5.0 COMPARISON OF ALTERNATIVES

This section of the Proponent's Environmental Assessment (PEA) compares the construction and operation of Southern California Edison's (SCE's) proposed Banducci Substation and associated facilities (Proposed Project) with its alternatives. Section 15126.6 (d) of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the [P]roposed [P]roject." Although a PEA document is not an EIR, Chapter 5.0 summarizes the relative impact of each alternative to the preferred alternative for each CEQA environmental issue area.

The Proposed Project objectives, provided in Section 1.4: Basic Objectives, are as follows:

- Provide safe and reliable electrical service.
- Add capacity to serve long-term forecasted electrical demand requirements in the Cummings Valley (Bear Valley Springs and Stallions Springs communities) beginning in 2016.
- Maintain system reliability within the Electrical Needs Area.
- Provide greater operational flexibility to transfer load between circuits and substation(s) within the Electrical Needs Area.
- Alleviate the anticipated service delivery voltage problems as the forecasted demand in the Bear Valley Springs and Stallion Springs areas grows beyond what can be reliably served by the existing 12 kilovolt (kV) distribution circuits from the existing Cummings Substation.
- Meet project needs while minimizing environmental impacts.
- Design and construct the project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects

These objectives were used to develop a range of reasonable alternatives to the Proposed Project, or to the location of the Proposed Project, that would feasibly attain most of these objectives.

5.1 Substation Site Evaluation Methodology

In order to meet the objectives of the Proposed Project, a Proposed Project Study Area (shown in Figure 1.2: Electrical Needs Area and Substation Study Area) was determined. The placement of a substation within this area would allow SCE to increase transformer capacity in the Electrical Needs Area and to transfer load between distribution circuits and the existing substations located near the Electrical Needs Area. A new substation operating within this area would maximize electrical benefits to serve the purpose and need for the Proposed Project.

The Project Study Area was developed using the following basic requirements:

- The substation should be in an area where existing and future electrical demand can be served within the Electrical Needs Area

- The substation should be located in an area where it would improve operational flexibility with adjacent substations and circuits

After a review of potential sites in the Proposed Project Study Area, SCE selected two substation location alternatives for the potential subtransmission source line routes. Those routes would involve the construction of two new 66 kV subtransmission line segments that would loop the existing Correction-Cummings-Kern River 1 66 kV Subtransmission Line through the proposed Banducci Substation. These alternatives are shown on Figure 2.1, Alternative Substation Sites and Figure 3.2, Subtransmission Source Line Route Description.

For more information about how the Proposed Project alternatives are developed, evaluated and selected, please refer to Section 2.0, Project Alternatives.

5.2 Alternatives Comparison Summary

General Order No. 131-D requires that an Application for a Permit to Construct (PTC) 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."

SCE has evaluated two site alternatives for the proposed Banducci Substation location: Site Alternative A and Site Alternative B. Each site alternative is discussed in detail in Chapter 2.0, Project Alternatives, of this PEA. Site Alternative A includes the preferred location of the proposed Banducci Substation and is analyzed in Chapter 4.0, Environmental Impact Assessment, of this PEA. SCE also included a brief analysis of the Site Alternative B location and the No Project Alternative for each issue area in Chapter 4.0, Environmental Impact Assessment, of this PEA. The two site alternatives and the No Project Alternative are described in this chapter, and a comparison of the impacts that would be associated with the alternative is provided in Table 5.1-1: Comparison of Alternatives.

Due to the close proximity of the site alternatives, only one subtransmission line route was necessary for consideration as part of the Proposed Project. As such, both Site Alternative A and Site Alternative B would be connected to Subtransmission Line Route Alternative 1. Subtransmission Line Route Alternative 1 would consist of a 66 kV subtransmission line that would be looped into and out of the new 66/12 kV proposed Banducci Substation by constructing two new 66 kV subtransmission line segments, as outlined in Chapter 2.0, Project Alternatives. This would create a new Banducci-Kern River 1 66 kV Subtransmission Line and a new Banducci-Correction-Cummings 66 kV Subtransmission Line.

Of the various site alternatives considered, the following site alternatives were compared for the Proposed Project.

Site Alternative A (Preferred Alternative)

Site Alternative A would be located on approximately 6.3 acres situated on the northwesterly portion of an 80-acre parcel. This privately owned parcel is located at the southeast corner of Pelliser Road and the unimproved Dale Road in unincorporated Kern County. The Kern County General Plan land use designation of Site Alternative A is Intensive Agriculture and the site is zoned Exclusive Agriculture. Both the Kern County General Plan and Zoning Ordinance allow for the development of a utility substation within these land use designations. Site Alternative A is surrounded by similar agricultural type land use designations to the north, west, and east, and a Resource Reserve land use designation to the south. In addition, Site Alternative A is located east of the existing transmission right-of-way (ROW), which contains the existing Correction-Cummings-Kern River 1 66 kV Subtransmission Line. SCE would establish vehicular access to Site Alternative A from Pelliser Road. Site Alternative A is currently vacant and would not require the removal or demolition of any existing structures.

Site Alternative B

Site Alternative B would be located on approximately 5 to 8 acres situated on the southerly portion of a 20-acre parcel. This privately owned parcel is located on the northeast corner of Pelliser Road and the unimproved Highline Road in unincorporated Kern County. Currently, the Kern County General Plan land use designation for Site Alternative B is "[Residential] 20 Minimum Gross Acres/Unit" and the site is zoned "Exclusive Agriculture." Site Alternative B is surrounded by residential and agricultural land use designations. Additionally, Site Alternative B is located north of the existing transmission ROW which contains the existing Correction-Cummings-Kern River 1 66 kV Subtransmission Line. SCE would establish vehicular access to Site Alternative B from Pelliser Road. Unlike Site Alternative A, Site Alternative B would require demolition of an existing residential structure, which is currently used as an office, as well as the appurtenant structures associated with its current use. These appurtenant facilities include an aboveground fuel tank, truck washing rack, and a computer networking room, all of which would require demolition and removal prior to construction.

Table 5.1-1: Comparison of Alternatives provides a comparison summary of the anticipated impacts associated with the Proposed Project and its alternatives for each CEQA issue area.

Table 5.1-1: Comparison of Alternatives

CEQA Resource Area	ALTERNATIVES	
	Site Alternative A (Preferred Alternative)	**Site Alternative B**
Aesthetics	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Greater

CEQA Resource Area	ALTERNATIVES	
	Site Alternative A (Preferred Alternative)	**Site Alternative B**
Agriculture and Forestry Resources	**Construction:** Less Than Significant **Operation:** Less than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Less
Air Quality	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Greater
Biological Resources	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Similar
Cultural Resources	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Similar
Geology and Soils	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Similar
Greenhouse Gas Emissions	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Greater
Hazards and Hazardous Materials	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Greater
Hydrology and Water Quality	**Construction:** Less Than Significant	**Construction:** Less Than Significant

CEQA Resource Area	ALTERNATIVES	
	Site Alternative A (Preferred Alternative)	**Site Alternative B**
	Operation: Less Than Significant	**Operation:** Less Than Significant **Comparative Impact:** Similar
Land Use and Planning	**Construction:** No Impact **Operation:** No Impact	**Construction:** No Impact **Operation:** No Impact **Comparative Impact:** Similar
Mineral Resources	**Construction:** No Impact **Operation:** No Impact	**Construction:** No Impact **Operation:** No Impact **Comparative Impact:** Similar
Noise	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Greater
Population and Housing	**Construction:** No Impact **Operation:** No Impact	**Construction:** No Impact **Operation:** No Impact **Comparative Impact:** Similar
Public Services	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Similar
Recreation	**Construction:** No Impact **Operation:** No Impact	**Construction:** No Impact **Operation:** No Impact **Comparative Impact:** Similar
Transportation and Traffic	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant

CEQA Resource Area	ALTERNATIVES	
	Site Alternative A (Preferred Alternative)	**Site Alternative B**
		Comparative Impact: Similar
Utilities and Service Systems	**Construction:** Less Than Significant **Operation:** Less Than Significant	**Construction:** Less Than Significant **Operation:** Less Than Significant **Comparative Impact:** Similar

NOTES:
1. Impacts based upon the potential impact assessed for each CEQA issue area and alternatives.
2. Comparative Impacts - The anticipated degree to which the environmental impacts of Site Alternative B are compared to the Site Alternative A are described in this table as "greater, similar, or less" for each CEQA issue area. These are referred to as the "comparative impacts."

5.3 Environmental Impacts

Site Alternative A and Site Alternative B would both meet the purpose and need discussed in Chapter 1.0, Purposed and Need and each would be a feasible site. Both alternatives would be expected to result in similar levels of impacts in all resource categories. However, there are differences in the extent of impacts that would be likely to result from construction and operation of the alternatives.

As shown in Table 5.1-1: Comparison of Alternatives, while Site Alternative B would not be expected to result in potentially significant impacts, this alternative would have more potential to result in impacts when compared to Site Alternative A (despite the conversion of a small amount of Prime Farmland) for the following CEQA issue areas:

- **Aesthetics:** The aesthetic impacts from Site Alternative B would be expected to be greater than those associated with Site Alternative A. In making this determination, various factors were considered, including the fact that Site Alternative B would be located roughly 300 feet slightly northeast of the nearest sensitive receptor (a residence). In comparison, Site Alternative A would be located roughly 0.25 mile (more than 1,300 feet) north of the nearest residence. The aesthetic changes that would occur as a result of the construction and operation of the Proposed Project would be more apparent with Site Alternative B than with Site Alternative A.

- **Air Quality:** Site Alternative B would require the demolition of an existing structure, which would require an increased use of equipment and vehicles during construction, and therefore, increased air quality emissions in comparison to Site Alternative A. While this increase in emissions would be relatively greater for Site Alternative B than for Site Alternative A, neither alternative would be expected to exceed established air quality emissions thresholds.

- **Greenhouse Gas Emissions:** Construction and operation scenarios, including the equipment, personnel, vehicles, and anticipated activities employed under Site Alternative B would be similar to Site Alternative A. However, Site Alternative B would require the demolition of an existing structure, which would require an increased use of equipment and vehicles during construction, and therefore, increased GHG emissions, as compared with Site Alternative A. While this increase in GHG emissions would be relatively greater for Site Alternative B than Site Alternative A, neither alternative would be expected to exceed applicable GHG emissions thresholds.

- **Hazards and Hazardous Materials:** Potential impacts associated with Site Alternative B would be expected to be less than significant. However, Site Alternative B is listed by the Department of Toxic Substances Control (DTSC) HAZNET database, and therefore, impacts associated with this site would be expected to be greater than impacts associated with Site Alternative A. Currently, Site Alternative B is listed on the DTSC HAZNET database as containing aged or surplus organics, which would be consistent with the current use of the site as a sod farm (EDR, 2011a). Development of Site Alternative B would require consideration for the workers during construction in order to avoid exposure to potentially harmful chemicals or materials.

- **Noise:** The noise impacts from Site Alternative B would be expected to be greater than those associated with Site Alternative A. In making this determination, SCE considered various factors, including the fact that Site Alternative B would be located roughly 300 feet slightly northeast of the nearest sensitive receptor (a residence). By comparison, Site Alternative A would be located roughly 0.25 mile (more than 1,300 feet) north of the nearest sensitive receptor (a residence). Site Alternative B would be expected to result in higher construction and operational noise levels at the nearest sensitive receptor in comparison to Site Alternative A.

Although Site Alternative B would not require the conversion of Prime Farmland (Agriculture and Forestry Resources) as in Site Alternative A, Site Alternative A would meet the purpose and need of the Proposed Project. Overall, Site Alternative A would be expected to result in less overall impacts to the CEQA issue areas when compared to Site Alternative B.