TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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CHAPTER 5 – ALTERNATIVES

5.0 Introduction

Consistent with the guidance document, Proponent's Environmental Assessment (PEA) Checklist, issued by the CPUC on November 24, 2008, this section evaluates electrical system alternatives, substation site alternatives, power line route alternatives, and a No Project Alternative. This evaluation explains why the Proposed Project and location were selected as the preferred alternative, which was proposed and analyzed in this PEA.

5.1 Alternatives Overview

The CPUC's Information and Criteria List requires a description of all reasonable alternatives to the Proposed Project or Proposed Project location that could feasibly attain the basic objectives, and an explanation of why the alternatives were rejected for the ultimate choice of the Proposed Project.

The following sections describe SDG&E's methodology for screening electrical system, substation site, and power line route alternatives. This chapter analyzes the alternatives SDG&E considered before determining to pursue the Proposed Project. This analysis explains why the Proposed Project was ultimately chosen, including that it achieves the project objectives at a reasonable cost, whereas the alternatives would not. In addition, the Proposed Project would not result in any significant environmental impacts.

CEQA and the CEQA Guidelines also require an analysis of alternatives when a project will have significant environmental impacts. When a project will not have significant environmental impacts, as with the Proposed Project, no analysis of alternatives is required by CEQA.

5.2 Electrical System Project Alternatives

5.2.1 Alternative Evaluation Methodology

Development of an electrical system project proposal includes identification of project objectives. These objectives for the Proposed Project are defined and explained in Chapter 1, PEA Summary, and listed below:

Proposed Project Objectives

1. Meet the area's projected long-term electric distribution capacity needs by constructing the proposed Salt Creek Substation near planned load growth to maximize system efficiency.
2. Provide three 69-kV circuits into the Salt Creek Substation to serve load growth in the region and meet the regulatory requirements of the North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC), and California Independent System Operator (CAISO).

3. Provide substation and circuit tie capacity that would provide additional reliability for existing and future system needs.
4. Reduce loading on area substations to optimum operating conditions, providing greater operational flexibility to transfer load between substations within the proposed Salt Creek Substation service territory.
5. Comply with and respect the outcome of the extensive community-based public process to select a site for a new substation in the Otay Ranch area, as evidenced by City of Chula Vista City Council Resolution 2011-073.
6. Meet Proposed Project needs while minimizing environmental impacts by siting the substation on property designated for future development that is located outside of the City of Chula Vista's Multiple Species Conservation Program (MSCP) Preserve.
7. Locate proposed new power facilities, as appropriate and as needed, within existing utility rights-of-ways (ROWs), access roads, and utility-owned property.

After identifying Proposed Project objectives, SDG&E conducted a three-step process, summarized below:

1. Develop alternatives that may meet the Proposed Project's need and objectives.
2. Evaluate each alternative in consideration of the extent to which an alternative could feasibly accomplish the Proposed Project's objectives.
3. Eliminate an alternative from further consideration if it is not feasible. If feasible, an alternative is the subject of full analysis in the PEA.

This chapter details this three-step process for an electrical system project alternative to meet projected electrical demand, substation site alternatives, and power line route alternatives.

5.3 Electrical System Evaluation

SDG&E plans ahead to ensure that necessary system facilities are developed in time to meet projected electrical demand. During this planning process, SDG&E evaluates existing facilities within the area and determines whether the existing electrical infrastructure can be modified to meet project objectives. If not, then SDG&E evaluates what new infrastructure is required and where it could be located to meet Project objectives. SDG&E considers the operating limits of a single substation, and evaluates the ability to transfer the load from that single substation to adjacent substations in the system. For the Proposed Project, this process identified the need for a new 69-kV substation and associated power lines, as described in Chapter 2, Purpose and Need.

The following sections describe the methodology for evaluating the existing electrical system, screen various alternatives for their ability to meet Proposed Project objectives, and explain why these alternatives were rejected in favor of the Proposed Project.

5.3.1 System Evaluation Methodology

Evaluating the system's ability to address identified needs consists of a four-step process. These steps are summarized below. The potential ability of various options to address the identified electrical need is presented in Section 1.4:

1. Perform technical engineering analyses to determine whether the forecasted peak electrical demand can be accommodated by modifying the existing electrical infrastructure.
2. If the forecasted electrical demand cannot be accommodated by modifying the existing electrical infrastructure (e.g., transferring load to an adjacent substation in the system is not feasible), then SDG&E identifies system options by considering feasible upgrades or additions to the existing electrical infrastructure.
3. SDG&E then evaluates each system modification option in consideration of the following criteria:
    - the extent to which a system modification would substantially meet project objectives, and
    - the feasibility of a system modification considering capacity limits, ability to upgrade the system on existing utility sites, and economic viability.
4. If a system modification is not feasible, then that alternative is eliminated from consideration. If it is feasible, then the alternative is retained for full analysis in the PEA, as required by CPUC General Order 131-D. If it is determined that a new electrical infrastructure project is required, then site location alternatives, including substation and power line route alternatives, are considered, as described in Section 5.4.

5.3.2 System Alternative Evaluation Discussion

SDG&E identified and evaluated three potential alternative modifications to the existing electrical system that could possibly address forecasted peak electrical demand in the Proposed Project region. SDG&E also evaluated the No Project Alternative. The following sections describe these alternatives and evaluate their ability to meet Proposed Project objectives, as outlined in Section 1.4 and listed above. The sections conclude with a brief description of the alternative that would meet demand in the Proposed Project service area, as described in Chapter 1, PEA Summary.

System Alternative 1: Expand Existing Area Substations to Increase Capacity

This alternative would expand existing area substations to increase local capacity, and possibly transfer load between different substations. Major components of this alternative are as follows:

- install new transformers and associated equipment;
- acquire land to increase size of existing substations and provide the necessary space for new equipment;

- potentially rebuild existing 69-kV circuits, converting them to double-circuit lines; and
- possibly install new underground duct and structure system throughout the area to carry new distribution circuits.

This alternative would provide a temporary solution to capacity limits, but it would not satisfy the need for an additional substation in the foreseeable future. This alternative does not meet the objective of meeting the area's projected long-term electric distribution capacity needs, nor does it optimize operating conditions. Therefore, this engineering option and alternative does not meet all of the Proposed Project objectives, and it was eliminated from further consideration.

System Alternative 2: A New 230/12-kV Substation Project

This alternative would construct a new 230/12-kV substation and associated equipment along the existing Transmission Corridor. This option would "loop-in" the existing 230-kV transmission line and avoid the need for a new power line component. Major components of this alternative are as follows:

- construct a new 230/12-kV substation along the existing ROW, and
- construct new underground 12-kV distribution circuits and connect to the existing network.

This option would relieve the anticipated overload through the planning horizon. This option would meet the existing capacity need, but not provide the system reliability desired. It would also require a larger substation pad, which would disturb a greater area of land. In addition, the City of Chula Vista and surrounding property owners were opposed to an overhead loop-in of the 230-kV line.

A new 230/12-kV substation would not meet the reliability objective for the Proposed Project because this higher-voltage non-standard substation would pose technical issues for transferring load between area 69/12-kV substations. In addition, there would be relay coordination issues associated with higher fault current. Since this engineering option would not improve system reliability, and because it would potentially create new technical system management challenges, it was eliminated from further consideration.

System Alternative 3: A New 69/12-kV Substation Project (Proposed Project)

This alternative would develop a new 69/12-kV substation within the needs area identified by SDG&E. Major components of this alternative are as follows:

- construct a new 69/12-kV substation within a 1.5-mile radius of the Existing Substation's overload area to maintain substation reliability criteria;
- loop-in the existing 69-kV power line (TL 6910) into the proposed substation; and
- construct approximately 5 miles of new 69-kV power line from the Existing Substation to a new substation site to meet NERC, WECC, and CAISO criteria and to provide reliability.

A new 69/12-kV substation would increase reliability of the existing distribution through various potential interconnections. The new 69/12-kV system could connect to the Existing Substation through open 69-kV transmission tie-lines and through the open 12-kV distribution circuit ties, thereby providing the capability to transfer load between substations under both normal and abnormal conditions. Such a system would require a smaller site than System Alternative 2.

System Alternative 4: No Project Alternative

Under the No Project Alternative, no action would be taken. This alternative would require SDG&E to serve the electrical needs of the area from existing substations, with no upgrades or modifications. As discussed in Chapter 2, Purpose and Need, SDG&E's current forecast shows that electric demand in the Salt Creek area would exceed existing capacity in 2016. The southeastern Chula Vista area is fed primarily from existing Telegraph Canyon and Proctor Valley Substations. The ultimate load for the area is 286-MW, a load that requires the Telegraph Canyon, Proctor Valley, and new Salt Creek Substations to each operate at optimal capacity. The Telegraph Canyon Substation is already at its maximum four-bank transformer configuration, with an 86% substation loading forecasted by 2016. Proctor Valley Substation is at a two-bank transformer configuration, with a loading of 92%.

The No Project Alternative would result in a reduced level of reliability, potentially leading to blackouts. This alternative would not meet the following Proposed Project objectives:

- meet the area's projected long-term electric distribution capacity needs by constructing a new substation near planned load growth to maximize system efficiency;
- provide three 69-kV circuits into the proposed Salt Creek Substation to serve load growth in the region and meet NERC/WECC/CAISO regulatory requirements;
- provide substation and circuit tie capacity that would provide additional reliability for existing and future system needs; and
- reduce loading on area substations to optimum operating conditions, providing greater operational flexibility to transfer load between substations within the proposed Salt Creek Substation service territory.

Nor does the No Project Alternative meet the remaining objectives regarding project location. It was, therefore, eliminated from further consideration.

5.3.3 System Alternative Recommendation

SDG&E recommends System Alternative 3, constructing a new 69/12-kV substation. It meets all of the Proposed Project objectives, as shown in Table 5-1. As discussed above, this engineering approach provides superior reliability and operational flexibility. It improves system reliability by providing additional transformer capacity in the Proposed Project area, and operational flexibility by enhancing the ability to transfer load between area substations. It provides the necessary infrastructure to meet anticipated future demands in the area.

5.3.4 System Evaluation Summary and Alternatives Eliminated from Further Consideration

Following the evaluation methodology discussed in Section 5.3.1, SDG&E eliminated system modifications that are infeasible or do not meet Proposed Project objectives as defined in Section 1.4, Project Needs and Alternatives. Those system alternatives eliminated from further consideration are listed below and shown in Table 5-1.

- System Alternative 1: Expand Existing Area Substations to Increase Capacity
- System Alternative 2: A New 230/12 kV Substation Project
- System Alternative 4: No Project Alternative

Table 5-1: System Alternative Evaluation Summary

Project Objective	**Alternative 1 Expand Area Substations**	**Alternative 2 New 230/12-kV Substation**	**Alternative 3 New 69/12-kV Substation and Associated Power Line**	**Alternative 4 No Action (No Project) Alternative**
Meet the area's projected long-term electric distribution capacity needs by constructing the proposed Salt Creek Substation near planned load growth to maximize system efficiency.	No	Yes	Yes	No
Provide three 69-kV circuits into the Salt Creek Substation to serve load growth in the region and meet the regulatory requirements of the North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC), and California Independent System Operator (CAISO).	No	No	Yes	No
Provide substation and circuit tie capacity that would provide additional reliability for existing and future system needs.	No	No	Yes	No
Reduce loading on area substations to optimum operating conditions, providing greater operational flexibility to transfer load between substations within the proposed Salt Creek Substation service territory.	No	Yes	Yes	No
Comply with and respect the outcome of the extensive community-based public process to select a site for a new substation in the Otay Ranch area, as evidenced by City of Chula Vista City Council	No	Yes	Yes	NA

Project Objective	Alternative 1 Expand Area Substations	Alternative 2 New 230/12-kV Substation	Alternative 3 New 69/12-kV Substation and Associated Power Line	Alternative 4 No Action (No Project) Alternative
Resolution 2011-073.				
Meet Proposed Project needs while minimizing environmental impacts by siting the substation on property designated for future development that is located outside of the City of Chula Vista's Multiple Species Conservation Program (MSCP) Preserve.	No	Yes	Yes	NA
Locate proposed new power facilities, as appropriate and as needed, within existing utility rights-of-ways (ROWs), access roads, and utility-owned property.	No	Yes	Yes	NA

NA = not applicable

As shown in Table 5-1, constructing a new 69/12-kV substation (System Alternative 3) would meet all defined Proposed Project objectives. In comparison, System Alternative 1 would not meet the area's projected long-term electric distribution capacity needs nor would it optimize operating conditions. System Alternative 2 would not provide system reliability, and the No Project Alternative would not address area needs or meet Proposed Project objectives.

System Alternative 3 is the only approach that adequately addresses long-term forecasted demand in the Proposed Project area and improves system reliability. Constructing a new 69/12-kV substation would meet all defined Proposed Project objectives. It would also provide space for future expansion, when needed. Therefore, System Alternatives 1, 2, and 4 were eliminated from further consideration, and System Alternative 3, constructing a new 69/12-kV system, was carried forward for analysis in this PEA.

5.4 Salt Creek Substation Site Alternatives

5.4.1 Substation Site Selection

SDG&E identified the substation site as the area that would meet the Proposed Project's objectives and optimize load balancing and power line lengths. Within the Proposed Project area and prior to purchasing the Salt Creek Substation site, SDG&E identified potential substation sites encompassing at least 8 acres and evaluated each potential site, applying a series of criteria. These criteria include the items listed below:

- Engineering Factors
    - Parcel size (minimum 8 acres) and shape – large enough to accommodate substation design

  - Proximity to existing 69-kV power lines
  - Proximity to load center
  - Adjacency to a fully developed non-utility congested street system
- Land Rights
  - Feasible land acquisition (without condemnation)
  - Cost
- Environmental Constraints
  - Located outside of MSCP Open Space Preserve
  - Minimize impacts to biological and cultural resources (on-site and off-site)
  - Land use/visual compatibility

Based on the criteria listed above, SDG&E identified eight possible substation sites. These eight substation site alternatives are shown in Figure 5-1, Alternative Substation Sites.

5.4.2 Salt Creek Area Site Alternatives

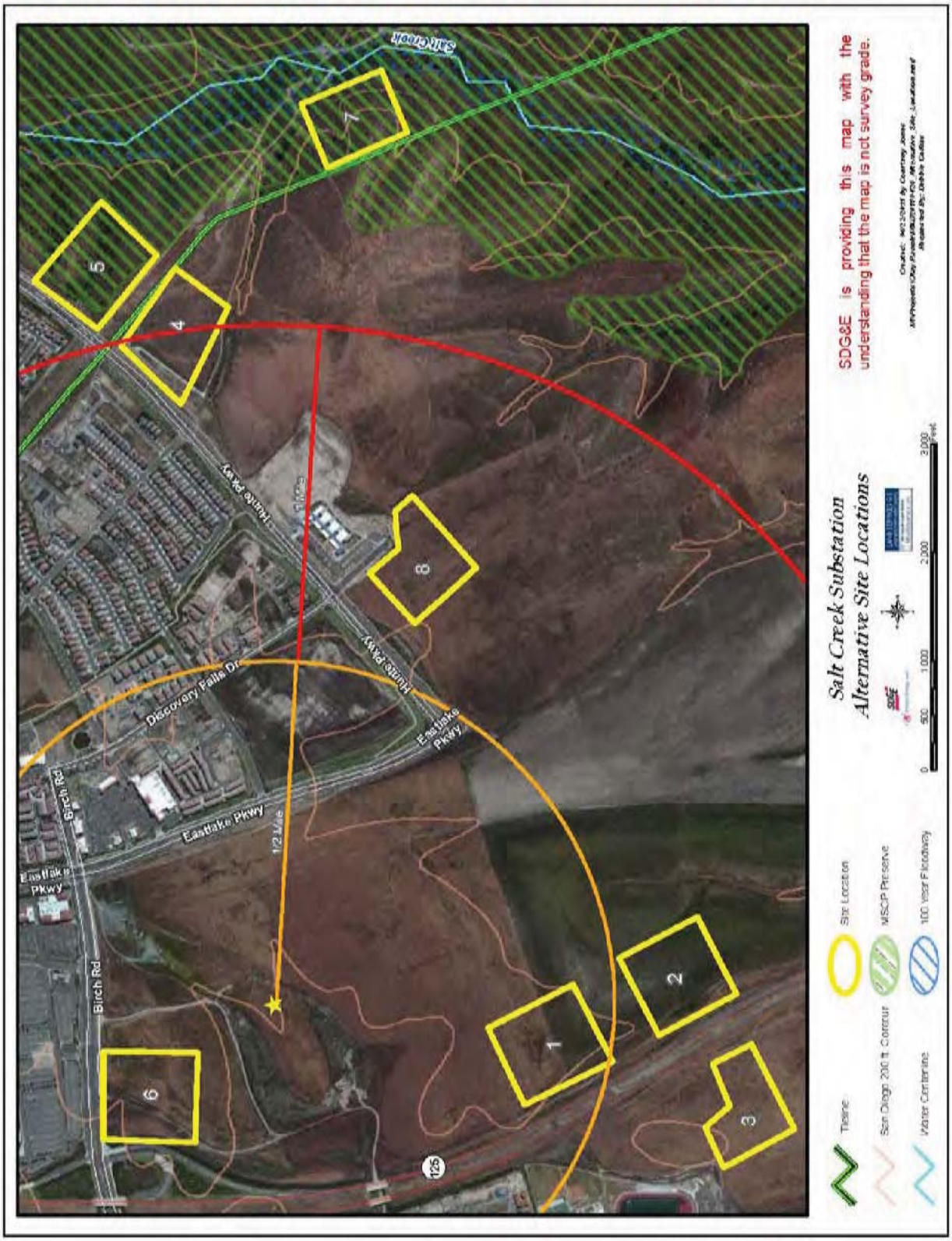
SDG&E considered eight potential alternative sites for the new 69/12-kV Salt Creek Substation. SDG&E evaluated each site for its ability to accommodate anticipated equipment and designs. These alternatives are shown in Figure 5-1 and discussed in the following sections.

The new substation site selection process consisted of two separate evaluations of alternative site locations. The first evaluation occurred from 2002 through mid-2008. SDG&E participated in the City of Chula Vista's University Framework Committee that was responsible for developing a University Framework Plan that included an acceptable location for a new substation. Five sites (Alternatives 1 through 5) were identified and evaluated by the University Framework Committee.

In early 2007, after extensive discussion and consideration of substation site alternatives, a proposed substation site (Hunte West) was identified as the then-preferred location for the new substation. SDG&E then worked with the City of Chula Vista for 2 years to develop a site/grading plan for the preferred site. The site acquisition process was suspended in 2008 when the City of Chula Vista entered into a Land Offer Agreement with the adjacent property owner, and the property appeared to be no longer available for development of a substation. This resulted in the need to re-analyze alternative site locations.

Between mid-2008 and early 2011, five other alternative sites were evaluated, including two that were considered in the initial site selection process. Based on changes in circumstances in early 2011, the site location that was initially determined to be preferred substation site (Hunte West) became available again as a viable location for the Salt Creek Substation. It was still the preferred substation site.

Figure 5-1: Alternative Substation Sites



5.4.2.1 Sites Eliminated from Further Consideration

Based on the site selection criteria listed above, Sites 1, 2, 3, 5, 6, and 7 were eliminated from further consideration in this PEA, as summarized in Table 5-2, Alternative Substation Sites Evaluation Summary. Each site presented potential "fatal flaws" related to environmental conditions or ownership support, as explained further below. Therefore, these six sites were eliminated from further consideration, and the effort focused on identifying a site location with ownership support and that avoided and minimized environmental impacts.

Table 5-2: Alternative Substation Sites Evaluation Summary

Substation Site (Alternative Number)	Alternative Name	Evaluated or Eliminated	Reason for Elimination
1	Future Eastern Urban Center	Eliminated	No property owner or City of Chula Vista support
2	Village 9	Eliminated	No property owner or City of Chula Vista support
3	Regional Technology Park	Eliminated	No property owner or City of Chula Vista support
4	Hunte West	Evaluated	NA
5	Hunte East	Eliminated	Inside MSCP Preserve
6	McMillan Eastern Urban Center	Eliminated	No property owner support
7	Baldwin Offer	Eliminated	Inside MSCP Preserve
8	Discovery Falls	Evaluated but eliminated	No City of Chula Vista support

NA = not applicable

Alternatives 1, 2, and 3 were rejected from further consideration due to being located in an undeveloped area with no access to a public ROW, and due to property rights impacts to adjacent private lands being extensive and costly. For the remaining five alternative sites, there were two primary factors influencing the ultimate acceptability and approvability of the preferred site location. In December 2010, SDG&E met with staff from the City of Chula Vista, USFWS, and CDFW to discuss siting considerations and specific alternative sites. The agencies agreed that the substation should be located outside of the City of Chula Vista's Multiple MSCP Preserve to avoid impacts to biological resources within the Preserve, since feasible locations were identified outside of the Preserve. Thus, from an environmental and regulatory perspective, the preferred location must be located outside of the Preserve. This environmental constraint eliminated two of the five sites as being infeasible alternatives (Alternatives 5 and 7).

The three other candidate sites (4, 6, and 8) evaluated were located outside of the MSCP Preserve boundary and within areas designated for development. However, Alternative 6 did not have support from the property owner and was eliminated from consideration. Based on the regulatory agency guidance and lack of property owner support, only two sites, Hunte West and Discovery Falls, were carried forward for consideration.

Alternative 4, Hunte West (Proposed Project Location)

Alternative 4, Hunte West, was the Preferred Substation Site in the original site selection process from 2002 to 2008, until it became unavailable. Due to a change in circumstances, the Hunte West site became available again in February 2011. A second review of this location reconfirmed its identification as the preferred site for the proposed substation. Two key factors supported this conclusion: it is located outside of the Preserve and it is the only candidate that had the support of both the City of Chula Vista and the property owner. Additional positive attributes are as follows:

- adjacency to the Transmission Corridor provides the opportunity to develop a 69/12-kV or 230/12-kV substation, and eliminates the need to construct a new connecting transmission corridor;
- no known cultural resource issues;
- no hazardous materials issues based on the results of the Phase I study;
- adjacency to a fully developed non-utility-congested street system (Hunte Parkway);
- location below Hunte Parkway and the residences to the north, providing both a horizontal and vertical visual and land use buffer from Hunte Parkway and residents to the north; and
- good distribution circuit access.

Alternative 8, Discovery Falls

Alternative 8 would be located west of Discovery Falls Road and the High Tech Schools, approximately 0.35 mile west of the proposed substation site, south of Hunte Parkway outside of the MSCP Preserve boundary, and within areas designated for development. Alternative 8 was studied as a potential location for the substation since it was located near the load center, existing Transmission Corridor, and existing access roads, and is also located outside of the MSCP Preserve. However, the City of Chula Vista was not supportive of this location, since it was not compatible with the City of Chula Vista's planning objectives for the University SPA. Subsequent to determining that the City of Chula Vista was not supportive of this location, the Hunte West site location (Alternative 4) became available again for development of the proposed substation. The City of Chula Vista expressed its support for Alternative 4 by adopting City of Chula City Council Resolution 2011-073. Therefore, Alternative 8 was rejected from further consideration as a viable alternative, and Alternative 4, Hunte West, is carried forward in this PEA as the proposed Salt Creek Substation site. SDG&E purchased the 11.6-acre Hunte West site (Alternative 4) in June 2011.

5.5 Power Line Alternatives

SDG&E identified and evaluated five power line alternatives for connecting the proposed Salt Creek Substation to the Existing Substation. These included three overhead alternatives and two underground alternatives.

5.5.1 Evaluation Methodology

To identify potential power line route alternatives within the Proposed Project area, SDG&E considered the factors listed below:

- Existing transmission facilities
- Existing transmission and distribution ROWs
- Ground topography and slope steepness
- Line route distance between substations
- Proximity to existing and planned roads
- Aesthetics of individual line segments

Alternative 69-kV Power Line Route Descriptions

SDG&E considered several overhead and underground alternatives for the 69-kV power line between the Existing Substation and the proposed Salt Creek Substation. Each overhead alternative and one underground alternative would be located within the existing Transmission Corridor between the Existing Substation and the proposed Salt Creek Substation. The second underground alternative would pass through residential neighborhoods, following a series of existing residential and commercial streets. The power line alternatives are as follows:

- Alternative 1. Loop-In TL 6910 and Reconductor Five Additional Transmission Lines
- Alternative 2. Rebuild TL 6910 from the Existing Substation to Salt Creek to Twin Circuit and Loop-In to Salt Creek Substation
- Alternative 3. Loop-In TL 6910 and Build New 69-kV Overhead Single Circuit from the Existing Substation to Salt Creek Substation (in existing ROW)
- Alternative 4. Loop-In TL 6910 and Build New 69-kV Underground Double Circuit from the Existing Substation to Salt Creek Substation (in Public ROW)
- Alternative 5. Loop-In TL 6910 and Build New 69-kV Underground Double Circuit from the Existing Substation to Salt Creek Substation (in existing ROW)

As discussed below, Alternatives 1, 2, 4, and 5 are either infeasible or undesirable, with extensive environmental impacts.

5.5.2 Overhead Power Line Alternatives

Three overhead power line alternatives were considered. Each of these three alternatives is summarized below.

Alternative 1. Loop-In TL 6910 and Reconductor Five Additional Power Lines

This alternative would require line upgrades, including rebuilding and reconductoring five different power lines (approximately 25 miles), to meet system operating criteria. This alternative is considered undesirable, as the estimated cost of the reconductors would be $84 million. In addition, this alternative would result in greater effects to residents throughout the region by necessitating approximately 25 miles of transmission line improvements, as compared to the 5 miles proposed under the Proposed Project. This alternative does not meet the Proposed Project objective to provide a third transmission source into the proposed substation to serve load growth in the region to sufficiently meet NERC, WECC, and CAISO regulatory requirements. Therefore, this power line alternative was eliminated from further consideration.

Alternative 2. Rebuild TL 6910 from the Existing Substation to Salt Creek to Twin Circuit and Loop-In to Salt Creek Substation

Rebuilding existing power line TL 6910 and converting it to a double-circuit line would eliminate the need for a new power line component. However, this alternative would require the acquisition of additional ROW across private property on land located adjacent to and west of the existing Transmission Corridor. Acquiring additional ROW would likely impact existing land uses on private property adjacent to the Transmission Corridor, including displacing some residents at considerable cost. With the construction cost at $32 million, and displacement of residences, it was concluded that this alternative is undesirable and was eliminated from further consideration.

Alternative 3. Loop-In TL 6910 and Build New 69-kV Overhead Single Circuit from the Existing Substation to Salt Creek Substation (in Existing ROW)

Building a new overhead 69-kV line to the proposed Salt Creek Substation within the existing Transmission Corridor is feasible with minimal impacts because it would use previously disturbed land where power lines already exist. This option would not require upgrading other transmission lines, nor would it require additional land acquisition. In addition, at $18.9 million, the cost is the lowest in comparison to the other alternatives.

5.5.3 Underground Alternatives Evaluated

Two underground alternatives were considered for the 69-kV power line between the Existing Substation and the proposed Salt Creek Substation. A summary of the evaluation for these two underground alternatives is presented below.

Alternative 4. Loop-In TL 6910 and Build New 69-kV Underground Double Circuit from the Existing Substation to Salt Creek Substation (in Public ROW)

Building a new underground 69-kV power line to the proposed Salt Creek Substation would eliminate the potential for new visual impacts associated with an overhead power line. Therefore, it was considered and evaluated further.

This underground alternative would be constructed in public ROWs, including in residential and busy commercial streets. As such, this alternative would have substantially greater traffic impacts than the Proposed Project. In addition to traffic, air quality and noise impacts to residents would be greater. Also, the cost of undergrounding power lines would be considerably higher, at $62.5 million. While this alternative would meet most Proposed Project objectives, the proposed overhead alternative is superior to this underground alternative because it is more cost effective and would have fewer traffic, air quality, and noise impacts.

Alternative 5. Loop-In TL 6910 and Build New 69-kV Underground Double Circuit from the Existing Substation to Salt Creek Substation (in existing ROW)

Building a new underground 69-kV power line to the proposed Salt Creek Substation would eliminate the potential for new visual impacts associated with an overhead power line. Therefore, it was considered and evaluated further.

This underground alternative would be constructed within the existing Transmission Corridor. Some underground portions of this alignment would be infeasible due to severe elevation and grade changes that exceed current undergrounding standards. In addition, underground construction immediately adjacent to two high-pressure natural gas pipelines along the southern portion of the power line would substantially increase potential safety hazards compared to the proposed overhead power line. As such, these segments would require overhead construction, thus creating similar visual impacts as the proposed overhead alternative, while air quality and noise impacts would be greater due to the underground component. Freeway crossings would entail extensive boring operations. Potential impacts to biological and cultural resources would also be greater by undergrounding the entire corridor. Lastly, the cost of undergrounding the power lines would be significantly higher than other alternatives, at $184 million. Therefore, while this alternative would meet some Proposed Project objectives, the proposed overhead alternative is superior to this underground alternative because it is more cost effective, safer, and would create fewer air quality, biological, cultural, and noise impacts.

5.5.4 Power Line Alternative Evaluation Summary and Recommendation

SDG&E recommends constructing the new 69-kV power lines within the existing Transmission Corridor, extending south from the Existing Substation to the proposed Salt Creek Substation. This Transmission Corridor would includes both the existing 230-kV transmission line (TL 23042) and an existing 69-kV power line (TL 6910).

SDG&E examined five alternative 69-kV power line alternatives (Table 5-3, Power Line Alternative Evaluation Summary). Four of the five were either infeasible or undesirable due to cost and potential impacts. Following this evaluation, it was determined that building a new overhead 69-kV power line to the proposed Salt Creek Substation within the existing Transmission Corridor would be feasible and cost-effective, with no significant environmental impacts. Therefore, it was concluded that this is the superior power line alternative, and it is carried forward as part of the Proposed Project.

Table 5-3: Power Line Alternative Evaluation Summary

Project Objective	Loop-In TL 6910 and Reconductor Five Additional TLs	Rebuild TL 6910 from the Existing to Salt Creek as Twin Circuit	New 69-kV Overhead Single Circuit in Existing ROW	New 69-kV Underground Double Circuit in Public ROW	New 69-kV Underground Double Circuit in Existing ROW
Meet the area's projected long-term electric distribution capacity needs by constructing the proposed Salt Creek Substation near planned load growth to maximize system efficiency.	No	Yes	Yes	Yes	Yes
Provide three 69-kV circuits into the Salt Creek Substation to serve load growth in the region and meet the regulatory requirements of the North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC), and California Independent System Operator (CAISO).	No	Yes	Yes	Yes	Yes
Provide substation and circuit tie capacity that would provide additional reliability for existing and future system needs.	Yes	Yes	Yes	Yes	Yes
Reduce loading on area substations to optimum operating conditions, providing greater operational flexibility to transfer load between substations within the proposed Salt Creek Substation service territory.	Yes	Yes	Yes	Yes	Yes
Comply with and respect the outcome of the extensive community-based public process to select a site for a new substation in the Otay Ranch area, as evidenced by City of Chula Vista City Council Resolution 2011-073.	Yes	Yes	Yes	Yes	Yes
Meet Proposed Project needs while minimizing environmental impacts by siting the substation on property designated for future development that is located outside of the City of Chula Vista's Multiple Species Conservation Program (MSCP) Preserve.	Yes	Yes	Yes	Yes	Yes
Locate proposed new power facilities, as appropriate and as needed, within existing utility rights-of-ways (ROWs), access roads, and utility-owned property.	Yes	No	Yes	No	Yes

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