

5.0 COMPARISON OF ALTERNATIVES

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This section compares the environmental impacts of the route alternatives to the Proposed Project. CEQA Guidelines (Section 15126.6 [d]) require that an environmental impact report include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

5.1 SIGNIFICANT OR POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

As discussed in Section 4.0 of this PEA, the Proposed Project has been determined to have impacts on environmental resources. APMs have been incorporated into the Proposed Project's design and construction plans to minimize the Proposed Project's potential impacts during the construction and operation phases. APMs are presented within each resource assessment, as applicable. APMs are proposed by SCE as part of project design. Mitigation measures, however, are proposed as a way of avoiding, minimizing, or mitigating potential significant impacts that may result from implementation of the Proposed Project. With the exception of air quality emissions generated during construction activities, all impacts would be less than significant with the implementation of APMs and incorporation of mitigation measures.

The Proposed Project would generate temporary emissions associated with construction activities. Emissions generated by construction of the Proposed Project would cause a temporary exceedance of the SCAQMD threshold of significance for NO_x, PM₁₀, and PM_{2.5} emissions. APMs are identified in the analysis that would reduce the impacts to the degree possible. However, NO_x, PM₁₀, and PM_{2.5} emissions cannot be reduced below the SCAQMD significance threshold. This impact is considered to be a significant and unavoidable impact of the Proposed Project.

5.2 COMPARISON OF ALTERNATIVES

General Order No. 131-D requires that an Application for a Permit to Construct include the "[r]easons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each."

Three route alternatives to the Proposed Project are analyzed in this PEA: Farrell-Garnet 115 kV Subtransmission Line Alternative Routes 2 and 3; and Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Route 5. Table 5.1: Comparison of Alternatives – Farrell-Garnet 115 kV Subtransmission Line, compares the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1), by CEQA resource category, to Alternative Routes 2 and 3. Table 5.2: Comparison of Alternatives – Mirage-Santa Rosa 115 kV Subtransmission Line, compares the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4), by CEQA resource category, to Alternative Route 5.

Overall, the Proposed Project and the three 115 kV subtransmission line route alternatives would result in similar levels of impacts in all resource categories. Therefore, like the Proposed Project, the 115 kV subtransmission line route alternatives would result in less than significant impacts in all resource categories, with the exception of Air Quality. However, there are differences in the extent of impacts that would be likely to result from construction and operation of the subtransmission lines using the proposed or alternative routes, as discussed below.

5.2.1 Farrell-Garnet 115 kV Subtransmission Line Alternative Routes

Although Alternative 2 and Alternative 3 would result in similar impacts under CEQA, as compared to the Proposed Farrell-Garnet 115 kV Subtransmission Line (Route 1), the extent of impacts that would result from construction and operation of the alternative routes would be greater than the impacts resulting from the Proposed Project.

Alternative 2 is 6.0 miles long, as compared to the Proposed Project route which is 5.3 miles long, and would require acquisition of 2.5 miles of additional ROWs (from Four Seasons Boulevard to the intersection of the existing Devers-Farrell-Windland 115 kV Subtransmission Line ROW) and additional, new access roads. The Proposed Project would be located entirely within existing SCE ROWs or franchise locations.

Unlike the Proposed Project, portions of Alternative 2 would be located within and adjacent to residential areas. As a result, the extent of impacts on residential viewers along this route would be greater than that of the Proposed Project. Also, because construction of Alternative 2 would take place closer to residences than the Proposed Project, noise impacts would be greater. In addition, a portion of Alternative Route 2 would be located less than 1,000 feet from the north end of the Palm Springs International Airport runways, which could result in potential obstructions to navigable airspace.

Without the implementation of APMs and mitigation measures, Alternative Route 2 would likely have a significant impact to biological resources. Access to the project area would have to be created and maintained, resulting in greater permanent impacts within the Whitewater Floodplain Preserve and to habitat of sensitive biological resources. Therefore, there would be an impact on riparian habitats or natural communities identified in regional plans and there might be an impact on federally protected wetlands. In comparison, the Proposed Project only borders the Whitewater Floodplain Preserve, would not require additional access roads within the preserve, and would result in less than significant impacts to biological resources.

In addition, Alternative 2 would traverse the top of Garnet Hill, a Native American cultural resource that may be considered a TCP. In comparison, the Proposed Project would be constructed within an existing ROW adjacent to Garnet Hill but would not transect the resource.

Further, Alternative 2 would require approximately 0.5 mile of trenching, new access roads, and additional tubular steel riser poles to accommodate the underground portion. For these reasons, construction of Alternative 2 would cause a greater amount of ground disturbance than the Proposed Project, which would result in greater air quality impacts. Also, because Alternative 2 would cross a greater expanse of the Whitewater River 100-year floodzone, it could potentially result in a greater level of impact to hydrology and water quality than the Proposed Project. Further, because a portion of Alternative 2 would require trenching, it could potentially result in a greater impact to geology and soils. Finally, to accommodate construction of almost 0.5 mile of underground line, the extent of traffic impacts for Alternative 2, as compared to the Proposed Project, would be greater, due to the necessity of longer lane closures.

Alternative 3 is 6.5 miles long, compared to 5.3 miles for the Proposed Project, and would require 0.5 mile of new ROW.

Unlike the Proposed Project, portions of Alternative 3 would be located within and adjacent to residential areas. As a result, impacts to residential viewers along this route would be greater than from the Proposed Project. Also, because Alternative 3 is closer to residences than the Proposed Project, noise impacts would be greater during construction. In addition, Alternative 3 would be located less than 1,000 feet from the north end of the Palm Springs International Airport runways, which could result in potential obstructions to navigable airspace.

In addition, Alternative 3 would cross a portion of Garnet Hill, a Native American cultural resource that may be considered a TCP. In comparison, the Proposed Project would be constructed within an existing ROW adjacent to Garnet Hill but would not transect the resource.

Because it would be more than 1 mile longer than the Proposed Project and would require additional foundation work, construction of Alternative 3 would cause a greater amount of ground disturbance than the Proposed Project, which would result in a greater extent of air quality impacts. Also, because Alternative 3 would cross a greater expanse of the Whitewater River 100-year floodzone than the Proposed Project, it would result in greater potential impacts to hydrology and water quality.

Alternative 2 would cost \$1.4 million, in comparison to \$0.8 million for the Proposed Project (Route 1). Alternative 3 would cost \$0.9 million. Also, either Alternative 2 or 3 would result in a longer construction schedule than the Proposed Project.

In summary, the Proposed Project is 5.3 miles long and would be constructed entirely within existing ROWs and franchise locations. The Proposed Project would not be constructed within a residential area and therefore would have lower levels of visual and noise impacts. The Proposed Project would be less likely to obstruct navigable airspace than Alternatives 2 and 3. In addition, the Proposed Project would not impact riparian habitat, natural communities, or federally protected wetlands and would not conflict with local biological resource protection policies or habitat conservation plans. Any biological effects caused by the Proposed Project would be short-term and temporary. Also, the Proposed Project would require less ground disturbance than the Alternatives 2 and 3 because it would not require new access roads and would cross a shorter expanse of the Whitewater River 100-year floodzone. As a result, although air impacts for the Proposed Project and Alternatives 2 and 3 would be significant and unavoidable, the Proposed Project would result in lower levels of air emissions due to the lesser amount of ground disturbance during construction. Furthermore, the Proposed Project would have a lower level of impact on the Garnet Hill Native American cultural resource site, in comparison to Alternatives 2 and 3. For these reasons and because the Proposed Project meets all of the project objectives, SCE recommends the Proposed Project (Route 1) as the proposed route for the new Farrell-Garnet 115 kV subtransmission line.

5.2.2 Mirage-Santa Rosa 115 kV Subtransmission Line Alternative Routes

Alternative 5 would require underground construction because of the presence of IID's overhead facilities along the route. Currently, there are existing 92 kV subtransmission and distribution lines owned and operated by IID on Ramon Road and both sides of Monterey Avenue. Construction of an overhead line along Monterey Avenue would require SCE to overbuild the IID distribution lines, which could result in reliability issues for both utilities, due to the lack of an integrated protection scheme.

Alternative Route 5 would require 1.9 miles of trenching, which would include the construction of vaults and tubular steel riser poles. As a result, air quality impacts would be greater for Alternative 5 in comparison to the Proposed Project (Route 4). Also, trenching for this alternative could result in greater impacts to erosion, water quality, drainage, and groundwater. Construction of Alternative 5 would require the use of backhoe and compaction equipment and equipment to repave the existing roadway. Also, construction of Alternative 5 would be three to five times longer in duration than the Proposed Project, due to civil construction, underground trenching, restrictions on road closures, installation and connection of underground cable, and resurfacing the area. Alternative 5 would be adjacent to 1.2 miles of residential properties, as compared to 19 residences adjacent to 0.5 mile of the Proposed Project. Due to these reasons, the effects of construction noise would be greater for Alternative 5.

Also, it would be necessary to construct Alternative 5 in the center of the existing roadway in order to avoid existing public utilities such as public water lines, natural gas pipelines, sewer lines, telephone wire, cable, and IID underground electric lines. As a result of constructing in the center of the roadway, longer lane closures, of all existing lanes, would be required. For these reasons, Alternative 5 would have greater effects on public utilities and services, as well as transportation and traffic. Alternative 5 also would result in a perpendicular crossing of IID facilities, which would require additional engineering and construction.

Alternative 5 would cost \$6.5 million, in comparison to \$2.0 million for the Proposed Project (Route 4). Thus Alternative 5 would result in three times the cost of the Proposed Project and would result in a longer construction schedule.

In comparison, the Proposed Project would use existing SCE ROWs, would be constructed overhead, and would be more cost-effective than Alternative 5. The Proposed Project would have fewer impacts to local traffic and public utilities and services because there would be no lane closures required and would require only two road crossings. Also, because construction of the Proposed Project would not require trenching or the use of associated equipment and would have less ground disturbance, the Proposed Project would have less impact on geology and soils, hydrology and water quality, air quality, and noise.

Although construction of the Proposed Project could impact three cultural resources and an isolated artifact, these impacts are unlikely due to previous disturbance and the fact that implementation of APMs and mitigation measures would reduce any potential impacts to less than significant. Similarly, any impacts to biology or recreation would likewise be avoided through either implementation of APMs or be reduced to less than significant through mitigation measures.

For these reasons, SCE recommends Route 4 as the proposed route for the new Mirage-Santa Rosa 115 kV subtransmission line. Construction and operation of the proposed route would meet all of the project objectives and is the most environmentally acceptable alternative.

**TABLE 5-1
COMPARISON OF ALTERNATIVES
FARRELL-GARNET 115 kV SUBTRANSMISSION LINE**

Resource Category	Farrell-Garnet Route 1 Proposed Project	Farrell-Garnet Alternative Route 2	Farrell-Garnet Alternative Route 3
Aesthetics	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant
Agriculture Resources	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Air Quality	Construction: Significant and Unavoidable Operation: Less than Significant	Construction: Significant and Unavoidable Operation: Less than Significant	Construction: Significant and Unavoidable Operation: Less than Significant
Biological Resources	Construction: Less than Significant with Mitigation Operation: Less than Significant	Construction: Less than Significant with Mitigation Operation: Less than Significant	Construction: Less than Significant with Mitigation Operation: Less than Significant
Cultural Resources	Construction: Less than Significant with Mitigation Operation: No Impact	Construction: Less than Significant with Mitigation Operation: Less than Significant with Mitigation	Construction: Less than Significant with Mitigation Operation: No Impact
Paleontological Resources	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs
Geology and Soils	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs
Hazards and Hazardous Materials	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs
Hydrology and Water Quality	Construction: Less than Significant with APMs Operation: No Impact	Construction: Less than Significant with APMs Operation: No Impact	Construction: Less than Significant with APMs Operation: No Impact
Land Use and Planning	Construction: Less than Significant with APM Operation: Less than Significant	Construction: Less than Significant with APM Operation: Less than Significant	Construction: Less than Significant with APM Operation: Less than Significant
Mineral Resources	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Noise	Construction: Less than Significant with APMs Operation: Less than Significant	Construction: Less than Significant with APMs Operation: Less than Significant	Construction: Less than Significant with APMs Operation: Less than Significant
Population and Housing	Construction: Less than Significant Operation: No Impact	Construction: Less than Significant Operation: No Impact	Construction: Less than Significant Operation: No Impact
Public Services	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant
Utilities	Construction: Less than Significant	Construction: Less than Significant	Construction: Less than Significant

**TABLE 5-1
COMPARISON OF ALTERNATIVES
FARRELL-GARNET 115 kV SUBTRANSMISSION LINE**

Resource Category	Farrell-Garnet Route 1 Proposed Project	Farrell-Garnet Alternative Route 2	Farrell-Garnet Alternative Route 3
		Operation: No Impact	Operation: No Impact
Recreation	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Transportation and Traffic	Construction: Less Than Significant with APMs Operation: Less than Significant	Construction: Less Than Significant with APMs Operation: Less than Significant	Construction: Less Than Significant with APMs Operation: Less than Significant

**TABLE 5-2
COMPARISON OF ALTERNATIVES
MIRAGE-SANTA ROSA 115 kV SUBTRANSMISSION LINE**

Section	Mirage-Santa Rosa Route 4 Proposed Project	Mirage-Santa-Rosa Alternative Route 5
Aesthetics	Construction: Less Than Significant Operation: Less than Significant	Construction: Less Than Significant Operation: Less than Significant
Agriculture Resources	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Air Quality	Construction: Significant and Unavoidable Operation: Less than Significant	Construction: Significant and Unavoidable Operation: Less than Significant
Biological Resources	Construction: Less than Significant with Mitigation Operation: Less than Significant	Construction: Less than Significant with Mitigation Operation: Less than Significant
Cultural Resources	Construction: Less Than Significant with Mitigation Operation: Less Than Significant with Mitigation	Construction: No Impact Operation: No Impact
Paleontological Resources	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Geology and Soils	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs
Hazards and Hazardous Materials	Construction: Less than Significant with APMs Operation: Less than Significant with APMs	Construction: Less than Significant with APMs Operation: Less than Significant with APMs
Hydrology and Water Quality	Construction: Less than Significant with APMs Operation: No Impact	Construction: Less than Significant with APMs Operation: No Impact
Land Use and Planning	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant
Mineral Resources	Construction: No Impact Operation: No Impact	Construction: No Impact Operation: No Impact
Noise	Construction: Less than Significant with APMs Operation: Less than Significant	Construction: Less than Significant with APMs Operation: Less than Significant

**TABLE 5-2
COMPARISON OF ALTERNATIVES
MIRAGE-SANTA ROSA 115 kV SUBTRANSMISSION LINE**

Section	Mirage-Santa Rosa Route 4 Proposed Project	Mirage-Santa-Rosa Alternative Route 5
Population and Housing	Construction: Less than Significant Operation: No Impact	Construction: Less than Significant Operation: No Impact
Public Services	Construction: Less than Significant Operation: Less than Significant	Construction: Less than Significant Operation: Less than Significant
Utilities	Construction: Less than Significant Operation: No Impact	Construction: Less than Significant Operation: No Impact
Recreation	Construction: Less than Significant with APM Operation: No Impact	Construction: No Impact Operation: No Impact
Transportation and Traffic	Construction: Less Than Significant with APMs Operation: Less than Significant	Construction: Less Than Significant with APM Operation: Less than Significant

5.3 CONCLUSION

The Proposed Farrell-Garnet 115kV Subtransmission Line (Route 1) and the Proposed Mirage-Santa Rosa 115 kV Subtransmission Line (Route 4) are considered to be the environmentally superior, i.e., lesser environmental effects, alternatives and are recommended by SCE as the Proposed Project. The Proposed Project would achieve the project objectives by serving load growth in the Electrical Needs Area and enhancing system reliability and operational flexibility in a manner that is consistent with SCE's planning guidelines and subtransmission guidelines.

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