which could result in impacts on biological resources not analyzed in this EIR. Similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

Air Quality

Alternative G would increase the total amount of ground disturbance compared to the proposed project; therefore, the criteria pollutant emissions during construction of Alternative G would be greater than the construction emissions for the proposed project. Alternative G criteria pollutant emissions further exceed regional significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$ prior to mitigation. Implementation of mitigation measures described for the proposed project would reduce NO_X emissions from Alternative G

to less than significant. However, similar to the proposed project, ROG, PM_{10} and $PM_{2.5}$ emissions from Alternative G would remain significant and unavoidable.

The associated significant air quality impact resulting from exceeding the SCAQMD LST at this site would still occur under Alternative G.

Cultural Resources

Alternative G includes the rebuild of 138-kV and 12-kV facilities as described for the proposed project. These components would be located in the western side of Capistrano Substation, which would require the former utility structure (historic site 30-179873) to be partially demolished under this alternative as described for the proposed project. Similar to the proposed project, impacts on historical resources under Alternative G would be significant. Additionally, the construction of approximately 20 miles of subtransmission line would increase the potential to encounter previously undiscovered cultural resources.

Land Use and Planning

Alternative G includes the rebuild of 138-kV and 12-kV facilities as described for the proposed project. Therefore, this alternative would include construction of one 45-foot-tall 138-kV switchgear building as described for the proposed project. Similar to the proposed project, this structure would conflict with local zoning height restrictions (by 10 feet). Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process. Additionally, as discussed above under "Biological Resources," ~~this alternative would have significant impacts from the conflicts with applicable NCCPs and HCPs in the area. Therefore, Alternative G would have similar significant impacts on land use as the proposed project.~~ implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Transportation and Traffic

Under Alternative G, new conductor would be installed across I-5 and SR-74. Impacts on these highways from conductor stringing and construction traffic would be similar to those of the proposed project. It is assumed that less work would occur in the vicinity of Via Pamplona under Alternative G than for the proposed project because an available section of underground conduit (1,900 feet long) is already in place that could accommodate a new 138-kV line (Table 2-3). The installation of new conductor may require partial closures along Via Pamplona to facilitate stringing new conductor from the dead-end structures through the existing underground conduit~~; however, no full road closure is anticipated~~.

However, Alternative G includes the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Calle San Diego ~~and Camino Capistrano~~ would occur similar to the proposed project. Additionally, Alternative G includes reconductoring of 138-kV transmission lines between San Mateo Substation and San Luis Rey Substation, which are approximately 20 miles apart. This additional reconductoring would likely require additional temporary partial or full road closures or could have increased impacts to I-5 (see Figure 3-2). Alternative G would increase ~~significant~~ impacts on transportation and traffic when compared to the proposed project.

Cumulative Impacts

Alternative G includes the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano would occur similar to the proposed project. Additionally, as discussed above, Alternative G includes reconductoring of 138-kV

transmission lines between San Mateo Substation and San Luis Rey Substation, which are approximately 20 miles apart. This additional reconductoring would likely result in additional cumulative impact to other street segments. Alternative G would increase the cumulatively significant impact on the performance standards of local roadways.

Other Resource Areas

With the exception of agriculture and population and housing, Alternative G would increase impacts on all resources as a result of increasing the amount of reconductoring that would occur compared to the proposed project (Table 5-1).

Determination

Alternative G would result in impacts on air quality~~, transportation and traffic, and cumulative impacts~~ that are greater than the proposed project. Impacts on biological resources, cultural resources, and land use and planning would be similar to the proposed project. This alternative would not increase capacity of the South Orange County 138-kV system as substantially as the proposed project because a new 230-kV source to South Orange County would not be constructed.

5.2.~~11~~12 Alternative J – SCE 230-kV Loop-~~in~~ to Trabuco Substation

Under this alternative, the applicant's 138/12-kV Trabuco Substation would be expanded to a 230/138/12-kV substation ~~with specifications comparable to those of the proposed project's new San Juan Capistrano Substation~~. The substation expansion would use an existing 2-acre AT&T parking lot located adjacent to the north side of the existing Trabuco Substation to ~~house~~accommodate the new 230/138kV equipment.

A new 230-kV source of power would be added to the South Orange County 138-kV system by looping Southern California Edison's (SCE's) Songs-Santiago 230-kV transmission system into the Trabuco Substation. This would be accomplished by constructing a new underground double circuit 230-kV line from the north along Camino Capistrano or from the east several hundred feet north of Crown Valley Parkway (Figure 3-5). The easterly route would require a crossing of I-5, similar to the proposed project. The new underground 230-kV double circuit transmission line would require new ROW under either routing option.

Existing infrastructure in the AT&T parking lot would be removed, and civil work would be conducted to establish a new pad for the 230/138-kV equipment. New equipment would include support structures for the 230-kV double circuit transmission line, a 230-kV bus, two 230-kV circuit breakers, two 230/138-kV air-insulated transformers (one required and one spare), a 138-kV circuit breaker, and a new 80- x 40-foot control building. New substation componentry would be set back from the perimeter of the parcel by at least 20 feet (Figure 3-5). A small switchyard would be constructed to loop SCE's Santiago-SONGS 230-kV line into the Trabuco Substation. The existing 138/12-kV substation equipment would not be modified, with the exception of connecting the new 138-kV circuit breaker to the existing 138-kV system.

The SDG&E South Orange County 138-kV System would not require any reconductoring under this alternative. The Capistrano Substation would not be expanded, but equipment at Capistrano Substation found to be inadequate would be replaced. The distribution circuit 315 (12-kV) would not be relocated.

Aesthetics

Alternative J would include expansion of the existing Trabuco Substation. The existing Trabuco Substation is visible from nearby areas with high visual sensitivity, including residential areas and a public park. Public views of the substation expansion site include views of the existing substation, transmission lines, and other development in the area (Figure 5-1, Photo 3). New facilities implemented

as part of Alternative J would be viewed in the context of existing facilities similar in appearance and other surrounding developed lands. In addition, Alternative J would involve placement of fewer new transmission structures compared to the proposed project. For these reasons the expanded substation would not introduce new encroaching elements that would substantially reduce the vividness, intactness, or unity of views or degrade the existing visual character or quality of the area. This alternative would also avoid expansion of the existing Capistrano Substation. Therefore, Alternative J would have less of an impact on aesthetics compared to the proposed project.

Air Quality

Based on the assumed disturbance acreages, the criteria pollutant emissions during construction of Alternative J would be approximately 88 percent below the construction emissions for the proposed project. Alternative J would reduce emissions of ROG, NOX, PM_{10}, and $PM_{2.5}$ to less than significant levels. Implementation of mitigation measures described for the proposed project would further reduce emissions of criteria pollutants resulting from the construction of Alternative J.

Because Alternative J does not include expanding the existing Capistrano Substation, the associated significant air quality impact that would result from exceeding the SCAQMD LST at the 6.4-acre construction site would be reduced but would likely remain significant under Alternative J. Alternative J is the Environmentally Superior Alternative for air quality (Table 5-1) compared to the other alternatives because it would not exceed significance thresholds for any criteria air pollutant and would reduce localized significant air impacts.

Biological Resources

Under Alternative J, all project componentry would be installed mostly in previously disturbed areas, and lands set aside for conservation under an existing HCP or NCCP would not be affected. Although construction and operation of this alternative would occur beyond the biological environmental setting for the proposed project, impacts on biological resources under this alternative would primarily occur within the Trabuco Substation, AT&T parking lot, and Camino Capistrano. These locations are substantially disturbed~~Confining the construction to mostly previously disturbed areas would significantly decrease the amount of disturbance~~, which ~~in turn~~ would reduce the potential for impacts on biological resources. Therefore, impacts on biological resources would be reduced when compared to the proposed project. Similar to the proposed project, impacts on Covered special-status species would be less than significant through implementation of the SDG&E HCP/NCCP.

~~Alternative J is the Environmentally Superior Alternative for biological resources (Table 5-1) compared to the other alternatives because it would only require about 6 acres of ground disturbance, all in previously disturbed areas. Alternative J does not require mitigation credits from the SDG&E NCCP and would not impact any conservation area designated by other NCCPs or HCPs in the area~~.

Cultural Resources

Alternative J does not include the expansion of the existing Capistrano Substation. Therefore, the former utility structure (historic site 30-179873) would not be partially demolished under this alternative as described for the proposed project. Alternative J would avoid significant impacts on historic resources when compared to the proposed project.

Alternative J is the Environmentally Superior Alternative for cultural resources (Table 5-1) compared to the other alternatives because the proposed substation would be constructed on previously disturbed areas and would require a shorter length of transmission line work than any other alternatives, which reduces the likeliness of the unanticipated discovery of cultural resources.

Land Use and Planning

As discussed above under "Biological Resources," ~~this alternative would avoid conflicts with applicable NCCPs and HCPs in the area. Therefore Alternative C2~~ J would substantially reduce impacts on land use. implementation of MM-BIO 10, similar to the proposed project, would reduce impacts from potential conflicts with other HCPs.

Alternative J does not include the expansion of the existing Capistrano Substation. Therefore, the construction of 45- to 50-foot-tall buildings to house new 138-kV and 230-kV equipment as described for the proposed project would not occur, and conflicts with the City of San Juan Capistrano zoning height restriction would not result. However, Alternative J would expand the existing Trabuco Substation. The ~~Laguna Niguel zoning ordinance~~ Laguna Niguel Gateway Specific Plan designates the Trabuco Substation and the existing AT&T parking lot to the north of the substation as Business Park. Table ~~4.-~~1 ~~under Section 9-1-42 of the Laguna Niguel zoning ordinance specifics~~ of the Laguna Niguel Gateway Specific Plan ~~permitted uses within nonresidential districts and~~ identifies Public Utility Facilities as a permitted use in Business Park. ~~Table 4.2 under Section 9-1-43.1 of the Laguna Niguel zoning ordinance sets forth standards for development of property within nonresidential districts and identifies a 45-foot maximum structure height for Business Park. (City of Laguna Niguel 2014)~~ Table 4-4 of the Laguna Niguel Gateway Specific Plan identifies a maximum height requirement of 60 feet for the project area (Planning District B). (City of Laguna Niguel 2011)

The construction of the ~~50~~20-foot-tall control building ~~to house new the new 230-kV gas insulated substation equipment~~ at the Trabuco Substation, as described for the proposed project, would not conflict with the ~~City of Laguna Niguel zoning height restriction (by 5 feet)~~ Laguna Niguel Gateway Specific Plan. Therefore Alternative J would substantially reduce conflict on land use.~~Therefore, a significant impact on land use would remain under this alternative.~~ Similar to the proposed project and as described in Section 4.10, "Land Use and Planning," the CPUC has responsibility for and jurisdiction over substation and transmission line siting and approval, superseding local jurisdictions, which do not have jurisdiction. However, conflicts or inconsistencies with local jurisdictions are given consideration by the CPUC during its review process.

~~Alternative J is the Environmentally Superior Alternative for land use (Table 5-1) compared to the other alternatives because only one of the proposed structures on the substation would conflict with local height restrictions and only by 5 feet, which is less than the other alternatives. Additionally, as described under "Biological Resources," this alternative would avoid conflicts with applicable NCCPs and HCPs in the area.~~

Transportation and Traffic

Under Alternative J, new conductor may be installed across I-5, and impacts on this highway from conductor stringing and construction traffic, would be similar to those of the proposed project. The installation of new conductor may require partial closures along Camino Capistrano in northern portion of Laguna Niguel or along La Alameda, Los Altos, and Plaza and Bellogente in western Mission Viejo. The portions of these roads do not provide exclusive access to high trafficked areas; therefore, implementation of a traffic control plan similar to the proposed project would reduce potential impacts to less than significant. ~~in an industrial area of the City of Laguna Niguel ; however, n~~No full road closures are anticipated. Additionally, Alternative J does not include the expansion of the existing Capistrano Substation; therefore, the associated partial ~~or full~~ closures of Calle San Diego ~~and Camino Capistrano~~ (in the city of San Juan Capistrano) would not occur. Work would not occur in the vicinity of Via Pamplona, and impacts to roadways in the vicinity of San Juan Hill High School would be avoided. ~~Therefore, Alternative J would avoid significant impacts on transportation and traffic when compared to the proposed project.~~

Cumulative Impacts

Alternative J does not include the expansion of the existing Capistrano Substation; therefore, the associated partial closures of Camino Capistrano in the City of San Juan Capistrano would not occur and cumulative impacts would be avoided.

Other Resource Areas

Alternative J would reduce impacts on noise as a result of expanding the Trabuco Substation, which compared to the Capistrano Substation, is located further from sensitive receptors. Similar to ordinances identified for the City of San Juan Capistrano, construction noise levels in the City of Laguna Niguel are exempt from noise standards if work occurs between the hours of 7:00 AM and 8:00 PM (City of Laguna Niguel 2014). The Laguna Niguel Gateway Specific Plan does not identify further noise restrictions (City of Laguna Niguel 2011).

Determination

Alternative J would result in fewer impacts on air quality ~~and land use and planning~~ than the proposed project; however, impacts on air ~~and land use and planning~~ would remain significant. Alternative J would reduce impacts on cultural resources, ~~air quality, transportation and traffic, and cumulative impacts to less than significant~~. This alternative would increase capacity of the South Orange County 138-kV system similar to the proposed project because a new 230-kV source to South Orange County would be constructed.

5.3 Environmentally Superior Alternative

The No Project Alternative (Alternative A, Section 5.2.1) would be environmentally superior for all environmental resources. The No Project Alternative would be feasible and would meet most of the basic objectives of the proposed project (Section 3.2.1.2, "No Project Alternative and Objectives of the Proposed Project"). However, when the Environmentally Superior Alternative is the No Project Alternative, CEQA requires the identification of an Environmentally Superior Alternative among the other alternatives (CEQA Guidelines Section 15126.6). Therefore, based on the analysis presented in this chapter, Alternative J was found to be the Environmentally Superior Alternative compared to the proposed project and to the other alternatives for the following reasons:

- Alternative J would substantially reduce air quality emissions when compared to the proposed project's air emissions.
- ~~Alternative J would reduce significant impacts from conflicts with applicable NCCPs and HCPs to less than significant.~~
- Alternative J would reduce significant impacts on historic resources to less than significant.
- ~~Alternative J would reduce significant impacts on transportation and traffic to less than significant.~~
- ~~Alternative J would reduce significant cumulative impacts to less than significant.~~