

12. Comparison of Alternatives

This section provides a comparison of the proposed Project and alternatives based on the analysis presented in Sections 5 through 11. This comparison describes the differences in impacts among the various alternatives, focusing primarily on noteworthy differences between the proposed Project and alternatives.

For Air Quality, the differentiators used to compare the alternatives included such considerations as total emissions, health impacts of the emissions, location of the emissions, and ability to mitigate the emissions due to the differences in construction methods for the alternatives.

Sections 5 through 11 describe the anticipated construction and operational emissions associated with each Project alternative, including GHG emissions. As shown in Table S-4, all of the Project alternatives would exceed regional emission thresholds for SCAQMD, AVAQMD, and KCAPCD. The magnitude of exceedances would vary for each alternative.

Of all the Project alternatives, construction and operation of Alternative 4 (Chino Hills Routes) would have the lowest emissions due to the construction of fewer towers, reduced tower removal (wreck-out), reduced substation improvement work, and reduced 66-kV pole removal and new construction in Segments 8 and 9 (Substations). Additionally, Alternative 4 would reduce emissions in an area with poor air quality and much higher population density than the other Project alternative routes.

Alternative 2 (SCE's Proposed Project), Alternative 3 (West Lancaster), and Alternative 7 (66-kV Subtransmission) would have similar air quality impacts, although the emissions from Alternative 3 would be marginally less than Alternative 2, while the emissions from Alternative 7 would be marginally greater than Alternative 2. Compared to the other Project alternatives, Alternative 6 (Maximum Helicopter Construction in the ANF) would contribute to a greater increase in construction emissions for VOC and CO due to the significant increase in helicopter use.

The construction and operating criteria pollutants (specifically NO_x and PM₁₀) and GHG emissions would be higher for Alternative 5 (Partial Underground) than any other alternative due to increased inspection and maintenance requirements for the underground lines and due to the significant increase in SF₆ use, which is required to insulate the underground transmission lines.