
CHAPTER 6: PROJECT ALTERNATIVES

6.1 Introduction

The California Environmental Quality Act (CEQA) Guidelines (§15126.6 *et. seq.*) requires that a range of reasonable alternatives to the proposed project be evaluated in this Draft Environmental Impact Report (DEIR) for the Riverside Transmission Reliability Project (RTRP or Proposed Project). CEQA Guidelines (Section 15126.6) state the following:

- (a) An EIR shall describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.
- (b) The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.
- (c) The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.
- (d) The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.
- (e) The EIR shall include the evaluation of the "No project" alternative.
- (f) The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

6.1.1 OBJECTIVES

The following objectives were developed in support of the Proposed Project Purpose and Need (see Chapter 1):

- Provide sufficient capacity, in a timely manner, to meet existing electric system demand and anticipated future load growth;
- Provide an additional point of delivery for bulk power into the RPU electrical system,

thereby reducing dependence on Vista Substation and increasing overall reliability (see Figure 1.4-2 in Chapter 1);

- Split and upgrade the subtransmission electrical system as a function of prudent utility practice;
- Meet Proposed Project need while minimizing environmental impacts; and
- Meet Proposed Project need in a cost-effective manner.

These objectives guided the lead agency in developing a range of reasonable alternatives to the Proposed Project or to the location of the Proposed Project, and should aid the decision makers in preparing, if necessary, findings or statements of overriding consideration.

A number of alternatives were considered and either eliminated or kept for further consideration. Alternatives were eliminated from further consideration when they failed to meet most of the basic project objectives, were infeasible, or would not avoid significant environmental impacts. Alternatives kept for consideration for the Proposed Project were evaluated in detail and described within this chapter.

The reasonable routing and siting alternatives, including the Proposed Project routes and substation sites, documented in this chapter were identified through an environmental analysis process that sought to avoid or substantially reduce any potentially significant effects of the Proposed Project, while satisfying the Proposed Project's objectives (refer to Chapter 1). Ultimate route identification occurred through an iterative process of route refinement based on environmental investigations including pre-engineering of centerlines, preliminary structure spotting, and access road layout to avoid and minimize impacts. The challenges of this process were exacerbated by the Proposed Project's location in a highly urbanized setting with rapid growth and development. This process combined a technical resource study with a coordinated public outreach effort. The process described in this chapter allowed elimination of large areas from routing consideration due to infeasibility, identified reasonable and potentially feasible alternative routes for the 230 kV and 69 kV lines, and compared and contrasted the alternatives to facilitate decision-making by RPU and SCE, the co-proponents of the Proposed Project (also refer to Section 6.2). Alternatives considered and eliminated from consideration for the Proposed Project are identified and documented in Section 6.4. The potentially feasible alternatives to the Proposed Project are described at the end of this chapter, including the No Project Alternative. The Environmentally Superior Alternative ~~(the Proposed Project) for both the 230 kV transmission and 69 kV subtransmission portions of the Proposed Project~~ is also identified and discussed.

6.2 Development of Routing and Siting Alternatives

RPU and SCE engineers previously examined alternative interconnection points, transmission line routes, and substation sites prior to the current interconnection studies and the subsequent Initial Study/Notice of Preparation (IS/NOP) prepared for the RTRP in November, 2009. This section documents siting and routing alternatives identified, considered, and eliminated during the preparation of the environmental Technical Reports (Appendix B) and in the development of this DEIR.

6.2.1 230 KV TRANSMISSION LINE ROUTES

A significant challenge in developing the RTRP alternatives has been the siting of a new double-circuit 230 kV transmission line within a matrix of diverse jurisdictions, a highly urbanized setting with rapid growth, and restricted open space preserves. Alternative routes were considered and eliminated from detailed evaluation because they are infeasible alternatives, due to various factors described below. In some instances, modification of some routes beyond the boundaries of their original study corridors was found to reduce impacts to acceptable levels and enhance feasibility. As a result, some line routes first identified in these early studies are potentially feasible for the RTRP and were carried forward for detailed evaluation.

230 kV Siting Study

In the June 2006 230 kV Transmission Line Siting Study (Appendix D) SCE and RPU evaluated a number of environmental resources as well as engineering constraints in order to identify reasonable alternatives for the proposed 230 kV transmission line. Those routes identified through the siting study process were then used in development of the draft EIR while additional data were collected and comments received. A brief description of the siting study is provided in this section to explain the process of identifying alternatives which were evaluated for potential impacts, and selection of the preferred route within this DEIR. The primary objectives of the 230 kV Siting Study were to:

- Identify potentially feasible alternative transmission line routes that would accommodate the proposed RTRP facilities.
- Determine the potential feasibility of permitting and licensing the alternative line routes.
- Recommend alternative line routes that should receive further study or action.

The first step of the siting study was to identify the study area in which a transmission line could reasonably be located to fulfill the objectives of the Proposed Project within the framework of the project concept approved by the CAISO Board of Governors in 2006. The Board of Governors granted its approval for the Proposed Project presented to them as “Option 1-Loop the existing Mira Loma-Vista #1 230 kV line by building 8.25 miles of new 230 kV double circuit transmission line from the existing Mira Loma-Vista #1 [transmission line right-of-way] to into a new 230 kV SCE interconnection facility with RPU’s new Jurupa Substation in Riverside.” (Note: The “Jurupa Substation” was renamed the Wilderness and Wildlife substations.) The resulting 230 kV study area measured approximately 41,720 acres (approximately 65 square miles) and was delineated to encompass all of the potentially feasible RTRP 230 kV transmission line alternatives based on the 230 kV Proposed Project concept of making a connection between a point on the Mira Loma - Vista #1 230 kV transmission line and a city-owned site to be developed into Wildlife Substation. Analysis of alternatives outside of this delineated study area would necessarily substantially increase the length of the transmission alignments, and associated environmental impacts such as air quality emissions from trenching and construction, impacts to residences and public facilities associated with line crossings, and visual impacts caused by the extended transmission line; therefore, considerations of alignments outside of the study area were not brought forward for further analysis. This is discussed further in Section 6.4-1. The study area was utilized as the basis for data inventory and mapping and sensitivity analyses.

The northern boundary is defined by the location of the existing Mira Loma - Vista #1 230 kV transmission line owned and operated by SCE. The eastern boundary parallels the existing SCE 230 kV transmission lines then curves south, generally paralleling the urbanized area of the City of Riverside and the Santa Ana River corridor. The southern boundary parallels the Santa Ana River corridor and includes the RERC Substation and the proposed Wildlife Substation site. The western boundary of the study area generally follows Interstate 15 (I-15) and the existing residential development along the highway. Because this area encompassed all possible paths extending generally from north to south from the Mira Loma – Vista #1 line to the proposed substation site, no reasonable and feasible routes exist outside of the perimeter of this study area. Due to the extended size of the study area, it was concluded that it would be infeasible to consider siting the Proposed Project or any alternatives outside of previously defined boundaries; the study area, as delineated, encompassed all reasonable potential routes between the Proposed Project components.

The second step involved gathering environmental resource data within the study area. Inventory data were collected for six land use and resource disciplines: land uses, visual resources, wildlife and botanical resources, cultural resources, water resources, and geohazards. Resource data were then mapped utilizing a geographic information system (GIS), and ground reconnaissance was completed to verify and supplement inventory mapping.

Once inventory mapping was completed, the third step was a sensitivity analysis for each resource studied. Sensitivity is defined as a measure of probable adverse response of a resource to direct and indirect impacts associated with the construction, operation, and maintenance of Proposed Project components. The mapped inventory data was analyzed and assigned relative sensitivity values. Sensitivity maps were developed for land use, cultural, biological, and water resources, and geohazards. Sensitivity levels were categorized as exclusion, high avoidance, moderate avoidance, or low avoidance.

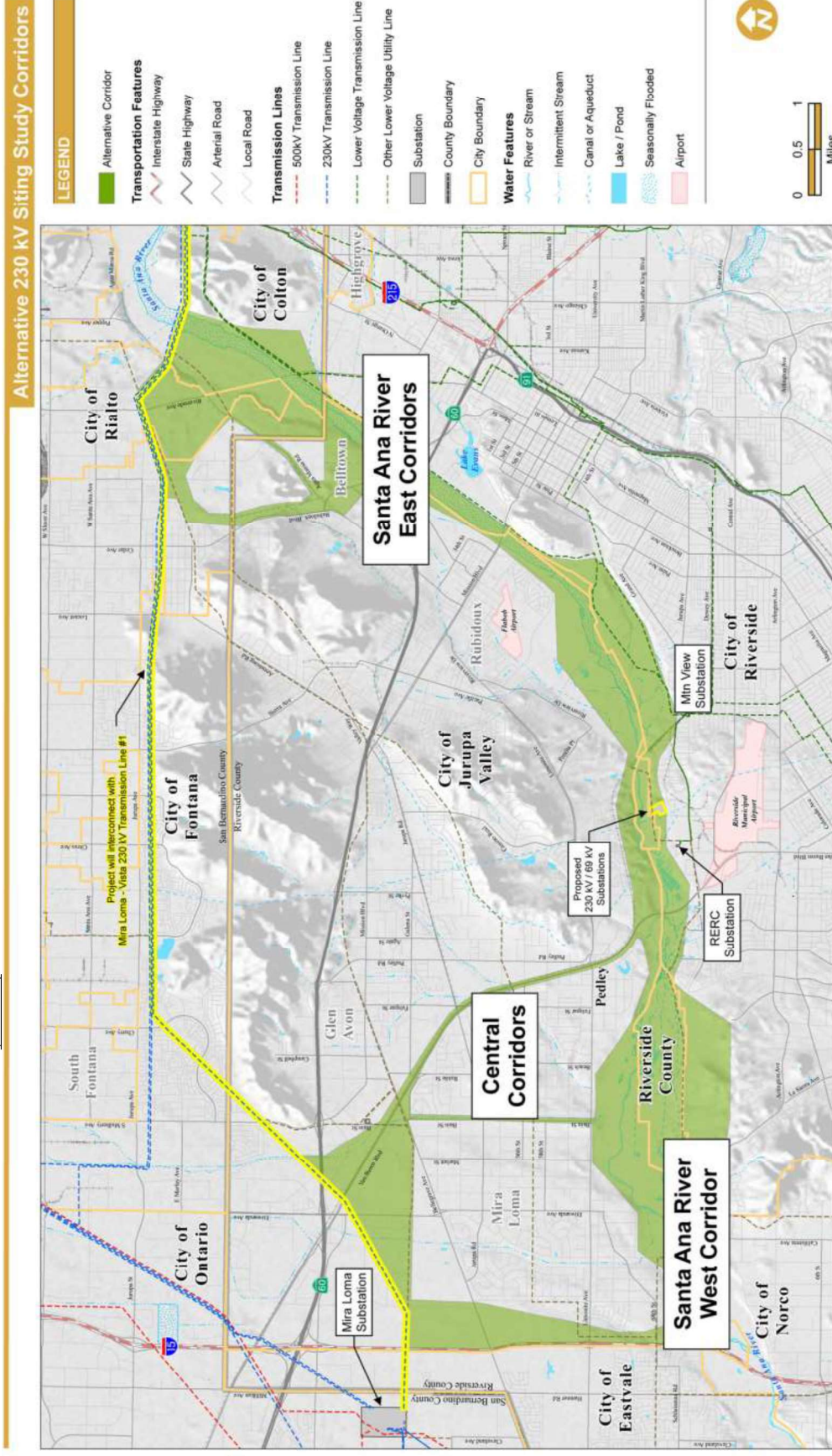
Areas of low sensitivity and linear features (e.g., roadway corridors, existing transmission lines, pipelines, channels) were considered siting opportunities for the transmission line. Exclusion areas and other areas identified as being sensitive to siting the 230 kV transmission line were mapped, and the constraint levels determined by combining all sensitive resource maps. Because of their high sensitivity level and potential for impacts, all areas of dense urban development were identified as Exclusion areas and were subsequently excluded from siting consideration. Areas of dense urban development were excluded from siting consideration due to a lack of routing options for a high voltage transmission line and the need for an adequate right-of-way (ROW) to accommodate the transmission line. Dense urban areas also typically contain high numbers of sensitive receptors including homes, commercial and industrial developments, and schools. Approximately half of the study area was eliminated from further consideration (refer to pages 4-4 and 5-1 through 5-9 of the Siting Study Report and Map 11 in the Technical Appendices).

Following the mapping of resource sensitivity constraints, GIS layers were overlaid to create a composite sensitivity map. Utilizing this map to avoid highly sensitive receptors, corridors were identified in which transmission lines could be routed. The Santa Ana River corridor was considered highly sensitive, which was defined as areas where significant impacts would likely be found. Nevertheless, some roadway and utility corridors located within the river corridor offered potential siting opportunities, and alternatives to be studied further for consideration of

potential Proposed Project alternatives were identified. The three general corridors identified through the Siting Study process are shown in Figure 6.2-1 Alternative 230 kV Siting Study Corridors. The corridors included the “Santa Ana River West Corridor,” “Central Corridor,” and the “Santa Ana River East Corridor.” Each of these corridors is described in the following subsections.

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FIGURE 6.2-1. ALTERNATIVE 230 kV SITING STUDY CORRIDORS (REVISED)



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Santa Ana River West Corridor

The Santa Ana River West Corridor generally follows the Santa Ana River from the proposed Wildlife Substation west to I-15, covering the entire width of the river channel from between 1/3 of a mile to 1 ½ miles at the widest section. South of 68th Street, the Corridor turns north, paralleling the eastern side of I-15 to the Mira Loma – Vista #1 230 kV transmission line. The Corridor widens near Limonite Avenue to encompass existing commercial and agricultural areas.

Alternative routes within this corridor were originally eliminated from further study due to impacts to existing commercial and residential development adjacent to I-15. However, upon further investigation, an alternative was successfully sited through the area and subsequently became part of the Proposed Project as described below and in Chapter 2 (I-15 Route).

Central Corridor

Two alternative corridors were identified in the central-western portion of the Proposed Project study area (refer to Figure 6.2-1). The first follows the Santa Ana River West Corridor from the proposed Wildlife Substation to Bain Street (Figure 6.2-2). There are residential areas on both the west and east sides of the street on the Bain Street corridor; however, a flood control channel separates the street and the residences on the east side of the street. This corridor follows Bain Street north to Bellegrave Avenue. At this point, the Corridor widens to encompass the Union Pacific Railroad Automobile Distribution Center and other industrial complexes, with the southern edge following existing SCE transmission lines to the existing SCE Mira Loma – Vista #1 230 kV transmission line. The northeastern edge of this Corridor follows Van Buren Boulevard to the existing SCE Mira Loma – Vista #1 230 kV transmission line, which forms the northwestern boundary.

The second corridor follows the Santa Ana River West Corridor from the proposed Wildlife Substation to Van Buren Boulevard (Figure 6.2-2). The corridor then follows Van Buren Boulevard and the Union Pacific Railroad north to the Mira Loma – Vista #1 230 kV transmission line near the Union Pacific Railroad Automobile Distribution Center.

Initially, potential routes within this corridor would have followed the same path north from the proposed substation location, crossing the Santa Ana River almost immediately. During further investigation and route refinements, numerous possible crossing points were explored.

Santa Ana River East Corridor

The Santa Ana River East Corridor follows the Santa Ana River from the proposed Wildlife Substation in a broad swath sweeping to the northeast (refer to Figure 6.2-1). The corridor encompasses the entire river corridor to the Mira Loma – Vista #1 230 kV transmission line, approximately two miles west of Vista Substation.

North of the Riverside-San Bernardino County Line, the corridor widens further to include the predominantly industrial and agricultural areas on the north side of the Santa Ana River. The corridor includes those areas to the east and west of Riverside Avenue.

At Market Street, a secondary corridor branches off from the main corridor along the Santa Ana River, following Market Street north to Agua Mansa Road. The corridor then heads to the north

and northeast. The north corridor generally follows Rubidoux Boulevard to Mira Loma – Vista #1 230 kV transmission line, about 0.5 mile north of the Riverside/San Bernardino County Line. Another section of the corridor, heading northeast from Market Street, follows Agua Mansa Road from Market Street to Mira Loma – Vista #1.

A variety of link combinations resulting in end-to-end routes were investigated at a high level for both engineering feasibility and environmental impacts.

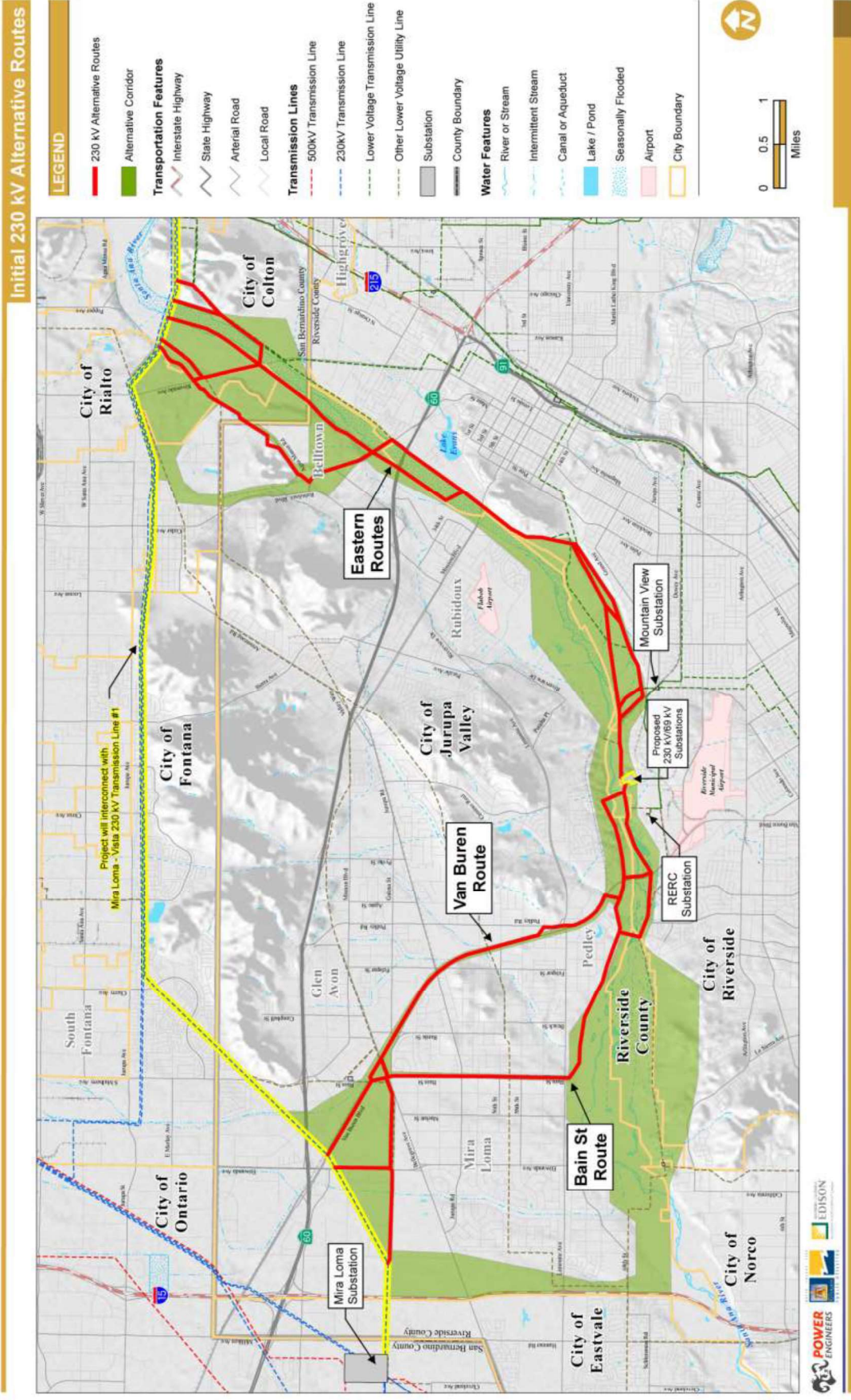
Eastern Route

The Eastern Route, as originally sited, would leave the proposed 230 kV Wildlife Substation to the east along the south side of the Santa Ana River, crossing over the Union Pacific Railroad and through the Martha McLean Anza Narrows Park, then following an existing electric distribution line east and along the south side of the river. A localized alternative segment that would avoid the Martha McLean Anza Narrows Park was identified within this area (refer to Figure 6.2-2). This localized alternative would be sited on the north side of the river, within dense riparian vegetation within the immediate Santa Ana River corridor.

The Eastern Route would continue northeast along the south side of an old landfill and below the river bluff until it reaches the established flood control levees. The route would then be located in the flood control ROW, and could be located on top of, on the sideslope of, or at the toe of the levee slopes and other flood control structures. Continuing northeast parallel to the river and eventually crossing to the north side of the Santa Ana River, approximately 0.5 mile south of Highway 60, the route would pass several industrial businesses. The route continues along the north edge of the river corridor, above the riparian zone, and through the San Bernardino County Flood Control District water treatment facility to the loop-in point on the Mira Loma – Vista #1 230 kV transmission line (refer to Figure 6.2-2).

Once these corridors were established, alternative routes for the transmission line were identified within each. Following identification of the transmission line routes, field reconnaissance was performed to verify the feasibility of each route. In some cases, multiple iterations of route refinement, revision, and reinvestigation were conducted before ultimate advancement or dismissal.

FIGURE 6.2-2. INITIAL 230 KV ALTERNATIVE ROUTES (REVISED)



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230 kV Route Identification and Refinements

Following the original identification of routes for the double-circuit 230 kV transmission line, modifications and additions were made as a result of engineering consideration, public and agency comment, elected official briefings, and environmental impacts. This on-going iterative process of continual route revision and refinement with RPU and SCE led to the corridors that are included in the complete and final “network” of 230 kV routes evaluated in detail within this DEIR. These include the Van Buren Offset Alternative and the I-15 Alternative, which has been identified as the Proposed Project and is described in detail within Chapter 2. The complete network of 230 kV routes that have been evaluated in varying detail is shown on Figure 6.2-3 and is described below.

Limonite Ave. Route

Investigations were conducted to evaluate the potential for a double-circuit 230 kV transmission line adjacent to Limonite Avenue, between Van Buren Boulevard and I-15 (see Figure 6.2-3) to create a route tying together the Central and Santa Ana River West Corridors. Variations of this potential alternative exist, depending on what point the route leaves the north side of the Santa Ana River to travel along Limonite Ave., between Van Buren Boulevard and I-15. For purposes of this DEIR, the potential conflicts with this alternative route have been evaluated for the entire distance between Van Buren Boulevard and I-15.

Bain Street Route

Following the initial siting of this route, it was refined to take into account several engineering concerns of the route along the north bank of the Santa Ana River between Van Buren Blvd. and Bain St. Several slight adjustments were made and are reflected in Figure 6.2-3.

Van Buren “Offset” Route

The Van Buren Alternative was originally sited within the Union Pacific Railroad corridor, specifically located between Van Buren Blvd. and the railway. Upon further investigation and communication with Union Pacific (UPRR 2006, 2007), this alternative was eliminated due to infeasibility of placing a high voltage transmission line within a railroad ROW. This infeasibility is based upon the inability to obtain access to railroad ROW, the potential for induction effects if the Project’s electrical lines were located nearby the railroad, and other factors. However, the Van Buren Alternative was refined by SCE and a revised version of the alternative was identified and became the current version of the Van Buren Alternative that is evaluated in detail within Section 6.5 of this chapter (Van Buren Offset Alternative).

The current Van Buren Offset Route proceeds directly north from Wilderness Substation to immediately cross the Santa Ana River, and then heads west to traverse the slope above the north bank of the river and then cross over Van Buren Boulevard. After crossing the Union Pacific railroad tracks, the route continues to head northeast for a short distance just west of Clay St. The main difference between the original route and this version is the location from this point heading north as it parallels the Union Pacific Railroad. The route would be “offset” to the east side of the railroad ROW by approximately 150 feet. This would locate the route within many private parcels. The route would also require three crossings of the railroad ROW before connecting with the Mira Loma - Vista #1 230 kV transmission line.

Eastern Route

In April 2010, SCE conducted a Preliminary Geology and Geotechnical Evaluation (SCE 2010) that compared the Eastern Route to the Van Buren Offset Alternative as well as to the I-15 Route. According to SCE's evaluation, "from the perspective of foundation, and structure integrity, access, and long term maintenance, the Western [I-15 Route] and Van Buren [Offset] alternatives both are clearly more favorable than the Eastern Alignment Alternative." SCE's evaluation at that time indicated that, overall, the Eastern Route would place 40 structures in flood zone location conditions that could jeopardize the foundation and structure integrity of the double-circuit 230 kV transmission line. Also, there would be 43 structures with erosion issues and 6 structures with slope instability potential. Maintenance access could be nonexistent for up to 40 structures during flood conditions. Elevated roads in the flood zone are not considered feasible. Road maintenance in the flood zone would be a constant and costly effort, which could be restricted by permitting requirements. The Eastern Route would not be able to perform the function intended, to serve the public with reliable transmission service.

I-15 Route

In 2006, an initial westward route was investigated and rejected because of feasibility concerns. The so-called "Santa Ana River West Corridor" route was eliminated because of environmental conflicts with the river corridor open space and wildlife habitat management and current and proposed urban development along the I-15 corridor.

However, further investigation and route refinement resulted in a number of changes that addressed initial concerns and reduced many identified impacts. A new corridor, roughly following the old one, was reexamined and proposed as the current I-15 Route (Proposed Project). This route is described in detail in Chapter 2, Proposed Project, of the SCE evaluated an alternative alignment suggestion from the Vernola Marketplace property owner that was received during the DEIR public review and comment period and determined it was feasible. The proposed realignment would place a section of the proposed 230 kV transmission line between the Vernola Marketplace buildings and the I-15 northbound off-ramp onto Limonite Avenue. This realignment would skirt the western edge of the Vernola Marketplace property away from the shopping center's parking area. The tower footings would be placed outside of California Department of Transportation (Caltrans) ROW. An aerial easement would be required from Caltrans, as some of the arms that support the conductors on one of the poles would encroach upon Caltrans ROW. This route is described in detail in Chapter 2, Proposed Project, of this DEIR.

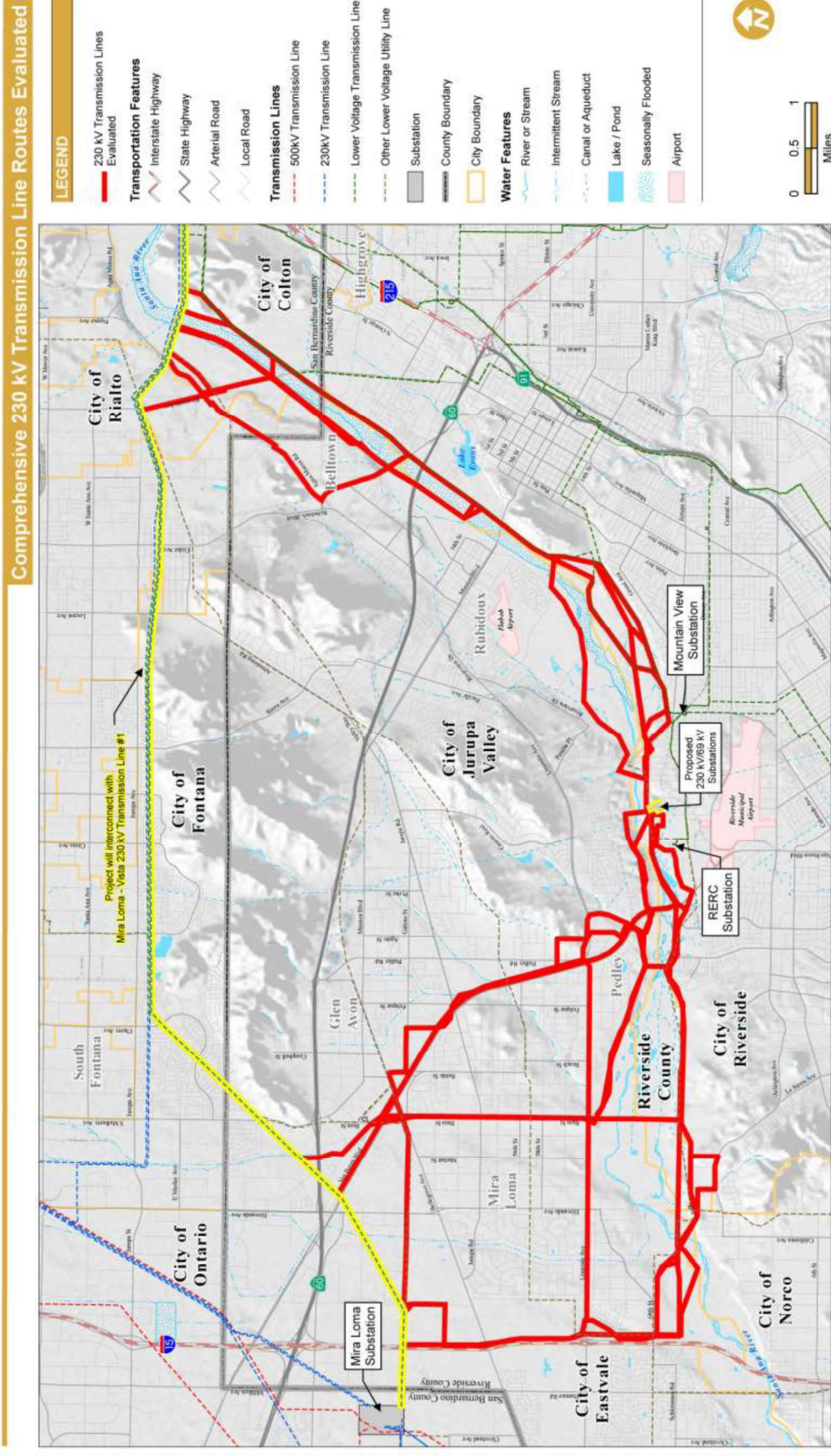
Substation Siting

During Project evaluations and siting of Project components, various substation locations were identified and considered as well. The site would require the ability to locate both the 230 kV and 69 kV substations. Multiple locations were identified within and outside of the City of Riverside that would allow the connection to the SCE electrical grid and also allow for the transfer of the electrical power into the RPU system through its network of existing 69 kV substations. The consideration of sites included expansion of Vista Substation, expansion of Mira Loma Substation, expansion of RERC Substation, expansion of Mountain View Substation, and the Jurupa site (Proposed Project). As further detailed within Section 6.4 below, the Jurupa site was selected as part of the Proposed Project. The other locations were either considered to be

infeasible or would have contributed to additional significant impacts as compared to the selected Jurupa site.

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FIGURE 6.2-3. COMPREHENSIVE 230 kV TRANSMISSION LINE ROUTES EVALUATED (REVISED)



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6.2.2 69 KV SUBTRANSMISSION LINE ROUTES

RPU conducted extensive field studies to identify potential 69 kV subtransmission line routes for satisfying the Proposed Project objectives as described in Chapter 1. Included in these studies was a 2006 Alternatives Analysis which identified numerous routes between RERC and Harvey Lynn/Freeman Substations, and between Wilderness Substation and the vicinity of Mountain View Substation. These alternatives were then studied for feasibility and environmental impacts based on 18 criteria and field reconnaissance by both engineers and environmental specialists. Also considered was the route proximity to and the number of:

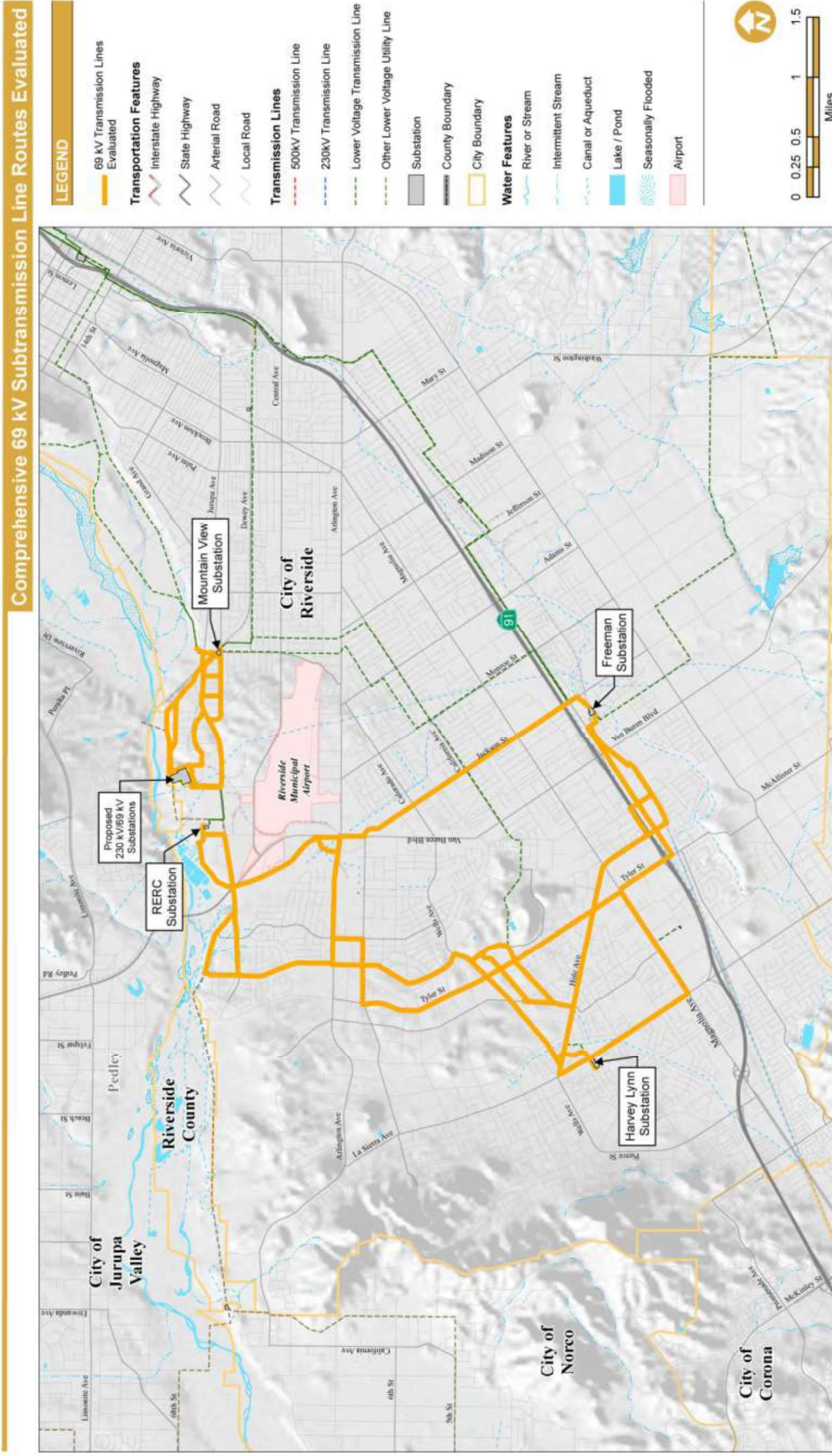
- Multi-family buildings
- Single family residences
- Schools
- Child care facilities
- Medical facilities
- Park and recreation areas
- Agricultural lands
- Within a General Plan area with transmission line policy
- Within, or crossing, designated scenic corridors and roadways (e.g., identified “gateways” to the City)
- Existing linear facility and electric lines paralleled or co-located
- Parcel crossings
- Length

Route Refinements

After the 69 kV siting study was completed in 2006, RPU received public comments and further evaluated potential routes to reduce potential land use impacts. Subsequently, RPU added several routes for consideration. The complete network of 69 kV alternatives that have been evaluated is shown on Figure 6.2-4.

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FIGURE 6.2-4. COMPREHENSIVE 69 kV SUBTRANSMISSION LINE ROUTES EVALUATED (REVISED)



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6.3 Alternatives Considered

During the preparation of this DEIR, several alternatives were considered ~~for~~to the Proposed Project. The goal for developing a set of possible alternatives was to identify other means to attain the Proposed Project objectives while lessening or avoiding potentially significant environmental impacts caused by the Proposed Project. The following alternatives were initially chosen as being ostensibly feasible and are considered in this DEIR.

6.3.1 ALTERNATIVE 1—NO PROJECT ALTERNATIVE

Section 15126.6(e) of CEQA Guidelines requires the analysis of a “No Project” Alternative. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to consider the impacts of not approving the Proposed Project. Analysis of the No Project Alternative includes consideration of the existing condition of the environment in the Proposed Project area along with what would be reasonably expected to occur in the foreseeable future if the Proposed Project were not approved. See Section 6.5 for a detailed analysis of environmental impacts related to the No Project Alternative.

Under the No Project Alternative, there would be no construction of a new double-circuit 230 kV transmission line, a new 230 kV substation (Wildlife Substation), a new 230/69 kV substation (Wilderness Substation), or any new 69 kV subtransmission lines. Additionally, there would be no improvements made to existing 69 kV substations, no protective relay improvements to Mira Loma and Vista Substations, no relocation of subtransmission or distribution lines, and no installation of new telecommunications lines.

The deficient condition of RPU’s capacity to meet existing electric system demand and anticipated future growth would remain in place. Overall reliability would not be increased through the addition of a second point of interconnection to deliver bulk power into the RPU electrical system. Existing conditions in the Proposed Project area would remain the same, and electrical power would continue to be delivered to the City of Riverside through a single interconnection point, which has already exceeded capacity and would continue to do so. Under the projected load growth scenario, long-term system reliability would be in jeopardy, increasing the potential for black-outs in the City.

6.3.2 ALTERNATIVE 2—VAN BUREN OFFSET ALTERNATIVE

The Van Buren Offset Alternative, as described in the previous section, would generally parallel Van Buren Boulevard to connect to the Mira Loma – Vista #1 230 kV transmission line. All other components of the Proposed Project (Wildlife and Wilderness Substations, new 69 kV subtransmission lines, improvements to 69 kV and 230 kV substations, and telecommunications facilities) would be constructed, operated, and maintained as described. See Section 6.5 for a detailed analysis of environmental impacts related to the Van Buren Offset Alternative.

6.4 Alternatives Eliminated from Further Consideration

A broad range of alternatives were evaluated for the Proposed Project in accordance with CEQA Guidelines §15126.6(c). The evaluation and determination of the alternatives that were considered but rejected as infeasible for constructability, operational, ~~or~~ environmental impact₂

or other reasons are documented within this section. Below is a list of alternatives considered and eliminated. These alternatives are described in Sections 6.4.1 through 6.4.4.

Other Voltages

- **Subtransmission/Transmission**
 - 69 kV
 - 115 kV
 - 500 kV

Non-Wire Alternatives

- New Generation
- Distributed Generation
- Energy Conservation and Load Management

Alternative Technologies

- Underground entire 230 kV High-Voltage Transmission Line
- Underground entire 69 kV Subtransmission Line
- Direct Current Transmission
- Alternative Conductors

Siting and Routing Alternatives

- 230 kV Transmission Line Routes
 - Limonite Route
 - Bain Street Route
 - Eastern Route(s)
- 230 kV Substation Sites
 - Expand Vista Substation
 - Expand Mira Loma Substation
 - Expand RERC Substation
 - Expand Mountain View Substation
- 69 kV Subtransmission Line Routes
- 69 kV Substation Sites

CEQA Guidelines §15126.6(c) provide criteria to be applied to alternatives in order to identify those alternatives that may be eliminated from detailed consideration. The three general elimination criteria that were considered when evaluating the alternatives include:

- Alternatives that would fail to meet most of the basic Proposed Project objectives.
- An alternative that was determined to be infeasible.
- Inability of the alternative to avoid significant environmental impacts.

CEQA Guidelines (Section 15126.6(f)(1)) state that a number of factors may be considered in determining which alternatives are potentially feasible. These include, but are not limited to, the following:

- Suitability;
- economic viability;

- availability of infrastructure;
- general plan consistency;
- other plans or regulatory limitations;
- jurisdictional boundaries; and
- whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).

6.4.1 OTHER VOLTAGES

Subtransmission

RPU considered other nominal-voltage alternatives to the 69 kV system (i.e., lower voltages considered “subtransmission,” such as 34.5 kV) that they currently operate for the residents of the City; however, operating at a ~~different~~ lower subtransmission voltage would not reduce dependence on Vista Substation or address the capacity delivery issue at Vista Substation. ~~Proposed Project objectives would not be met.~~ because it is the only nearby bulk power substation with available capacity. Two of the Proposed Project objectives would not be met. Specifically, this alternative would not provide sufficient capacity without adding multiple lower-voltage lines, and it would also not minimize environmental impacts because of the need for multiple lower-voltage lines (more lines and wider ROW would result in higher impacts to land use and visual resources, habitat loss, and cultural impacts). The power would still need to be delivered to the Vista Substation, but would exit at a voltage lower than 69 kV.

Integration of different voltages into RPU’s existing subtransmission system would require extensive modifications of existing facilities, ~~thereby increasing cost and environmental impacts, such as new substations to step up or step down the voltage (i.e., from 69 kV to 34.5 kV as an example), thereby increasing cost and environmental impacts for additionally needed facilities, such as new substations and lines. Additional impacts from additional facilities under this alternative would occur to land uses, visual resources, habitat loss, and potentially cultural resources, and there would be no benefit of these additional impacts. It would not be normal to mix voltages unnecessarily in the existing system, which would only serve to make operation and maintenance more complex than necessary. In fact, many more lower voltage lines would be needed to carry the same amount of power, which eliminates any potential benefit to the community or the environment, and simply would cost more to acquire additional ROW, transformers, and potentially new substations. For example, a 34.5 kV line would have the capacity of less than one half of a 69 kV line, according to industry standard for such facilities and the principles of physics.~~

Under the Proposed Project concept, impacts related to the 69 kV subtransmission lines are minimized by maximizing use of existing facilities. ~~For these reasons~~ Although other voltages could be used to meet the purpose and need, because it would increase the costs and complexity of constructing, operating, and maintaining the system with no tangible benefits to the community, RPU’s customers, or the environment, these options were eliminated from further consideration as Proposed Project alternatives.

Transmission

SCE and RPU considered the possibility of second interconnection at a lower or higher voltage than 230 kV to meet the objectives for the 230 kV interconnection for the RTRP as described in Chapter 1. Voltages investigated included:

- 69 kV
- 115 kV
- 345 and 500 kV

The standard transmission voltages used in the SCE bulk power transmission systems within Southern California are 230 kV and 500 kV. The 500 kV transmission voltage used within Southern California for bulk power delivery is able to transmit a greater amount of power than lower voltages. This capacity would far exceeds what is required to meet the objectives of the RTRP; much of the capacity of the line would not be utilized. In addition, the required 500 kV transmission lines would be approximately three times longer than the Proposed Project because they would have to come from a different and more distant substation, and are more expensive to construct on a per-mile basis than 230 kV (potentially twice the cost per mile). While this line would avoid the same impacts of the Proposed Project because it would have a different and longer route, it would result in other, similar impacts for a line three times the length. Potential 500 kV transmission line routes to tie into existing 500 kV transmission lines to the south would traverse developed areas similar to the Proposed Project area. ~~Routes—A 500 kV line would require a wider ROW than the 230 kV routes evaluated within this DEIR for the RTRP, and therefore create greater the larger footprint alone would result in higher environmental impacts. A substantial amount to land uses, resources, and communities, and some of 69 kV line construction these impacts would also likely be required significant.~~ Additionally, a 500 kV transmission line would deliver far in excess of the capacity needed to fulfill the purpose and need. Excess capacity is not justified when compared to the higher anticipated environmental impacts and higher cost of constructing a 500 kV transmission line and interconnection substation. For these reasons, 500 kV was eliminated from further evaluation.

Lower voltage transmission lines, such as 115 kV, have much less capacity than a 230 kV line, and would require multiple lines to accomplish the same bulk power transfer capability from SCE to the Vista Substation as the Proposed Project. To make this meet the purpose and need, there are two choices.

- A new 230 kV to 115 kV substation would need to be built on the existing SCE 230 kV station, and then the power could flow into Vista at 115 kV. However, it would require several more 115 kV lines to carry the bulk capacity of the single proposed 230 kV loop from the existing SCE 230 kV line.
- New 115 kV lines (several lines) would need to be built from an existing 115 kV transmission source. The nearest independent (i.e., a separate and commercially available source) 115 kV interconnection point would be located at SCE's Valley Substation in Romoland, 25 miles southeast of the City. Multiple 25-mile long transmission lines would require more ROW and, because it would occupy a much wider footprint through the communities, would result in far greater environmental impact and higher cost, (e.g., cost of the land for ROW). There is a 115 kV source at Vista Substation; however, it is not independent from the existing 69 kV source at Vista, and therefore does not meet the

objective for a second interconnect for the Proposed Project. ~~For these reasons, utilizing 115 kV for transmission of additional capacity into RPU's system was determined to be infeasible.~~

~~Similarly~~ Because of needing many more times the transmission lines to accomplish the same purpose, higher environmental impacts because of a greater project footprint with multiple ROWs, greater effects to the community from the greater footprint, and higher costs, utilizing 115 kV for transmission of additional capacity into RPU's system was dismissed from further consideration. While some of these additional impacts from this alternative would be significant, the cost would be significantly more for the larger ROW and the multiple lines within one corridor, which would make this alternative infeasible.

~~Similar to that described above for the 115 kV alternative, to meet the Proposed Project objective~~ objectives using 69 kV for the Project's bulk transmission feed, the Proposed Project would require six or more 69 kV subtransmission lines from SCE's Mira Loma Substation to provide the same similar power transfer capability as the Proposed Project using a 230 kV interconnection. Multiple subtransmission 69 kV circuits would require more ROW and would result in a greater footprint and higher environmental impact and cost higher cost. Some of the additional impacts from this alternative would be significant, and the cost would be significantly more for the larger ROW and the multiple lines within one corridor, which would make this alternative infeasible. Also, new transformation to 69 kV would be required at Mira Loma Substation, because it cannot currently support the capacity requirements at this voltage to meet the needs of this Proposed Project. This alternative was determined to be infeasible Because of greater impacts to the community, land uses, and natural resources from a wider footprint, higher costs from many more lines to build and maintain, and additional equipment being required at Mira Loma Substation, this alternative was eliminated from further consideration.

6.4.2 NON-WIRE ALTERNATIVES

New Generation

RPU operates two peaking power plants within the City. The Riverside Energy Resource Center (RERC) was developed in 2006 and is now undergoing an expansion ~~that will~~ to double its capacity. Springs Generating Plant (Springs) was constructed in 2002. Both plants were designed, constructed, and permitted to operate using natural gas-fired combustion turbines, and because they are intended to provide power during peak use periods, were permitted only for a limited number of hours per year. These plants, including the new capacity under construction at RERC, will provide a total of only 228 MW of capacity. This is less than 50% of the anticipated 560 MW of additional capacity that would be provided by the Proposed Project. Furthermore, the provision of 228 MW through these two existing peaking plants falls short of reliability levels that would be provided by the Proposed Project. Thus, additional capacity is still needed by the City, even though two peaking plants currently can provide some amount of power within the City.

One alternative to the Proposed Project that was considered was the installation of ~~still more~~ additional generation plants within the borders of the City of Riverside (the "New Generation Alternative"). The New Generation Alternative would, in essence, provide a second source of energy, apart from SCE's Vista Substation. The New Generation Alternative would

also address the capacity issue at Vista by reducing the load supplied from Vista. The amount of generation would have to supplement the existing RERC and Springs generation plants and provide a total capacity equal to that of the Proposed Project, for a total of approximately 560 MW. Since RPU will ~~shortly in the near term~~ have approximately 228 MW of internal generation through the RERC and Springs plants described above, the New Generation Alternative would have to provide a minimum of an additional 332 MW of capacity. Additionally, and in order to remedy the City's lack of redundancy (which is one of the Proposed Project's objectives), any New Generation Alternative would have to provide the same level of reliability as the Proposed Project. The availability of the Proposed Project (which is primarily made up of two transmission lines and two transformers, none of which include moving parts) is near 100%, based on historical experience. On the other hand, the New Generation Alternative is composed of a large number of moving parts. A search of industry sources indicates that the availability of a large power generator is, at best, only 90%. Thus some form of redundancy is needed to account for planned outages or forced outages of the largest generating unit. Without this redundancy, any time the largest peaking unit was taken off line (particularly for an unplanned outage), the City would be without the electrical resources that it needs. For the purposes of this discussion, the following assumptions are made:

- A single 332 MW natural-gas powered unit would be constructed on the land now designated for the Wilderness/Wildlife Substations. This assumption was made because it provides a scenario most directly analogous to the construction of the Proposed Project and thus allows for the most consistent comparison of the New Generation Alternative's potential environmental impacts against those of the Proposed Project.
- A second 332 MW unit would be constructed on the same site to cover the outage of the first unit in the event of a forced outage or a planned outage for maintenance, as explained above.
- Either unit would be capable of being base loaded – that is, operating 24 hours per day, seven days a week. This assumption is reasonable because any New Generation Alternative would have to provide a source of supplemental power to the City at all times in order to provide the redundancy that is one of the Proposed Project's objectives.
- The existing RERC and Springs peaking units would provide necessary capacity only when the City's load exceeded the 332 MW rating of the base load plant. This assumption is reasonable because the RERC and Springs peaking plants have existing pollution emission limits set by the South Coast Air Quality Management District (SCAQMD) that limit their operation to not more than 1,000 hours of operation per year.

Even with these conservative assumptions, the New Generation Alternative would result in potentially significant environmental impacts, would be difficult or impossible to permit for air quality, would cost significantly more than the Proposed Project, and would still not meet the majority of the Proposed Project's objectives. ~~Specifically, as described below:~~

- ~~• Cost – The cost of the New Generation Alternative would significantly exceed the cost of the Proposed Project. As mentioned above, one 332 MW unit would be required to carry base load, along with a second redundant 332 MW unit, that would be required for reliability. Based on a review of industry sources, a typical cost for natural gas fired plants is on the order of \$500,000 per MW of capacity. The potential \$330 million construction cost for 664 MW of generation would be substantially more than the~~

~~construction cost of the Proposed Project. Accordingly, the New Generation Alternative is economically infeasible under CEQA. (See Pub. Res. Code § 21061.1 and CEQA Guidelines § 15364 [providing that “feasibility” should take economic considerations into account].)~~

- Air Emissions – It would be infeasible to obtain the necessary approvals to construct a large electric power plant within the South Coast Air Basin, particularly where other options (such as providing increased capacity via the Proposed Project) ~~is~~are available. This is because there is currently a fixed amount of particulate matter credits available for new projects, ~~according to a Southern California air emissions industry consultant. (SCEC 2011).~~ The New Generation Alternative would require roughly 65% of all the currently available credits for Southern California, with the credits alone costing on the order of \$100 million or more. This is based on a conservative cost—even assuming that the present credit-holders were willing to sell them (which they may not be if they are planning future expansions of their own businesses). Moreover, the operation of the New Generation Alternative would result in very significant environmental impacts in the form of extensive particulate matter emissions. Accordingly, the New Generation Alternative would be environmentally, technologically, legally, and economically infeasible to permit, construct, or operate. (See Pub. Res. Code § 21061.1 and CEQA Guidelines § 15364.)
- ~~• Water – The New Generation Alternative would require a large amount of cooling water for operations. The approximate initial capital cost to provide recycled cooling water is estimated to be \$4 million, which would include the capital cost of piping or trucking the water to the location.~~
- Reliability – As stated in Chapter 1, it is not standard utility practice to defer the addition of transformer capacity by installing generation. This is due to the high cost of generation compared to transformation (at least five to one) and the lower reliability of generation compared to transformation. To do so is akin to applying a mere “band-aid” to a condition that really calls for a larger solution. A power plant is inherently more complicated than transmission lines and transformers. The power plant has a large number of moving parts and complicated control systems, and is very maintenance-intensive, compared to a transmission line and transformer which have no moving parts and need only minimal maintenance. The addition of the back-up generating unit as proposed is an attempt to address this issue, but even the additional unit does not equal the reliability of the proposed two transmission lines and two transformers in the Proposed Project. This is true because the redundancy of having two transmission services into RPU’s system (the existing services from the Vista substation; the service from the Mira Loma-Vista transmission line that is associated with the Proposed Project) provides the needed capacity in the event that one of the service lines is out of commission. This means that one of these transmission connections would provide the needed electrical service to RPU. Accordingly, a New Generation Alternative is technologically impractical and also fails to meet the Proposed Projects objectives.
- Cost – The cost of the New Generation Alternative would significantly exceed the cost of the Proposed Project. As mentioned above, one 332 MW unit would be required to carry base load, along with a second redundant 332 MW unit, that would be required for reliability. Based on a review of industry sources, a conservative cost for natural-gas fired plants is on the order of \$500,000 per MW of capacity (U.S. Energy Information Administration 2010). The potential \$330 million construction cost for 664 MW of

generation would be substantially more than the construction cost of the Proposed Project (potentially upwards of five times more expensive). Accordingly, the New Generation Alternative is economically infeasible under CEQA. (See Pub. Res. Code § 21061.1 and CEQA Guidelines § 15364 [providing that “feasibility” should take economic considerations into account].)

- Water – The New Generation Alternative would require approximately two million gallons of cooling water on average for daily operations for a single 332 MW (1 x 1) combined cycle gas turbine power plant (POWER 2012). Water is scarce in Southern California and expensive, and for this reason, recycled water would be used in this alternative. The approximate initial capital cost to provide recycled cooling water is estimated to be \$4 million, which would consist of piping or trucking the water from local or regional waste water treatment facilities. The Proposed Project would not use cooling water. While possible, this alternative would require more logistics of operation, including cooling water handling. These factors contribute to this alternative being eliminated from further consideration because of the infeasibility created by the much higher cost.
- Other Concerns – In addition to the issues already mentioned, other concerns contributing to the infeasibility of the New Generation Alternative would include the limited availability and fluctuating cost of natural gas, uneconomic operation of the power plant compared to the cost of Future gas prices are difficult to predict. While prices are currently favorable, the potential volatility of natural gas prices creates higher risk for RPU than purchasing energy on the open market, and the inability for RPU to maximize using long-term contracts (e.g., predictable pricing), as proposed in the Proposed Project. Power purchased on the open market also maximizes the potential for importing renewable energy generated within the Western U.S., because of the need to operate the New Generation Alternative.

For all of these reasons, it would not be feasible to permit and secure the above reasons, a air quality credits for the New Generation Alternative installed within the City of Riverside is infeasible, because of technological, environmental, legal, economic, and other restraints. Moreover, it is not a viable alternative because it fails this alternative would fail to meet the Proposed Project’s basic objective of increasing the to provide increased reliability of the for RPU’s electrical system. Accordingly, and meet the construction of need in a cost-effective manner, the New Generation Alternative within the City was eliminated from further consideration and will not be further discussed. Further negatives for this alternative are the many environmental, technological, and cost factors described in the section above.

Distributed Generation

Distributed generation (DG) is typically less than 5 MW in net generating capacity and is located on distribution feeders near customer load. Examples of DG include fuel cells, micro turbines, photovoltaic, wind, landfill gas, and digester gas. RPU’s current total for DG is less than 7 MW. For a number of years, RPU has offered incentives for business and residential photovoltaic installations. These now total about 1.5 MW of the 7 MW total for DG. It is estimated that the local RPU system load will grow approximately 15 MW per year, on average, through the year 2026; in fact, the annual peak load has increased by an average of 30 MW per year, in part due to adverse weather conditions. The 7 MW produced by DG would not be sufficient to compensate for the predicted load growth for the RPU system. DG would not allow RPU to meet the

Proposed Project objectives due to the comparatively small capacity of DG systems and the relatively high cost, cumulatively large quantities of air emissions, technological constraints, and regulatory approvals in meeting the Proposed Project schedule.

The California Energy Commission (CEC) concluded in a 2002 report that “DG is capable of providing several Transmission and Distribution (T&D) services, but the extent to which DG can be successfully deployed to effectively supply them are limited by (1) the technical capabilities of various DG technologies; (2) technical requirements imposed by the grid and grid operators; (3) business practices by T&D companies; and (4) regulatory rules and requirements.”

DG capacity is limited and would not meet the need for the Proposed Project to provide a second point for importing energy, including renewable energy. For this reason, as well as the technical and logistical concerns, distributed generation is not viewed as a feasible alternative to the Proposed Project.

Energy Conservation and Load Management

RPU offers a number of rebate programs for customers that encourage installation of specific energy-efficient measures. RPU also provides programs, such as in-home energy audits, to make customers more aware of their energy usage and ways to conserve. Also available is consumer educational material on improving energy efficiency as well as encouraging energy usage during off-peak periods. All of these programs result in energy and demand savings and play an important role, but even with the increased emphasis on energy and demand conservation, the savings are far from what will be needed over the coming years to keep increasing demand below current capacity and to support added growth. For instance, in the latest reporting period, FY 2007/08, RPU estimated that the net peak demand savings was 1.8 MW for the entire electric system, but this falls far short of the estimated annual load growth of 15 MW per year.

Load Management programs are defined as any program that reduces electric peak demand or has the primary effect of shifting electric demand from the hours of peak demand to non-peak time periods. One example is RPU’s time-of-use rates, which encourage customers to use electric energy during off-peak periods. These rates have been in effect for several years, including 2007 when the highest historical demand was experienced on RPU’s electric system. Load reduction that results from load management programs cannot be considered reliable or long-term for purposes of transmission system planning, because the participant has the option of dropping out at any time by forgoing the incentive payment. Therefore, the effectiveness of these programs can fluctuate over time.

As a stand-alone alternative to the Proposed Project, energy conservation and load management programs were considered and eliminated from further consideration. The savings from these programs represent a fraction of the capacity to be supplied by the Proposed Project. There is also uncertainty regarding the volatility of potential savings from energy conservation and load management activities. This alternative does not provide a second point for importing energy, including that from renewable resources. For these reasons, energy conservation and load management programs were eliminated from further consideration as a feasible alternative to the Proposed Project.

6.4.3 ALTERNATIVE TECHNOLOGIES

Underground 230 kV Transmission Line

This alternative would use existing technology to install either portions or the entire length of the transmission line underground, instead of conventional construction using overhead conductors supported by tubular steel poles or lattice towers. 230 kV underground installations have typically been constructed where overhead lines were not feasible because of incompatible land uses (e.g., ~~in the vicinity of airports~~ airport flight zones or urban centers). This alternative was considered both as an alternative to the entire proposed 230 kV transmission line and as a potential mitigation measure in certain limited locations along the proposed 230 kV transmission line route where existing land use constraints could pose a direct conflict with an overhead transmission line. The discussion below considers the engineering options of an underground system, engineering constraints of an underground system, and environmental constraints or impacts from an underground transmission line as an alternative to the Proposed Project as a whole, and also provides a discussion of the potential undergrounding of specific limited location along the Project's proposed alignment.

Engineering and Technological Constraints

The number of overhead transmission lines greatly exceeds the number of underground transmission lines that have been constructed in North America and the rest of the world. ~~This is, in general, due to economic considerations~~ because of the relatively less expensive construction and operation costs and the relative ease of constructing for reliable operation. Undergrounding electric lines is a relatively new technology. Overhead lines have been constructed to transmit and distribute electricity since commercial use of electricity became commonplace, and this is the commonly accepted technology in all developed and developing countries. For example, the costs for overhead transmission lines, in most cases, are significantly less than those for similar capacity underground transmission lines. However, there are distinct advantages and disadvantages for both overhead and underground transmission lines that should be considered when during the planning a specific transmission line for the Proposed Project.

The primary advantages of underground transmission line construction are:

- Potential to reduce visual impacts
- Potential to reduce ~~certain~~ land use and community impacts
- Reduced ROW width requirements

Conversely, when planning a new transmission line, the disadvantages of underground construction should be considered. Disadvantages of underground transmission line construction include:

- Land disturbances during construction for entire length of route
- Poor accessibility to maintain the facilities after construction
- Increased use of hazardous materials in the cooling systems
- ~~Significantly~~ Increased environmental impacts associated with construction (for resources affected by ground disturbance activities during construction and operation (e.g., air quality, biological impacts, etc.))

- Increased potential for damage to other existing utilities during operation and maintenance activities
- Longer outages for repair, which reduces the reliability of the electrical system for RPU's customers
- Land disturbances during repair activities
- Higher cost associated with the installation and repair of the transmission line

Underground transmission lines can generally be classified into four categories:

1. **High-pressure fluid-filled (HPFF) cable systems:** Typically for this cable system, all three phases of the cable will reside in a steel pipe pressurized with dielectric fluid (mineral oil). The pipe will have a minimum diameter of eight inches, and more than one pipe per circuit may be required. For the circuit length required, multiple pumping plants with oil storage reservoirs will be located along the ROW.
2. **Self-contained fluid-filled (SCFF) cable:** Typically for this cable system, the cable consists of a hollow conductor, which is filled with dielectric fluid, high quality kraft paper insulation, outer shielding, and a lead or aluminum sheath which is covered by a PVC jacket. Stop joints and fluid reservoirs at splice vaults will be required to maintain proper pressure. The cable can either be direct-buried or installed in conduit.
3. **Compressed-gas insulated transmission lines (CGIT):** For this cable system, an epoxy spacer insulator assembly holds the tubular conductor in place inside an aluminum enclosure filled with sulfur hexafluoride (SF₆) (a potent greenhouse gas, known to the State of California) or a mixture of SF₆ and nitrogen (N₂). While this cable system can match the power transfer capabilities of any overhead lines, its use has been limited to relatively short installations due to its relatively high cost. Direct burial is usually not considered.
4. **Solid dielectric or extruded dielectric cable systems (XLPE):** For this cable system, each phase consists of a stranded conductor (aluminum or copper), semi-conducting shields, cross-linked polyethylene (XLPE) insulation, copper sheath, and PVC jacket. Each cable will be pulled into a separate duct in a common duct bank.

Currently, the industry trend is to use XLPE as the cable type of choice for undergrounding because there is no fluid surrounding the conductor for cooling purposes (Su 2008). This reduces the complexity of installation and likewise reduces the risk of an operational upset. In the U.S., at least two manufacturers, noting this trend, have developed manufacturing capability for 230 kV cable. Outside the U.S., manufacturing capability of up to 765 kV XLPE exists. Of the four available types of cable systems, XLPE has the least complicated design, operation, and maintenance requirement. Because of this industry trend, and SCE's experience with XLPE cable design at 66 kV and 115 kV for nearly 40 years, only XLPE technology would be considered.

Two duct banks (concrete-encased ducts to house the cable) would have to be created for the two proposed 230 kV circuits. Each duct bank would be approximately 60 inches wide by 24 inches tall, and located 48 inches below grade. A sand slurry mixture would be poured on top of the duct bank for extra protection. The two duct banks would be placed 20 feet apart. Approximately every 2,000 feet, a set of three, 10 feet wide by 30 feet long by 10 feet high, vaults per circuit would be placed in the ground to accommodate splicing the cable together.

A combination of trenching and directional boring would be used to build the duct banks. Boring would be used at water crossings, to go through hills, or to avoid immovable obstacles. Trenching would be used for the majority of the construction. To build the duct bank, the ROW would have to be cleared so that a trench could be opened. It is assumed that nine vaults would be required per mile per circuit. For every vault, 4,600 cubic feet (ft³) of earth would be excavated. For every foot of trench line, 30 ft³ of earth would be excavated. For a one-mile circuit, approximately 191,000 ft³ of earth would have to be excavated. For one mile of the double-circuit lines, approximately 380,000 ft³ (roughly 19,000 tons) of earth would have to be excavated and hauled away.

Undergrounding would result in additional restrictions on 100% of new ROW through mostly open space lands as compared to overhead ROW. SCE would require unimpeded access to all vaults for routine maintenance and in the event of an emergency. Deeply rooted vegetation along the trench would be prohibited, as the roots can penetrate the concrete encased duct banks.

Outage and Reliability Concerns

While underground transmission lines are relatively immune to weather conditions, they are vulnerable to cable/splice failure, washouts, seismic events, and incidental excavation. Outages for underground lines generally last days or weeks while the problem is located, excavated, and repaired. Because fault points are visible and readily accessible, failures in overhead lines can typically be located and repaired in a matter of hours¹. Long-term outages would be unacceptable for a circuit carrying bulk electric power, like the Proposed Project, because such a lengthy outage would interfere with the Proposed Project's primary purpose of providing increased reliability in the event of an outage of the existing transmission/distribution system. The time needed to repair electrical service can have an effect on human health and safety, as well as lost production or spoiled food items. For example, the ability to refrigerate food and to maintain medical equipment, homes, commercial businesses, and industrial customers requires reliable power, and this is a concern for both winter and summer.

A 1999 Electric Power Research Institute (EPRI) study was conducted on *Underground Transmission Cable Technical Limitations*. A summary from that study of industry-wide reliability statistics for both HPFF and XLPE cable systems is provided below. It lists average outage times for both of these typical underground systems.

TABLE 6.4-1. UNDERGROUND TRANSMISSION CABLE RELIABILITY STATISTICS

Parameter	HPFF	XLPE
Cable Repair Time (Mean)	15 days	5.5 days
Termination Repair Time (Mean)	7.5 days	3.9 days
Splice Repair Time (Mean)	15 days	5.5 days
Hydraulic Repair Time (Mean)	14.5 days	NA
Maintenance Outage Duration	0.6 days	0.5 days

¹ Commonwealth of Virginia Joint Legislative Audit and Review Commission. *Evaluation of Underground Electric Transmission Lines in Virginia*. p. 57. <http://jlarc.virginia.gov/reports/Rpt343.pdf>

An April 2009 study completed by the International Council on Large Electric Systems (CIGRE) titled *Update of Service Experience of HV Underground and Submarine Cable Systems* provides even more recent information on this topic and shows even lengthier repair times for underground transmission systems. In this more recent study, repair time refers to the time necessary to identify the location of the fault, repair the fault and to complete testing on the repair. Repair times for 60 to 219 kV systems averaged 15 days, while 220 to 500 kV systems averaged 25 days for repair. Because of the difficulty in accessing underground lines and the lengthy times required to repair any problems, an alternative that undergrounds the Proposed Project alignment is infeasible for technological and engineering reasons. Similarly, undergrounding even limited portions of the Proposed Project as a means of mitigation for localized impacts would pose the same access difficulties and extended repair times for any outages located in the undergrounded areas. While the smaller areas of undergrounding would reduce the likelihood that an outage would occur in the underground portion, the transitions from overhead to underground could create additional outage risk because of more complicated engineering and construction methods, additional connections, and other factors. Accordingly, it is likewise infeasible based on technological and engineering factors to underground even limited portions of the 230 kV portion of the Project as a form of mitigation.

Economic Considerations

In addition to reliability concerns with underground construction for transmission lines, the basic cost of undergrounding high voltage transmission lines is more expensive than the cost of typical overhead construction. While technically possible, the high cost and installation requirements tend to prohibit the application of underground transmission systems when a feasible overhead transmission line alternative is available. According to the 1999 EPRI study *Underground Transmission Cable Technical Limitations*, the single most important factor that limits the use of more underground transmission and higher capacity underground cables is economics in comparing the cost to overhead transmission. Higher cost of underground systems is primarily due to:

- Excavation of the entire route by conventional or trenchless technology
- Working hours are restricted due to traffic impacts, which affects cost of installation
- Insulated underground cable is more expensive than a bare overhead conductor
- Cable ratings are lower than overhead line ratings due to the dissipation of heat through the thermal resistance of the earth
- Cables are typically installed in dense urban settings where installation costs are higher for any construction activity
- Cost of directional drilling under features such as rivers, roadways, or canals.

Cost ratios between underground and overhead transmission lines are difficult to establish, as ~~many site-specific factors lead to various~~ pinpoint without detailed engineering design for all of the alternatives considered, but the relative range of costs of both systems for each is known in the industry to be at a minimum many times more expensive for underground. However, in general, shorter lengths of underground installations typically ~~have a higher ratio are 10 to overhead and can vary between 10-20 to 1 in total costs~~ times more expensive (EPRI 1999/2006). These high ratios for shorter distances of underground are possible because the termination structures (those structures that transition from overhead to underground) dominate the cost of the entire length of the underground system. Termination structures are highly engineered structures that require specific manufacturing specification to accommodate the transition from

overhead to underground. Accordingly, undergrounding ~~limited~~ portions of the Proposed Project's lines as ~~a form of mitigation for localized impacts is infeasible due to economic factors~~ would be very costly.

~~Similarly, undergrounding the entirety of the Proposed Project is likewise infeasible. Even though the relative cost ratios may would be lowered for longer lengths of underground, those ratios would still be expected to be many times more costly than overhead. With regard to the Proposed Project in particular, the proposed route was designed in order to avoid minimize impacts by avoiding, to the fullest extent feasible, environmental impacts and land use incompatibilities (see Section 6.2, Development of Routing and Siting Alternatives). As a result, the ultimately proposed route is not a straight line, but is instead a route with numerous turns and realignments (see Figure 2.3-1). A non-linear route like that proposed by the Project with so many angles is much more expensive to design and build than a linear straight or nearly straight line route, due to the need to ensure appropriate tensioning around corners and the need for engineering and manufacturing specific angle structures (lattice or steel pole) that would allow for the angles in the route. These increased expenses similarly translate into increased undergrounding costs. Thus, particularly for the Proposed Project, the ratio of underground to above-ground to underground costs are would be on the higher end of the range, even for longer lengths of undergrounding, and are economically infeasible.~~

The significantly high costs of undergrounding the entire project or portions of the project contribute to the reasons why undergrounding the line has been considered and eliminated from further consideration.

Environmental Impacts

The review of undergrounding the 230 kV transmission line focused on those environmental resources and land uses that were expected to have a noticeable impact or reduction of impact, either beneficial or adverse. The principle environmental advantage of undergrounding a transmission line would be the mitigation of visual impacts from the poles and conductors. However, the construction and installation of an underground line would disturb more land area than the above-ground options. During construction, it would create ~~dramatic~~ significant impacts, such as disturbances to transportation, traffic, soils, wildlife habitat, and vegetation. Directional boring construction could also result in the escape of drilling mud into the environment as a result of a spill, tunnel collapse, or the rupture of mud to the surface, commonly known as a "frac-out." A frac-out is caused when excessive drilling pressure results in drilling mud propagating toward the surface.

~~Loss of habitat would occur throughout the length of the line. Habitat restoration above the underground line where the line would cross through these areas. Habitats would not be limited because of restored in areas that would require access for operation and maintenance considerations. Increased ground disturbance from trenching and backfilling activities and concomitant increases in heavy equipment would increase air quality issues. During operation, spare inventories must be maintained in case of forced outages.~~

~~These and other during construction, operation and maintenance impacts related to undergrounding the entire 230 kV transmission line are discussed below.~~

As a result of initial environmental review, and ~~from~~ public and agency comments received during scoping, ~~consideration of certain areas along the proposed route of the 230 kV transmission line were considered for undergrounding as an alternative to the overhead construction. The areas considered for underground included:~~

- Within the Land and Water Conservation Fund (LWCF) site
- Crossing of the Santa Ana River
- Crossing of the Santa Ana River bike trail
- Crossing through the Vernola Marketplace parking lot

~~In most instances, the consideration of impacts associated with undergrounding the entire length of the 230 kV transmission line versus only portions of the route would be similar. Therefore, unless otherwise noted below, the discussion within each environmental resource is for both considerations.~~

Aesthetics

The aesthetic appeal to a vista without the interruption of utility lines is ~~the most recurring an important benefit stated regarding~~ underground transmission lines. ~~Aside from the significant engineering, although underground lines come with some loss of operational constraints that undergrounding imposes (maintenance issues, seismic susceptibility, etc.), undergrounding eliminates many of the visual impacts caused by overhead transmission lines. flexibility and reliability during outages.~~

Elimination of the large tower or pole structures and conductor wires, the primary cause of long-term visual impacts, would significantly reduce Proposed Project impacts on aesthetics by ~~neg~~eliminating most of the form and line contrasts associated with the scale and dominance of these project features. ~~Undergrounding may be achieved using either the trenching method or boring (trenchless) method.~~

~~Using either method, however,~~ The construction, operation and maintenance of ~~the an~~ underground 230 kV transmission line would still cause some degradation to visual quality and landscape character. ~~This would be primarily due to trenching and the removal of vegetation and landform grading necessary in areas where undergrounding would be most effective and where,~~ The visual impacts of ~~the overhead line are greatest (the underground construction in natural areas, such as the Santa Ana River corridor, including the Santa Ana River Trail, and Hidden Valley Wildlife/LWCF areas). The vegetation and landform, would be the most noticeable. The contrasts created by the large boring layout areas(s), splicing vaults and/or riser sites also create other visual impacts: during construction. The riser sites would be similar to, but at a smaller scale than, those caused by overhead structures. The visual impacts associated with construction and maintenance activities would also largely remain whether using underground or overhead technologies.~~

~~Considering underground trenching alternatives, the~~ The primary contrasts created by trenching activities during construction would be from ~~construction and maintenance of the ROW. For example, construction would include clearing of all vegetation, including trees and tall shrubs, and this condition which would continue to be maintained~~ cleared to allow for the long-term access and maintenance of the underground line. ROWs constructed using the trenching method

through forested or riparian areas would cause noticeable ~~differences in changes to the character of the vegetation visual structure~~ for the life of the Proposed Project, ~~and~~. Especially during the first few years of operation ~~during restoration~~, the contrasts with the surrounding environment ~~would be strong~~. Long term vegetation contrasts would be due to the need for ROW maintenance to control vegetation (deep-rooted vegetation that could affect buried line operation) in areas where adjacent vegetation is structurally different than the areas being restored (e.g., maintain a linear corridor of low ground cover through a forest stand) that would disrupt visual continuity. Short-term contrasts during the revegetation period would ~~be caused by~~ also result from:

- the difference in size and age of the vegetation in areas where the existing vegetation is being restored. ~~There could also be impacts due to~~
- loss of road-side vegetation, potentially including notable old trees if undergrounding is considered in these areas. ~~Contrasts would also be created by the digging and stockpiling of excavated soil. Underground transmission lines trenched in existing developed corridors (such as in the Vernola Marketplace) would not detract from the existing, developed viewshed.~~
- the digging and stockpiling of excavated soil, and other construction activities

Underground transmission through existing developed areas (e.g., the Vernola Marketplace) does not result in any long-term visual impacts.

For trenchless (boring) methods, environmental impacts to visual resources would essentially be the same as for trenching except for the visual impact of digging the trench, stockpiling the soil, and backfilling the trench. Additional cleared areas would be necessary for direction-boring layout areas that would need to be cleared and graded over an area covering about 0.3 acre (150 feet by 100 feet). Trenchless methods other than directional drilling require the installation of an entry and exit pit approximately 20 feet by 40 feet with a depth sufficient for the casing product.

In summary, undergrounding of the transmission line ~~could potentially mitigate the effects on~~ would reduce visual quality and character of impacts to the Santa Ana River corridor, but ~~such undergrounding would still cause~~ result in some degradation to visual quality and character due to the necessary removal of vegetation. Short-term and construction-related visual impacts would ~~be higher, as would re-entry into areas during outages that significantly contributes~~ would require re-trenching to the visual quality of the corridor, aside from the significant engineering and operational constraints that undergrounding imposes (maintenance issues, seismic susceptibility, etc.). In addition, ~~transition sites where the facility would go from above ground gain access to the underground create additional visual impacts in the transition areas. Permanent scarring and contrast between the overstory vegetation and introduced, low growing ground cover necessary during Proposed Project operation (project life) would degrade existing visual character~~ transmission line.

Agriculture and Forestry Resources

The presence of the new underground project components and ROW could permanently disrupt active farming operations by dividing or fragmenting agricultural fields, obstructing access, impeding the delivery and use of water for livestock and irrigation, reducing the efficiency of windbreaks, and disrupting the operation of farming equipment. These impacts could occur within the RTRP area along the I-15 corridor, north of Limonite Ave., south of 68th St., and

within some limited areas east of Pedley Substation where current, active agricultural uses exist. These impacts would not affect the Vernola Marketplace, crossing of the Santa Ana River, or the crossings of the Santa Ana River bike trail.

Agricultural uses in the affected areas would be temporarily disrupted by construction activities associated with equipment movement into and from the ROW and within the ROW during installation of the underground transmission line. During construction, access may temporarily be lost to the agricultural users of the land. During operation of the transmission line, the ROW must be kept clear ~~at all times. Typically, and~~ cropping activities would not be allowed over the top of the ~~installed underground transmission line~~, as tillage equipment could contact and damage the installation and/or disrupt the thermal backfill ~~that is~~ used to dissipate heat from the transmission line. In contrast, agricultural activities and uses are typically allowed beneath overhead transmission lines as long as the activities do not interfere with the required vertical clearances of the transmission line and clearances surrounding the structures.

The use of pastures or range land grazing is typically an allowed use within the ROW of both overhead and underground transmission line installations. Grasses that can be utilized for grazing are typically used for stabilization of the ground disturbance within the ROW.

These impacts to agricultural resources avoided with this alternative would be less than significant.

Air Quality and Greenhouse Gases

Construction of an underground transmission line would require substantially more construction activity. The construction of an underground transmission line would require the complete trenching and the installation of each circuit of the 230 kV transmission line. This is essentially the equivalent of a large pipeline project requiring substantially more removal of earth for installation and also the removal of excess earth that cannot be used for backfilling over the trenches. Although helicopter use, which would be the main source of combustion emissions from equipment, would be eliminated through an underground line, air impacts resulting from an underground alternative would still be expected to be far more substantial when compared to the Proposed Project as an overhead transmission line due to the trenching activities.

Specifically, particulate matter (e.g., dust) emissions are expect to be significant given that several miles of digging and trenching would throw large quantities of dust into the air. In addition, if repairs are necessary, it could be possible that an entire section of the underground line would require removal, re-trenching, and re-installation following a fault in the conductor, thus resulting in much greater anticipated operational emissions than those emitted by the Proposed Project. Furthermore, and although the emissions from some general construction equipment usage would be offset by the lack of helicopter usage in stringing overhead lines, a large number of dump- or haul-trucks would be required during the underground alternative's construction period to haul away excavated trench material. These trucks would emit large quantities of other criteria pollutants and Greenhouse Gases, which will greatly exceed the emissions of the Proposed Project.

For these reasons, it is anticipated that an underground alternative for the entire route—and even the use of undergrounding for limited, select areas as a means of mitigation for localized

impacts—would result in increased and significant air quality impacts as compared to the Proposed Project.

Biological Resources

Santa Ana River

Undergrounding of a section of the Proposed Project would likely include a horizontal directional drill (HDD) of the Santa Ana River. The action would require a bore pit, exit point, and tailings holding area. These locations would be placed in upland areas to accommodate work access and required drilling construction specifications. For this alternative, the analysis considered a 36-inch diameter bore at an elevation of more than 25 feet below the river bottom and up to 100 feet below the river.

The HDD action has the potential to directly and indirectly affect sensitive plants and animals and Critical Habitat. Construction would typically include hauling of excavated material and drilling mud to an approved disposal site, with a potential disturbance of up to 0.5 acre of non-native grassland for the bore and exit pits. The HDD could result in a frac-out, whereby the drilling mud, inert bentonite, could rupture through micro-fissures and exit surface cracks within the limits of the river. If expelled, the bentonite could settle along the riverbed and be dispersed as a suspended material in the water.

The construction activity ~~is determined to~~would have the potential to affect sensitive wildlife, including Santa Ana sucker and its Critical Habitat. This action would have to be mitigated through the Multi-Species Habitat Conservation Plan (MSHCP) and with the U.S. Fish and Wildlife Service for the potential to affect Santa Ana sucker Critical Habitat, which is not covered by the MSHCP. It is expected that the U.S. Army Corps of Engineers would be petitioned to permit this direction drill action and therefore become a lead agency for Endangered Species Act compliance and permitting under Section 7. It is determined that this alternative would not likely affect protected plant species, and has the same potential to affect sensitive plant species as presented in Chapter 3 of this DEIR.

Because of the sensitive water resources and associated protected and sensitive plant and wildlife species that could be affected by the implementation of this alternative, an aerial crossing of the river is an environmentally superior alternative. Even with the potential for non-native tree removal, the potential impacts are less significant than those associated with underground construction at this location.

Eliminating this undergrounding alternative to cross the Santa Ana River would avoid significant impacts.

Vernola Marketplace Parking Lot

The analysis is based on open-trench construction for a buried, concrete-protected conduit duct bank. This underground construction area is urbanized and supports only minimal landscape vegetation and no native habitat. It is determined that this alternative would not have an effect on sensitive or protected biological resources. There would be no temporary or permanent loss of native or ruderal vegetation. It would not increase avian perching opportunities or create an

increased avian electrocution potential for the overall project. With respect to biological resources, this alternative would have slightly ~~less~~ lower impact than overhead construction.

Santa Ana River Bike Trail

The evaluated alternative would include underground construction to cross the bike path. This would require the excavation of an open trench and installation of a concrete duct bank. This alternative would result in minimal increased temporary and permanent impact to non-native grassland of less than 0.25 acre for the trench, access vaults and fence enclosures for the terminus poles. It is not expected to result in significant impacts to biological resources other than those presented in Chapter 3 discussion. The additional wiring and ~~engineering hardware~~ of the terminus poles could provide an increased avian electrocution risk or indirect impact from operation and maintenance, which would be reduced through construction specification to insulate potential contact points.

Land and Water Conservation Fund Site (Hidden Valley Wildlife Area)

The evaluated alternative would include underground construction through an approximately 12-acre parcel (assumes a 100-foot wide ROW) of LWCF area along the south bank of the Santa Ana River (see Land Use – Chapter 3). It is expected that this construction would include a 100-foot temporary construction ROW that is approximately 1.0 mile in length. This area comprises primarily non-native grasslands. It borders the Santa Ana River channel, which is designated Critical Habitat for least Bell's vireo and Santa Ana sucker.

The construction would require vegetation clearing, topsoil salvage and stockpile, trenching, soil stockpiling in windrows, line pulling, concrete pouring, backfill, and restoration. This evaluated alternative has increased construction disturbance and erosion potential in comparison to the tower construction and has the potential to affect this Critical Habitat and indirectly impact sensitive or protected wildlife species. This alternative is not determined to have a high potential to affect sensitive or protected plant species because of the level of non-native species present in the existing vegetation and the lack of observed sensitive species or characteristic habitat during initial botanical surveys.

Trenching is expected to result in a higher impact to common wildlife species directly through mortality of animals in burrows and indirectly through a larger temporary loss of potential foraging and breeding habitat. This, however, would not be expected to result in the federal or State protection of an affected common or sensitive species. The undergrounding alternative would result in less than significant impacts for wildlife.

MSHCP Compliance Analysis

The underground alternatives evaluated would not significantly affect the MSHCP compliance determinations discussed in Chapter 3. Underground construction has the potential to affect riparian vegetation within the Santa Ana Riverbed but not in the other three locations. The open trenches would present a short-term hazard to common and potentially sensitive wildlife, but would not significantly affect movement corridors because of the temporary nature of the trench, assumed biological monitoring, and ability to provide egress points from an open trench.

This alternative has a greater potential to affect possibly occurring rare endemic plant species, but this potential is still determined to be low because of the lack of suitable habitat that would

be affected by this alternative. The underground alternative has the same potential to affect western burrowing owl as that described in Chapter 3, and avoidance and minimization requirements would be the same to avoid active nests. This alternative would be expected to comply with MSHCP requirements and compensate through land acquisition or mitigation acreage purchase for construction impacts. This would be more than expected to be required for the tower construction because of the increased construction disturbance footprint, although not significantly less than the Proposed Project.

Biological Resource Conclusion

The evaluated underground alternative would affect more native and ruderal habitat than the Proposed Project evaluated in Chapter 3. The alternative has the potential to affect protected and sensitive wildlife, plants, and Critical Habitat in the Santa Ana River. Additionally, the evaluated alternative has an increased potential for indirect impact from soil erosion, construction disturbance, and revegetation requirements. Finally, operation and maintenance is expected to result in additional disturbance because of the potential requirement to excavate the utility for repair and maintenance actions. Significant impacts would occur in some locations with the undergrounding alternative.

Cultural Resources

At locations known to contain buried cultural resources, direct physical impacts to these resources, particularly archaeological sites, are more likely to occur as the amount of ground disturbance from excavating, grading, trenching, and similar activities increases. Because the installation of an underground transmission line would likely disturb more land area than construction of an overhead transmission line, an underground line would have greater potential to physically disturb buried cultural resources than an overhead line, especially in areas where cultural resources could be uncovered or damaged due to the extensive trenching that would be required from an underground line. A full time archaeological monitor during construction of the underground transmission line would typically be necessary for mitigation purposes.

The principal advantage of undergrounding a transmission line for cultural resources would be reducing or eliminating visual impacts to cultural resources outside the ROW caused by the presence of poles and conductors. Some cultural resources, especially certain types of historic buildings and structures, rock art, and Native American sacred sites, may be eligible to the California Register of Historical Resources in part because of the integrity of their visual settings. The presence of an overhead transmission line may impact that setting, while there could potentially be fewer visual impacts from undergrounding, depending on the location and amount of revegetation and restoration. The potential of visual impacts in either case would depend on the presence of visually sensitive cultural resources near the proposed ROW. Cultural resource impacts from the undergrounding alternative would be less than significant.

Geology and Soils

~~Seismic considerations:~~ Underground transmission lines are more at risk for damage from earthquakes than overhead lines. A seismic event could expose the underground line to potential fault rupture, local ground cracking, and ground shaking, which could damage the underground line and result in failure to transmit power. As such, serious reliability concerns would exist. The occurrence of this type of event after construction could substantially increase the required operation and maintenance activities associated with an underground line.

~~Soils~~—Undergrounding a transmission line would impact a greater amount of soils classified as Important Farmland (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) than an overhead line, although these impacts are not considered to be significant.

Hazardous Materials

Construction vehicles would temporarily transport the same types of hazardous materials (petroleum products, solvents, and lubricating fuels) as the Proposed Project and crews would need to use and store limited quantities of these materials onsite during the underground construction period.

When compared with the Proposed Project, construction of an underground route would incrementally increase the likelihood of encountering existing contaminant residuals (known and unknown) due to the increased extent and duration of ground disturbing activities (i.e., trenching for the duct banks and associated vaults).

In some instances, operation of an underground transmission line may present additional soil and groundwater contamination risks. This is due to the fact that oil-filled underground transmission lines typically contain dielectric fluids such as alkylbenzene (a compound used in making detergents) and polybutene (a compound that is chemically related to Styrofoam), which could discharge into the surrounding environment as a result of a damaged cable system.

Incidental line leakage resulting in the release and degradation of alkylbenzene could materialize as benzene (a known carcinogenic chemical compound) in local plants or wildlife. However, for the purposes of this analysis, it was assumed that solid dielectric or extruded cable systems (XLPE), rather than fluid-filled cable types, would be used, thereby eliminating a soil or groundwater contamination threat resulting from potential fluid leaks. However, the installation of this type could still result in a frac-out during directional drilling across the Santa Ana River, whereby the drilling mud, inert bentonite, could rupture through micro-fissures and exit surface cracks within the limits of the river. If expelled, the bentonite could settle along the riverbed and be ~~dispersed~~introduced as a suspended material in the water. However, these impacts would be less than significant.

Hydrology and Water Resources

Undergrounding of a transmission line would, in the context of fulfilling the needs of this project, involve crossing the Santa Ana River. In addition, either partial or complete undergrounding of a transmission line in or along the Santa Ana River corridor would almost certainly encounter groundwater. Undergrounding a transmission line in these areas would involve both trenching and HDD methods.

A crossing of the Santa Ana River would require HDD beneath the river across its associated wetland areas. Undergrounding of a transmission line beneath wetlands could potentially disrupt the hydrology of the wetland system, temporarily or permanently eliminating wetland and riparian vegetation and disrupting associated wildlife communities. This would result in significant immitigable impacts to wetlands and wetland communities. Another potential impact of directional drilling would be a frac-out, which would alter or damage wetlands and surface

water resources at the site of the frac-out. Impacts resulting from a frac-out could be significant, depending on location and size.

Undergrounding a transmission line would also involve trenching. Trenches required for undergrounding would alter local drainage patterns which would, in turn, increase erosion and sedimentation downstream, which would impact water quality. Trenching would also temporarily change surface water flows, as tributaries to the Santa Ana River would require diversion during construction. Prolonged water diversion could potentially alter riparian and wetland communities downstream, with the effects described above.

Both HDD and trench methods would potentially encounter groundwater, given the relatively high groundwater levels within the area. As with conventional construction, if groundwater is encountered, dewatering would be necessary. Depending on the method used and the volume of water removed, dewatering could potentially lower the existing water table which would, in turn, significantly impact surrounding vegetation (including wetlands), soils and hydrology. Trenching and dewatering both have potential to permanently alter existing groundwater flows, which would also affect local vegetation communities and soils. These impacts have the potential to be significant, and would be immitigable.

Land Use

Vernola Marketplace Parking Lot

Commercial land uses (Vernola Marketplace parking lot) in the area at or near the underground transmission line would be temporarily disrupted by construction activities such as noise, dust, and traffic. Heavy construction equipment on temporary and permanent access roads, moving construction materials to sites, and returning to construction staging areas could also cause a temporary disturbance to adjacent land uses. Commercial land users may temporarily lose business due to construction activities and lack of access.

During operation, the land above the underground transmission line must remain free of secondary surface development in order to accommodate operation and maintenance activities.

~~A frac-out event could potentially cause damage to commercial properties and associated structures.~~

Santa Ana River Bike Trail

Noise, dust, and heavy equipment traffic generated during underground construction activities could negatively affect a recreationist's enjoyment of the trail or sway visitors from utilizing the trail during construction. Construction equipment may temporarily block access to the trail. If visitors choose to access the trail, temporary closure may occur in order to ensure the safety of visitors during construction, which could result in a temporary reduction in visitation.

A frac-out event could potentially cause damage to public facility properties and associated structures, but is not expected to be avoidance of a significant impact.

Santa Ana River

If approved, undergrounding would aid the Proposed Project to be consistent with the Jurupa Area Plan Policy JURAP 7.13. However, adverse environmental impacts associated with undergrounding the transmission line have been identified as being greater than the environmental impacts associated with the installation of the transmission line above ground. Significant impacts would result from this alternative.

Land and Water Conservation Fund Site

According to the Land and Water Conservation Fund State Assistance Program Manual, October 1, 2008, the State may allow underground utility easements within a Section 6(f)(3) area as long as the easement site is restored to its pre-existing condition to ensure the continuation of public outdoor recreational use of the easement area within 12 months after the ground within the easement area is disturbed. As such, undergrounding of the proposed 230 kV transmission line through these areas was evaluated. As previously stated, however, undergrounding would result in significant engineering, operational constraints that undergrounding imposes (maintenance issues, seismic susceptibility, etc.). In addition, operational and maintenance constraints of an underground 230 kV transmission system prevent restoration of the ROW to pre-construction conditions. Accordingly, undergrounding is infeasible in these areas. Please refer to Chapter 6, Section 6.4.3 for further discussion of impacts.

Noise

Construction of an underground transmission line would require substantially more construction activity, resulting in increased noise due to continuous trenching activities. In addition, maintenance activities would take more time for an underground transmission line, which would lead to an increased noise impact from operation and maintenance, although it is not considered a significant impact.

Population and Housing

Underground construction and trenching would involve much greater construction-related impacts (air quality, traffic, noise) to residential areas than that of overhead transmission line construction. However, similar to an overhead transmission line, no impacts would be expected from the construction and operation of an underground transmission line in respect to potential effects to population and housing. Neither type of installation would be expected to induce population growth, displace existing housing, or cause the displacement of people.

Public Services/Utilities

As with the Proposed Project, construction of the underground alternative could lead to a temporary utility service disruption if existing utility lines are encountered and damaged during project excavation activities. The likelihood of a co-location accident with existing underground facilities would be slightly greater due to the extent of excavation required for construction of an underground line relative to an overhead line. However, standard measures (i.e., notification of the underground service alert, flagging and/or staking the location of known utility lines for avoidance, etc.) would be employed prior to and during construction of the underground route to ensure avoidance of such an accident.

During project operation, an underground transmission line would be more prone to damage that could result in a potential long-term electrical service outage. While underground transmission lines are relatively immune to weather conditions, they are susceptible to cable/splice failure, washouts, seismic events, and incidental damage from excavation. Further, while overhead transmission line damage can generally be identified and repaired in a matter of hours, the subsurface location of a buried line could conceal the extent of damages to the ROW until it becomes extensive. Outages related to underground line failure could leave customers without power for days or even weeks while the damaged area is located, excavated, and repaired. This is considered a significant impact that could not be mitigated with this underground alternative.

At the end of the project's useful life, components from an underground line would be harder to recycle and would generate more waste, compared to overhead construction, requiring greater disposal at a landfill.

Traffic and Transportation

Traffic and transportation-related impacts associated with undergrounding the 230 kV transmission line would occur at the Vernola Marketplace shopping center. This shopping center has over 25 merchants and a paved parking lot with entrance/exit locations along Limonite Avenue and Pats Ranch Road. The 230 kV line would be buried in the center of the parking lot. Equipment and materials would need to be delivered to the construction site. Construction equipment would excavate the parking lot to place the transmission line infrastructure. This would require creating a work area and secure equipment/storage area on the parking lot, resulting in a reduction of available parking spaces to customers and employees, detours, inconvenience to shoppers, employees and delivery personnel, and changing driver expectations within the parking lot. Motorists may experience longer traffic queues entering or exiting the shopping center as a result of construction. If repairs were needed on this buried section of the line, impacts similar to those that occurred during construction would occur and would be longer in duration, as repairs to underground lines require more time to complete.

Traffic and transportation-related impacts are not anticipated to occur for the three other locations where undergrounding was evaluated (Santa Ana River, Land and Water Conservation Fund site, and Santa Ana River Bike Trail).

Underground 69 kV Subtransmission Line

As with the 230 kV transmission line alignment, undergrounding the 69 kV subtransmission systems is infeasible ~~both as a full undergrounding alternative and as a localized undergrounding mitigation measure~~ for the same technical, construction, maintenance, and reliability factors described above for the 230 kV line. General construction methodologies and challenges associated with underground subtransmission lines are similar to undergrounding transmission lines described in the above section. Underground duct banks would need to be created with access/splicing vaults constructed at approximately 1,500 to 2,000-foot intervals. For planned construction of the 69 kV subtransmission lines within existing road ROWs in a dense urban setting, extensive road and sidewalk excavation would be required for trenching, and the costs would be significantly higher (a minimum of three to five times higher), which would not meet the Proposed Project objective of being cost-effective.

Ground disturbance would be much more significant than overhead construction during construction, and would result in similar impacts to placing an underground pipeline. An underground line for the 69 kV subtransmission line component would likely be placed within road ROWs within the City of Riverside. Therefore, significant disruption to traffic on local streets and arterials would result during the Proposed Project construction and during line maintenance. Disruption to traffic due to construction activities may also have an impact on access to local businesses along the route. In addition, efficiencies, costs and reduced impacts gained by co-locating some sections of the new line on existing structures would be lost. Therefore, the full underground alternative would significantly impact traffic during construction and not meet the Proposed Project objective of being cost effective.

~~ANA full~~ underground alternative would also be more difficult to maintain, and disruptions to service could occur for longer periods of time than with overhead construction (days or weeks rather than hours). The cost of placing all of the 69 kV routes underground would be significantly more than overhead construction. According to the 1999 EPRI study *Underground Transmission Cable Technical Limitations*, the single most important factor that limits the use of more underground transmission and higher capacity underground cables is economics in comparing the cost to overhead transmission. Cost ratios between underground and overhead transmission lines are difficult to establish, as many site-specific factors lead to various costs of both systems. However, in general shorter, lengths of underground installations typically have a higher ratio to overhead and can vary between 10-20 to 1 in total costs.

These high ratios for shorter distances of underground are possible because the termination structures (those structures that transition from overhead to underground) dominate the cost of the entire length of the underground system. Termination structures are highly engineered structures that require specific manufacturing specification to accommodate the transition from overhead to underground.

As described above, these factors make it economically infeasible to construct ~~ana full~~ underground alternative ~~or even to underground in specific locations as a potential means of mitigating localized impacts~~. These conclusions hold true even for the 69 kV subtransmission lines. Also as discussed above, the ratios may be lowered for longer lengths of underground, but would still be expected to be multiple times more costly than overhead, thus making undergrounding economically infeasible for the 69 kV subtransmission lines, ~~both as a full undergrounding alternative and as undergrounding in specific locations as a means of potential mitigation.~~

Additionally, and similarly to what was described above for the 230 kV transmission line alignment, any impact reduction associated with reduced aesthetics impacts would be more than offset by increased impacts to other resources from the placement of the subtransmission lines underground. Because of these increased environmental and construction impacts and possible maintenance and reliability concerns, ~~ana full~~ underground alternative for the 69 kV lines was eliminated from further consideration. However, a section of the 69 kV subtransmission line would be placed underground in the vicinity of Riverside Municipal Airport as described below.

During the comment period for the DEIR, the Riverside County Airport Land Use Commission (ALUC) submitted a comment regarding the significant impact that would occur within the Airport Influence Area of the Riverside Municipal Airport that could potentially impact airport

operations. The ALUC advised that above-ground lines would be found inconsistent with the 2005 Riverside Airport Land Use Compatibility Plan. As a result, RPU modified the proposed 69 kV subtransmission line route so that it would travel underground in the vicinity of the airport land use zones along Doolittle Avenue, between Jurupa Avenue and Morris Street. Also, as a result of review by the Federal Aviation Administration, new poles along Wilderness Avenue, north of Jurupa Avenue, would be equipped with obstruction lighting. On April 12, 2012, ALUC conducted a development review and determined that the proposal to establish 69 kV subtransmission lines within the Riverside Municipal Airport Influence Area, as revised to place all portions within Airport Compatibility Zone A underground, is consistent with the 2005 Riverside Municipal Airport Land Use Compatibility Plan. A copy of the entire ALUC Development Review determination is located in Attachment A in Volume I of the Final EIR for the Proposed Project.

Finally, RPU's standard construction practice and policy for subtransmission lines is overhead construction, and the existing subtransmission system in the City in the area of the Proposed Project is already served by overhead lines. Riverside Municipal Code Chapter 14.24 is entitled "Underground Utility Installation". This City policy of underground construction has resulted in approximately 60% of RPU's existing distribution system being installed underground. For RPU, "distribution" is considered below 30 kV and "transmission" is greater than 30 kV. In Section 14.24.070, exceptions to the underground policy are listed including Paragraph C: "Poles, overhead wires and associated overhead structures used for the transmission of electric energy at nominal voltages in excess of thirty thousand volts." This exclusion from undergrounding has resulted in less than 5% of the existing transmission system being installed underground. Each instance of transmission underground construction is a result of a specific requirement peculiar to each project. Note that about 0.5 mile of the 11 miles of new construction proposed in this Project would be underground as a result of direction received from the Riverside County Airport Land Use Commission. Thus, the 69 kV portion of the RTRP in its current concept is extensively integrated into existing overhead subtransmission lines, except in the Riverside Municipal Airport vicinity where a section would be placed underground, and it would be infeasible for policy purposes to approve a fundamental change in the method of subtransmission line construction (see *California Native Plant Society v. City of Santa Cruz* [2009—upholding an infeasibility finding on policy grounds]).

Summary Regarding Undergrounding

Overall, and as set forth above, an alternative that would underground the Proposed Project's 230 kV and 69 kV lines in their entirety would be infeasible due to engineering, technological, and other factors. An underground alternative would also be economically infeasible. Further, and although such an alternative might provide *some* overall increase in reliability, an underground alternative would not meet the Proposed Project's fundamental goal of increasing long-term reliability of the transmission and distribution system in the area to the same extent as the Proposed Project. Finally, an alternative that undergrounds the Proposed Project would help to reduce aesthetic impacts but would also result in other new, significant environmental impacts or increased significant impacts (e.g., air quality, land use disturbance) as compared to the Proposed Project. ~~All of these same conclusions also apply to undergrounding even limited portions of the Proposed Project as a means of potential mitigation for localized impacts. Thus, both an underground alternative to the entire Proposed Project and a localized underground mitigation measure are~~ is not reasonable or feasible and would not avoid or reduce the Proposed Project's

overall significant impacts. Thus, full undergrounding was eliminated from further consideration in this alternatives discussion and also rejected. Undergrounding a section of the proposed 69 kV subtransmission line in the vicinity of the Riverside Municipal Airport is retained as an infeasible a feasible mitigation measure for airport land use compatibility.

Direct Current (DC)

Direct Current (DC) transmission systems are considered for projects where there are considerable distances, and are ~~typically found in rare instances~~ rarely in the backbone transmission system in the Western U.S. There are two DC lines in the western United States; both are 500 kV DC point to point transmission lines from large generation sources terminating in the Los Angeles area.

DC is also used in limited instances where a connection between two asynchronous systems is required, such as connections to the transmission system east of the western transmission system (~~Western Electric Coordination Council~~), also known as the Western Electric Coordination Council. There are several of these “back to back” DC interconnections between asynchronous transmission operating systems in the U.S., such as in eastern Montana and between the Texas and New Mexico systems. An Alternating Current (AC) system was selected for the 230 kV transmission system because it would allow flexibility to interconnect with the existing California high-voltage transmission system and could reasonably be constructed and operated. DC would not be compatible with the all-AC system in the U.S., since DC would need to be converted to AC, and this takes a lot of space on the ground to place ground electrodes. The expense of such a system alone would make it infeasible as a viable alternative.

The typical minimum break-even distance necessary to make a DC line feasible is more than 400 miles, and then typically only lines larger than 230 kV in size are built as DC. (EEI 2005). The cost of DC terminals would be many tens of millions of dollars and by itself would be much greater than the cost of the entire Proposed Project. DC transmission would impart no specific benefit to the Proposed Project. A DC system would also not reduce any environmental or community impacts. For these reasons, the alternative to construct and operate the 230 kV interconnection line as DC was eliminated as infeasible.

Currently, no 69 kV DC subtransmission systems operate in the U.S. RPU's subtransmission system has no DC elements. Developing the subtransmission portion of the RTRP as DC would be completely infeasible because it would require significant infrastructure changes, increasing both cost to infeasible levels and increasing environmental impacts. DC could offer no advantages over AC for the 69 kV lines. The alternative of 69 kV DC, so is therefore infeasible, and is eliminated from detailed evaluation.

Alternative Conductors

Conductors are the large braided wires (or cables) that hang between poles or transmission line structures and conduct electricity from substation to substation in a electric system such as that operated by RPU. There are many types of conductors based on what the specific strength and conductance needs are for the project. Several of the conductor types were evaluated and eliminated from consideration (see sections below).

Aluminum Core Composite Conductor/~~Aluminum Conductor Composite Reinforced~~

Aluminum Core Composite Conductor (ACCC) is a relatively new conductor, or wire, product that has been described as potentially doubling the electrical capacity of within existing (ROWS) without costly rebuilding of transmission structures. The conductor's physical makeup has typical annealed aluminum stranding on the outer portion of the conductor, with fiberglass composite core ~~as the strength member of the conductor.~~ The composite ~~core's physical properties have a~~ core has very low modulus of thermal expansion properties under extreme heat, making the conductor nearly immune to ~~sag increase problems associated with increased temperatures~~ sagging lines when they are fully loaded. This ~~characteristic type of conductor is~~ particularly useful ~~as a replacement of where existing transmission lines with constraints in current carrying capacity because of have clearance concerns — i.e., the conductor becomes too hot and sags too high problems~~ under heavy electrical loading conditions. ~~This need is exaggerated on longer span lines as sag is magnified with increasing temperatures~~ Lines in rugged terrain where spans are long between structures can also benefit from this type of conductor.

Aluminum Conductor Composite Reinforced (ACCR) has an aluminum-silica matrix stranded core. The core strands contain aluminum oxide fibers embedded in high-purity aluminum, ~~forming a wire. This type of material is called~~ referred to as a fiber-reinforced metal matrix. ~~The fiber reinforced metal matrix. This composite has strength equivalent to steel, with weight (i.e., density) similar to aluminum, but with less lower thermal expansion than steel, and good strength retention at high temperatures. Some secondary properties include low creep, high electrical conductivity (from the aluminum constituent), and corrosion resistance (similar to aluminum).~~

The RTRP lines ~~do are~~ not ~~appear to qualify as~~ candidates for ~~the applications of~~ a high-temperature conductor such as ACCC or ACCR, as ~~they neither~~ this line wouldn't have long spans nor are they heavily loaded either mechanically (distance between structures), heavier than normal structural loads, or electrically. heavy electrical loading (i.e., causing heat and sagging). A transmission line with longer spans would be built using stronger cables capable of those types of spans that are normally reserved for rural projects where a wider ROW and bigger towers are practical. Urban lines, such as the RTRP, normally require narrower ROW and poles rather than large and tall steel lattice towers to reduce visual and land use impacts.

Additionally, the cost of ACCC or ACCR is two to three times that of a traditional conductor, ~~and use of these conductors create~~ creating additional construction costs for material handling and training, as well as the tooling and inventory expense of maintaining stock for the specialized materials ~~that ACCC and ACCR requires. Any potential reduction in line sag would be minimal, and would not justify the increased cost of using ACCC or ACCR over the proposed ACSR conductor.~~ Because the conductor cost for a transmission line is a large part of the material cost, the additional cost of these conductors would be significant and would not meet the Proposed Project objective of being cost effective. Furthermore, there would be no reason to go with a higher cost conductor when the Proposed Project is of acceptable strength and conductance for this application. Therefore, this technology was eliminated from detailed evaluation.

6.4.4 SITING AND ROUTING ALTERNATIVES

230 kV Transmission Line Routes Eliminated

Alternatives for the 230 kV transmission portion of the Proposed Project are the primary components of the Proposed Project that have received the most focus from the public. The majority of public scoping comments received were in regards to the siting of the 230 kV transmission line. Primarily, two alternatives received ~~much~~ the most feedback, those being the Bain Street and the Eastern Alternatives. Because public and elected official interest was very important to the consideration of routing alternatives, these two routes were analyzed in greater detail than other alternative routes considered for the Proposed Project. Several routing modifications and adjustments were made by SCE and RPU in an effort to make these two routes feasible and in an effort to reduce environmental impacts from them. To this end, a more detailed analysis has been included within this chapter regarding both the Bain Street and Eastern Routes, as described below, investigating the routes' feasibility, ability to meet Proposed Project objectives, and ability to reduce environmental impacts.

Limonite Route

Alternative Description

A Limonite Avenue route would consist of a double-circuit 230 kV transmission line adjacent to Limonite Avenue, between Van Buren Boulevard and Interstate 15. Following route identification (siting study), field reconnaissance was completed to determine the feasibility of a Limonite Avenue route. There are numerous areas with homes and businesses adjacent to Limonite Avenue. Planned residential land use associated with Interstate 15 Specific Plan No. 266 is located on the north side of Limonite, west of Wineville Avenue, and was considered an area of "high avoidance" during the siting study.

A few variations of this potential alternative could exist, depending on what point along Limonite the potential alternative would begin between Van Buren Boulevard and Interstate 15. There could be many crossings of Limonite Avenue between Van Buren Boulevard and Interstate 15 in order to maximize the avoidance of residential and commercial development. In many cases, avoidance does not appear to be feasible.

Meeting Purpose and Need/Objectives

As this alternative would involve the construction of a transmission line that would convey the same amount of power as the Proposed Project and permit the development of an electrical loop from the Mira Loma - Vista #1 230 kV transmission line tying into Wildlife Substation, it would meet many of the Proposed Project's basic objectives to meet projected electrical energy demands, and increase system reliability and flexibility. However, this alternative would not be expected to reduce significant impacts associated with the Proposed Project and would not meet the Proposed Project's objective of *meeting the Project need while minimizing environmental impacts*, as discussed in more detail below.

Potential to Avoid or Minimize Environmental Effects

Links associated with the Limonite Avenue alternative were analyzed for environmental impacts. Construction and operation of a transmission line on this route would not avoid or minimize

environmental effects more so than the Proposed Project, and would create significant adverse impacts to resources, which are briefly described in the following subsections.

Existing residential / commercial

There are numerous areas with homes and businesses adjacent to Limonite Avenue. Although many of these locations occur only on either the north or south side of Limonite Avenue, there are some “pinch points,” or those areas where existing development is present, on both the north and south sides of the street. To meet SCE safety and reliability needs within the ROW easements, private property acquisitions including the take of residences (i.e., removal) and/or other property structures could not be avoided. Taking homes to accommodate the ROW would be a significant impact, and since there are other alternative routes where this significant impact could be avoided, this alternative is eliminated from further consideration.

Other impacts contributing to eliminating this alternative are described in the sections below.

Planned residential

Specific Plan No. 266 (I-15 Corridor) has been approved by Riverside County. The route would traverse planned residential and commercial uses as designated by the specific plan on the north side of Limonite Avenue up to Bellegrave Avenue, between Wineville Avenue and Interstate 15. A route through this area could potentially conflict with planned medium-density residential uses and commercial development by precluding or preventing a developer from developing this land for residential and commercial uses.

Numerous crossings of Limonite Avenue

There could be many crossings of Limonite Avenue between Van Buren Boulevard and I-15 in order to maximize the avoidance of residential and commercial development. In many cases, avoidance is infeasible due to the “pinch points” present on the route (see “Existing residential / commercial” above). From a review of aerial photos and field reconnaissance, there could be between seven and ten crossings of the street. Street crossings increase the visual influence of lines crossing perpendicular to the traffic corridor and degrade aesthetic appearance. Additionally, construction of the line at the crossings would require disruption and redirection of traffic along Limonite Avenue over the approximately four miles between Van Buren Boulevard and I-15.

Recommendation for Further Analysis

ELIMINATION. ~~Although this~~ Taking homes to accommodate the ROW on Limonite Avenue would be a significant impact that would be avoided by other reasonable alternative ~~would meet most of routes, including the Proposed Project objectives and is feasible to construct, the;~~ thus the Limonite Avenue alternative ~~would not minimize or avoid impacts to environmental resources to a greater extent than the Proposed Project.~~ is eliminated from further consideration. Existing land uses, such as residential and commercial developments adjacent to Limonite Avenue, would be adversely affected by the proposed construction and operation of a transmission line on this route. For these reasons, this alternative is eliminated from further analysis.

Bain Street

Alternative Description

A Bain Street route would tie into the Mira Loma - Vista #1 230 kV transmission line within Riverside County. The northern portion of the Bain Street route is essentially the same as that for the Van Buren Route until the route reaches Bain Street. At that point, the route progresses south following Bain Street. It extends in a southerly direction past Limonite Ave., and then proceeds in an easterly direction on the north side of the Santa Ana river area following the approximate boundary of the 100-year floodplain. As the route approaches the location where Van Buren Boulevard crosses the Santa Ana River, the route has two localized routing options. One option proceeds south and crosses the Santa Ana River. Once it crosses the Santa Ana River, it follows the path of the Proposed Project, crossing Van Buren Boulevard and continuing east along the southern boundary of the water treatment facilities. The route then continues east to the proposed new Wildlife substation location. The other option remains north of the Santa Ana River, crosses Van Buren Boulevard, rejoins with the Van Buren Route, continues a short distance east, and then proceeds across the Santa Ana River directly to the north of the proposed new Wildlife Substation.

Meeting Purpose and Need/Objectives

As this alternative would involve the construction of a transmission line that would convey the same amount of power as the Proposed Project and permit the development of an electrical loop from the Mira Loma - Vista #1 230 kV transmission line tying into Wildlife Substation, it would meet the Proposed Project's basic ~~objective to meet projected electrical energy demands, and increase system reliability and flexibility. However, protracted permitting processes for the U.S. Army Corps of Engineers (USACE) and Land and Water Conservation Fund (LWCF) would cause this alternative to fail to meet timing requirements of the Objectives. A Bain Street Route would not satisfy the objectives of the RTRP.~~ objectives except reduction of environmental impacts.

Potential to Avoid or Minimize Environmental Effects

~~Links associated with the Bain Street~~ This alternative were reviewed for environmental impacts. Construction and operation of a transmission line on this route would not avoid or minimize environmental effects more so than reduce the Proposed Project, and Project's significant impacts and for some resource areas would create adverse increase the severity of impacts to numerous resources, which. The reasons that this alternative was eliminated from further consideration are briefly described in the following subsections. section below.

Aesthetics

Visual impacts are similar to other alternative routes. Primary impacts would be to residences located on Bain Street, where the visual character of the neighborhood would be adversely affected by the construction of a new transmission line. The new line would also introduce dominant, contrasting features within the scenic viewshed of the Santa Ana River corridor as seen from residences located on Limonite Avenue and Bain Street, as well as for roadway travelers. Viewers from this location currently see an unobstructed, vegetated riparian corridor, and one of the few apparently intact open spaces in the valley. The river corridor in this area also appears relatively unaltered. Strong contrasts would be created, and scenic vistas to the river would be obstructed from these residences.

Recreation viewer impacts would result primarily for viewers using the Santa Ana River National Recreational Trail. The Proposed Project would cross the trail on the southeast side of the Van Buren Bridge and parallel the Santa Ana River, at the edge of the Santa Ana River channel, for two miles. The scenic quality of the Santa Ana River corridor would be degraded as a result of steel lattice towers and pole structures, particularly as viewed from the Hidden Valley Wildlife Area trails, which include predominantly north-facing views toward this alternative location across the river, as compared to the Proposed Project, which would be located to the south of the Hidden Valley Wildlife Area, although within the foreground views. These significant visual impacts would be avoided by eliminating this alternative.

Biological Resources

The Bain Street Alternative was evaluated to determine the presence of special-status species of plants and wildlife along the route, as well as for the potential for such species to occur along the route. The burrowing owl is known to occur along this route, and the Coastal California gnatcatcher was determined to have a moderate potential of occurring. In addition, suitable habitat is present along the route to support sixteen sensitive plant species. Impacts could occur to these plant species as a direct result of construction activities (mortality) or as an indirect impact if invasive plants were accidentally introduced during construction activities.

This alternative, similar to the Proposed Project, would cross perennial and intermittent rivers and streams, canals/aqueducts, riverine and palustrine wetlands, and floodplains. Initial calculations on the potential impacts indicated approximately 4.5 miles of impacts to terrestrial and aquatic habitats as a result of the transmission line crossing water resources, ground disturbance required during construction, and impacts associated with the operation and maintenance of the line.

Cultural Resources

According to an intensive cultural resources survey by URS Corporation in 2008, four previously recorded cultural resources were located within or adjacent to the Bain Street Route. These include one prehistoric milling complex, one multi-component prehistoric and historic site, one historic transmission line, and a set of historic concrete block well structures. Bain Street also passes through two historically distinct neighborhoods: Mira Loma, which contains the Cantu Ranch National Register of Historic Places property, and Pedley. Construction of the Bain Street Route could adversely impact cultural resources by potentially involving destruction, damage, or alteration of all or part of the property, or introduction of visual, audible, or atmospheric elements that are out of character with the property or its setting.

Land Use

Land use impacts at the Mira Loma Middle School, at the crossing of the Santa Ana River, and at the Hidden Valley Wildlife Area would be significant, which would result in the elimination of this alternative. Other reasonable alternatives are available where the extent of these impacts are reduced. A further explanation of these land use impacts is found below.

This route traverses the community of Mira Loma and impacts residential and industrial areas of the community. The recently constructed industrial project, Birtcher Center at Bellegrave, is located at the southwest corner of Bellegrave Avenue, Van Buren Boulevard, and Bain Street.

Three recently constructed buildings associated with this project would significantly impact the route, as portions of the buildings are situated within the alternative route's proposed ROW.

The California Department of Education has enacted guidelines (California Department of Education – School Site Selection and Approval Guide, 2000) that require newly proposed schools and the construction of new school buildings to be certain distances from the edge of a transmission line ROW. These guidelines require that schools be set back 150 feet from overhead 220 to 230 kV transmission lines. This alternative route would be within 150 feet of Mira Loma Middle School and, therefore, this route would result in an unacceptable risk that warrants it being eliminated from further consideration.

The route would traverse the Paradise Knolls Golf Course, potentially interfering with golf-course related recreational activities. The route would also adversely impact a Riverside County regional trail (situated north and parallel to the Santa Ana River) and the Hidden Valley Wildlife Area. The Riverside County Regional Park and Open Space District has expressed significant concerns over the route in relation to this trail.

The route also traverses the most land within the Hidden Valley Wildlife Area. The Hidden Valley Wildlife Area is designated by the Riverside County General Plan as Open Space-Habitat. Land Use Compatibility Policy LU 6.2 states that public facilities shall not be allowed in areas of this designation. Spanning or placing transmission lines on these lands would also constitute a conversion from open space to industrial land under the LWCF, according to the California State Parks, Office of Grants and Local Services. Any such conversion would be evaluated for approval by the National Park Service ~~in conjunction with California State Parks.~~ Construction activities would result in noise, dust, and traffic that would reduce the aesthetic value of the area and disrupt recreational and/or open space areas. Furthermore, this route would have the longest crossing of the Hidden Valley Wildlife Area, and include the conversion process, which contributes to this alternative route being eliminated from further consideration.

Land use impacts from this alternative would be significant, and these impacts would be avoided by eliminating this alternative.

Water Resources

The Bain Street Alternative would cross the Santa Ana River near the Van Buren Bridge and proceeded west to Bain Street. Approximately one mile of the proposed route would be placed in the Federal Emergency Management Agency (FEMA) floodplain designated Zone AE. Zone AE is defined as Special Flood Hazard areas subject to inundation by a 100-year flood. Of the one-mile portion of the route within the 100-year floodplain, approximately 50 percent would also be within the 10-year floodplain, which is designated by USACE as the Ordinary High Water Mark (OHWM). USACE claims jurisdiction within the OHWM (pursuant to 33 CFR 328), and restricts construction of structures and facilities within this zone. This section of the Bain Street Route was flooded as recently as January 2005, when heavy rainstorms caused the river to rise over the levee on the southern edge of the Paradise Knolls Golf Course and flood the southern half of the course.

Feasibility

This alternative is feasible to construct; however, a portion of the route within the 10-year flood zone would present significant permitting, operations, maintenance and reliability issues, and it is therefore eliminated from further consideration.

Recommendation for Further Analysis

ELIMINATION. Although this alternative would meet some of the Proposed Project objectives and is feasible to construct, the alternative would not minimize or avoid significant impacts to environmental resources to a greater extent than the Proposed Project or other reasonable alternatives, and in fact would involve lengthy permitting processes. Land use, aesthetics, water resources, and cultural resources have result in significant impacts that could be avoided with the potential to be adversely affected Proposed Project. Locating the line within the setback boundaries established for schools by the ~~proposed construction and operation~~ California Department of ~~a transmission line on~~ Education is unnecessary when there are other reasonable route alternatives that would avoid this ~~route~~ significant impact. In addition, the public has expressed opposition to this alternative ~~is high as expressed during public meetings conducted from after the completion~~ throughout this EIR process. The crossing of the ~~siting study up to the current time~~ Hidden Valley Wildlife Area also contributes to the elimination of this alternative from further consideration, as it would cross the most designated land of any alternative evaluated. This analysis also revealed incompatibilities between the Bain Street Route the County's master plan, which calls for the widening of Bain Street to the point that there is not sufficient ROW width for the permanent siting of the 230 kV transmission structures (Riverside County 2008). For all of these reasons, this alternative is eliminated from further analysis.

Eastern Route(s)

Alternative Description

The Santa Ana River East Corridor was included as a potential corridor for siting a 230 kV transmission line in the June 2006 Siting Study for this Proposed Project. The corridor encompasses the entire river corridor from the proposed Wildlife substation to the Mira Loma - Vista #1 230 kV transmission line approximately two miles west of the Vista Substation. North of the Riverside-San Bernardino County Line, the corridor widens to include the predominantly industrial and agricultural areas on the north side of the Santa Ana River. The corridor includes those areas to the east and west of Riverside Avenue. The alternative routes within the Santa Ana River East Corridor would leave the proposed Wildlife Substation and travel northeast, generally paralleling the Riverside City boundary, along the south side of the Santa Ana River and parallel to existing RPU 69 kV subtransmission lines to Mission Boulevard. Another alternative was sited and evaluated that would cross to the north side of the river near the Union Pacific Railroad bridge, crossing approximately 0.5 mile east of the Wildlife Substation. The alternatives located on the north side of the river would not parallel any existing overhead utilities, and would require crossing back to the south side of the river due to dense residential development near Highway 60. Moving further northeast and beyond Mission Boulevard there would be two alternative routes, one located on both the south and north sides of the Santa Ana River. These alternatives would continue adjacent to the river northeast to the Mira Loma – Vista #1 230 kV transmission line.

Meeting Purpose and Need/Objectives

As this alternative would involve the construction of a transmission line that would convey the same amount of power as the Proposed Project and permit the development of an electrical loop from the Mira Loma - Vista #1 230 kV transmission line tying into the Wildlife Substation, it would meet much of the Proposed Project's basic objective to meet projected electrical energy demands, and increase system reliability and flexibility. ~~Although a transmission line within the corridor. However, while this alternative~~ would satisfy much of the objectives of the Proposed Project, the route would cross out of the area covered by the Western Riverside County MSHCP and into San Bernardino County, triggering protracted biological studies and therefore ~~meeting the timing requirements of the Proposed Project, resulting in significant impacts to the land use designation of the river corridor, as well as to the wildlife species inhabiting the river corridor.~~ As required by the Endangered Species Act (ESA), Section 10, a Habitat Conservation Plan (HCP) would be expected for permitting impacts to federally endangered San Bernardino kangaroo rat within San Bernardino County.

Potential to Avoid or Minimize Environmental Effects

~~This alternative would not reduce the Proposed Project's significant impacts and for some resource areas would increase the severity of impacts.~~ Developing a potentially feasible eastern alternative has presented a variety of serious challenges from constructability, regulatory, land use constraint, and environmental perspectives. ~~In addition, the eastern corridor presents would have higher environmental impacts and permitting issues in excess of than~~ the other possible routes investigated by SCE in 2008. Construction and operation of a transmission line within this corridor would not avoid or minimize environmental effects and, ~~in fact,~~ would create significant adverse impacts to numerous resources, which are briefly described in the following subsections.

Aesthetics

Construction and operation of a transmission line in this corridor would degrade scenic vistas to the Santa Ana River corridor and the Santa Ana River trail ~~from nearby residences and other viewpoints.~~ The contrast created by new conductors and structures would adversely affect residents and trail users. In addition, this alternative, like the Proposed Project, would not meet the goal in the City of Riverside General Plan that states that utilities shall be undergrounded where feasible and be located in a manner to harmonize with the natural environment and amenity of the river. However, the goal of undergrounding utilities is stated *where feasible*, and as discussed earlier in this chapter, undergrounding the transmission line was considered to be an infeasible alternative for the Project. Although this impact would be similar to the Proposed Project, ~~the impacts significant visual impacts would extend farther along the river corridor and adjacent to more residential for a greater distance in association with this alternative when compared to the Proposed Project. In addition, this alternative would be located adjacent to more residential areas along the river corridor in comparison to the Proposed Project. Aesthetic impacts would be expected to be greater than those associated with~~ the Proposed Project.

Biological Resources

The Santa Ana River East corridor (Eastern Route) was evaluated to determine the presence of special-status species of plants and wildlife in the corridor, as well as for the potential for such species to occur in the corridor. The burrowing owl and Los Angeles pocket mouse are known to occur in the corridor. Fourteen special-status wildlife species have a moderate to high potential

of occurring in the corridor. In addition, suitable habitat is present along the route to support sixteen sensitive plant species. Direct significant impacts could occur to these plant species as a result of construction activities (mortality) by the destruction of the plant species or through the removal of their habitat. Indirect impact could also occur if invasive plants were accidentally introduced during construction activities.

Construction of a transmission line in this corridor has the potential to remove or degrade habitat of an existing conservation area or an area proposed for conservation under an approved plan or program. Within this corridor are Criteria Cells that are part of a Criteria Area designated in Riverside County's MSHCP. Each cell is 160 acres in size and is an area where conservation potentially needs to occur to secure habitat for several sensitive species. Some of these Criteria Cells would be encroached upon with the construction and operation of a transmission line. Proposals for new land uses, such as a transmission line, must be evaluated for effects, and a habitat assessment must be prepared for review and approval by a local agency with land use authority.

A new transmission line in this corridor would cross perennial and intermittent rivers and streams, canals/aqueducts, riverine and palustrine wetlands, and floodplains. Initial calculations on the potential impacts indicated approximately 7.5 miles of impacts to terrestrial and aquatic habitats as a result of the transmission line crossing water resources and ground disturbance required during construction. These impacts could be mitigated or permitted similar to the Proposed Project. However, this alternative would be located within the floodplain and within wetland areas at a much greater extent as compared to the Proposed Project; therefore, impacts would be expected to be higher as compared to the Proposed Project.

A route in this corridor would extend into San Bernardino County to tie into the Mira Loma - Vista #1 230 kV transmission line. Crossing into this county would require consultation with the U.S. Fish and Wildlife Service under the federal ESA to reach an agreement to construct the line, since an MSHCP does not exist for San Bernardino County.

Biological impacts would be expected to be greater than those associated with the Proposed Project, and significant impacts could be avoided by eliminating this alternative from further consideration.

Cultural Resources

Four California Historic Landmarks (CHLs) (Louis Rubidoux House, Rubidoux Grist Mill, Aqua Mansa Pioneer Cemetery, and Cornelius and Mercedes Jenson Ranch) and two properties listed on the National Register of Historic Places (Chinatown district and a prehistoric pictograph site) would be located within or adjacent to the corridor. The corridor is also in proximity to four historically distinct neighborhoods, at least two of which have historically important architectural features. The names of these historically distinct neighborhoods include: Rubidoux, Downtown Riverside, Grand, and the City of Grand Colton in San Bernardino County. Direct visual impacts to the CHLs and historic neighborhoods may result when highly visible modern structures, such as transmission lines, are introduced into a historical setting and have the potential to adversely affect the quality of cultural resources. Cultural resource impacts would be expected to be greater than those associated with the Proposed Project.

Land Use

This route is located in proximity to the privately owned Flabob Airport, potentially causing impacts to this facility. This potentially significant impact eliminates this alternative from consideration, since there are other alternatives, including the Proposed Project, that would eliminate this impact.

Routes that were considered within this corridor would traverse as many as six city or county parks (Carlson, Mount Rubidoux, Tequesquite, Martha McLean-Anza Narrows, Rancho Jurupa Regional, and Fairmont) in addition to other park district land (Proposition 13). This would result in a greater impact to lands dedicated for recreational purposes. Construction and operational impacts to the recreational experience within the parks would likely be greater than the Proposed Project. Some of these lands are also LWCF grant sites, a federal program for open space that would require a conversion process from recreational to industrial lands. Potential routes within this corridor would also adversely impact the Jurupa Hills Country Club and Fairmont Golf Course. Land use impacts would be expected to be relatively similar to or slightly greater than those associated with the Proposed Project.

Water Resources

The route alternatives considered within the corridor would require at least one crossing of the Santa Ana River, with some alternatives requiring placement of transmission line structures in the river floodway (an area of the floodplain that should be kept free of obstructions to allow floodwaters to move downstream). There are regulatory concerns with permitting from USACE and technical feasibility issues due to the risk of installing a major transmission line in a floodplain and floodway. Flowing water can undermine structure footings and riverbed soils can be unstable, presenting challenges to engineering. USACE's operation and maintenance of flood control facilities, such as levees, could also be compromised. During a flood event, floodwaters would have the potential to undermine the transmission line structures to the point where sections of the transmission line could collapse and the structures could impede floodwaters, causing localized flooding and potentially damaging bridges and levees.

The Riverside County Flood Control and Water Conservation District has advised against an eastern route due to the proximity of such infrastructure to flood control/protection structures and the potential to create a public safety issue. Any alterations to current flood control infrastructure are ill-advised and would require extensive hydrologic study for final engineering. Construction of Proposed Project facilities within district ROWs would require obtaining encroachment permits. Because flood control structures are owned by USACE, they would have to review and approve encroachment permits (Forest Vanderbilt, USACE, personal communication with SCE 2009). Water resource impacts would be expected to be greater than those associated with the Proposed Project.

Feasibility

Construction of the proposed transmission line would require placement of the transmission line structures within existing flood control ROW and in close proximity to existing flood control levees constructed along both sides of the Santa Ana River. Overhead transmission lines would create unavoidable ~~and severe~~ constructability issues for SCE (e.g., roads and access, foundations and structures in or near operating levees) and operational impacts to the USACE, and the Riverside County Flood Control and Water Conservation District (e.g., potential

conflicts between levee operations and SCE power reliability requirements, levee structural integrity). Additionally, SCE would experience potential operational impacts from the placement of structures within the floodplain of the Santa Ana River, south of Highway 60 where the river is not channelized. During high rain and flood events, access to transmission line structures could be lost. These reasons make this route infeasible.

Recommendation for Further Analysis

ELIMINATION. Although this alternative would meet the basic Proposed Project objectives, constructing a transmission line within the Santa Ana River East Corridor ~~is considered not feasible~~ has been eliminated because of significant impacts to controlled flight zones for the Flabob Airport, because of the crossing of LWCF lands, and would create other significant adverse impacts to land use, aesthetics, protected species, riparian habitat, wetlands, and the Santa Ana River floodway, such as:

- Suitable habitat for special-status species would be impacted by a transmission line in this corridor.
- The line would extend across special management areas known as Criteria Cells, which are important areas to conserve for special-status species. A take permit under the federal ESA would likely be required.
- This alternative would ~~also~~ exit out of the Riverside County MSHCP territory, which would require additional biological studies and impede the ability to meet the Proposed Project's timing objectives through the requirement of an HCP for compliance with the ESA.
- Construction of a transmission line in the corridor, especially ~~the closer a line would be to flood control structures and/or the river itself,~~ would present constructability and operational conflicts for flood control and management. If the line and structures were to collapse into the river during a flood event, a public safety hazard would be created. ~~For these reasons, this alternative is eliminated from further analysis.~~
- SCE completed a preliminary geological and geo-technical evaluation (SCE 2010) comparing this route to the Proposed Project and the Van Buren Offset Alternative. Based on SCE's evaluation, the Eastern Route is inferior to the other two routes because of structural issues related to routing in the soils of the river corridor and proximity to the levee system.

For these reasons, this alternative is eliminated from further analysis.

230 kV Substation Sites

Under the Proposed Project, Wilderness Substation would be owned and operated by RPU, and would have the 230/69 kV transformers within its fenced boundary. The immediately adjacent Wildlife Substation would be owned and operated by SCE, and would contain the switching equipment needed to protect the operation of the transmission line and simultaneously deliver bulk power into Wilderness Substation (refer to Chapter 2 for a complete description of the Proposed Project). Alternatives to this scenario are presented below and in Figure 6.4-2.

Expand Vista Substation

Vista Substation was planned and designed for four 230/69 kV transformer banks due to considerations given to safety, reliability, operational flexibility, short circuit duty and load serving capability. Currently, there are four 230/69 kV transformer banks at Vista Substation (the maximum build-out for this substation) with two banks dedicated to serve the City of Riverside. ~~The two banks dedicated to serve the City of Riverside, which are already at their maximum capacity. Any additional capacity from the additional with no expansion possible. The remaining two banks are reserved for SCE to serve the growing load.~~ SCE's own distribution needs in the area. Adding an additional 230/69 kV A new transformer bank at Vista Substation in this location is not possible under the substation's current electrical equipment and configuration. There is not enough space to expand the substation, as it is situated at the top of a knoll and surrounded by residences, Interstate 215, and the Santa Ana River. Additional property would compromise one or more of the original planning and design considerations have to be acquired, which would result in significant land use impacts to existing residences and land uses. Therefore, this alternative substation location was rejected as being infeasible because there is not enough electrical capacity at Vista Substation to serve both SCE's growing load and accommodate a new bulk electrical service to the City of Riverside without the addition of the new transformer. This makes this alternative infeasible. The Vista Substation site was also rejected because it would not provide RPU with a second point of interconnection to the transmission system, which would not meet the reliability ~~requirements~~ objectives of the Proposed Project. For these reasons, this alternative was eliminated from further consideration (refer to Figure 6.4-1).

Expand Mira Loma Substation

Mira Loma Substation was planned and designed for four 230/69 kV transformer banks. Currently, there are three 230/69 kV transformer banks at Mira Loma Substation. However, the physical space for the additional bank is reserved for SCE to serve the growing load service its own distribution service needs in the immediate SCE service area; therefore, the addition of a. Adding a new transformer for the Proposed Project would therefore be infeasible, considering the substation's configuration and capabilities. Further, the Proposed Project would also require six or more 69 kV subtransmission lines from the Mira Loma Substation to provide the same power transfer capability as the proposed 230 kV interconnection. Multiple subtransmission ~~These multiple 69 kV circuits would require more ROW and would result in greater significant environmental impact from a larger project footprint, greater ground disturbance, and higher cost. Therefore (i.e., wider ROW and many more lines) that could be avoided by eliminating this alternative. Because of the above reasons, this alternative substation location was rejected as being infeasible because there is not enough electrical capacity at Mira Loma Substation to serve both SCE's growing load and the City of Riverside (eliminated from further consideration given that feasible interconnection options exist (also see Figure 6.4-1).~~

Expand RERC Substation

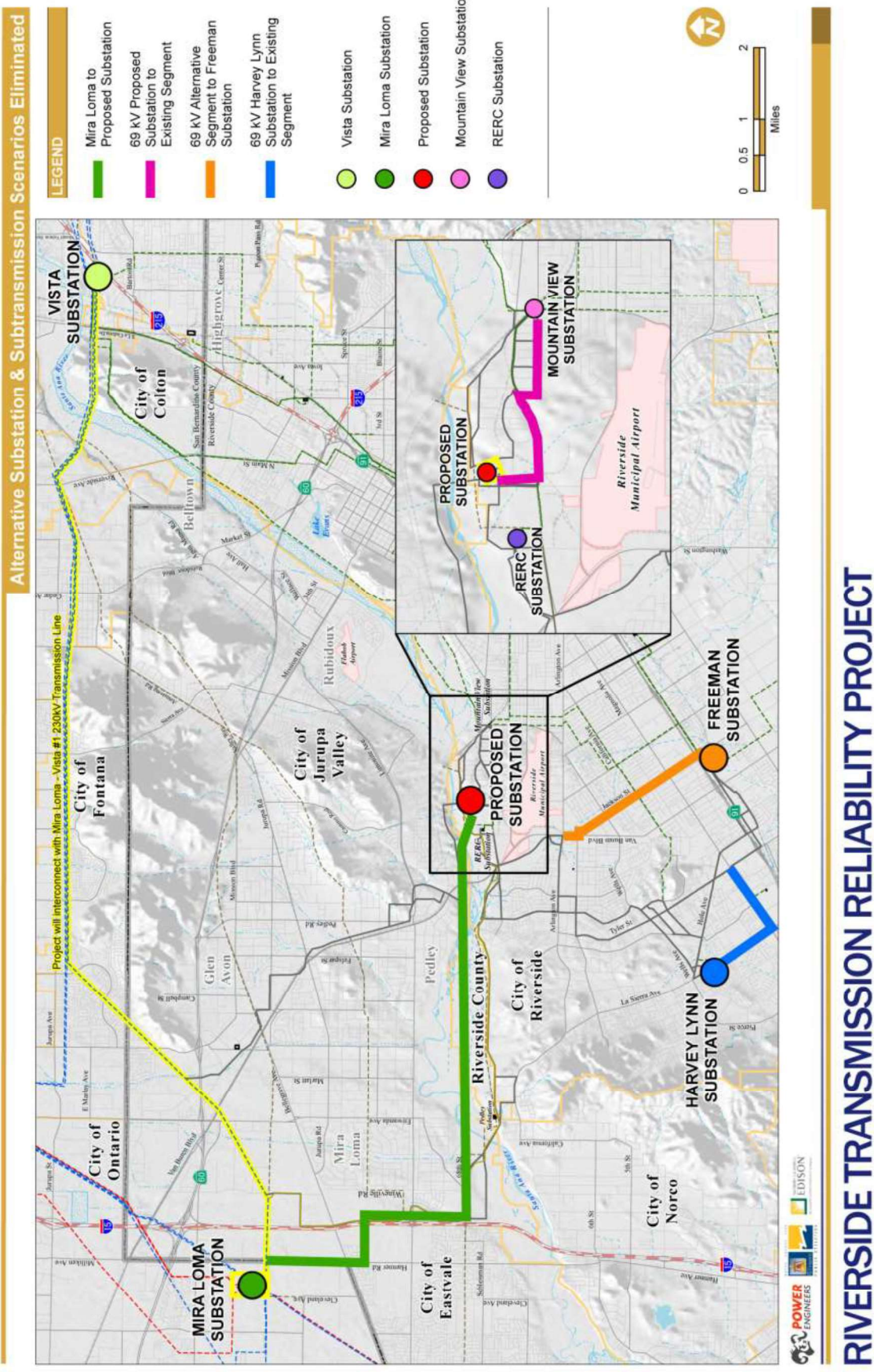
Expansion of the RERC Substation was eliminated as a feasible alternative because ~~the existing footprint~~ there is not sufficient enough physical space to accommodate the necessary required new electrical substation equipment. In addition, there is not enough space to expand the substation due to existing industrial and commercial land uses and the Santa Ana River adjacent to the facility. The site has a power plant, control buildings, and the existing and under-construction substation, and must accommodate two other generation units and ancillary facilities

~~at this site. For this reason, being added. Because this alternative is infeasible, it was eliminated from further consideration.~~

Expand Mountain View Substation

~~Expansion of the Mountain View Substation site is not possible because of the physical space limitations of the site that is currently surrounded on three sides by streets and on the fourth by the railroad corridor. For this reason this alternative is infeasible and was eliminated because the area required as an alternative for the new substation equipment and entrances for new lines is not sufficient (see Figure 6.4-1). For this reason, the Mountain View site was eliminated from detailed consideration as infeasible.~~

FIGURE 6.4-1. ALTERNATIVE SUBSTATION AND SUBTRANSMISSION SCENARIOS ELIMINATED (REVISED)



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69 kV Subtransmission Line Routes

As discussed in Section 6.2.2, several 69 kV subtransmission line routes were originally identified in order to meet the objectives for the Proposed Project by integrating the second source of bulk electric power (refer to Chapter 1 – Purpose and Need), and to provide sufficient subtransmission capacity.

Most of the 69 kV subtransmission line routes were eliminated from consideration for the Proposed Project. Those routes that were retained became a part of the Proposed Project and are shown on Figure 6.5-2 and described in detail within Chapter 2 and Chapter 3. The routes eliminated from consideration were eliminated due to infeasibility or the inability to reduce impacts from the “preferred routes.” A general discussion is included below for the elimination of these routes. See Figure 6.5-2.

Harvey Lynn Substation to Existing Segment

~~Routes along~~ Significant visual impacts from proximity to residences would be significant and result in the elimination of this alternative. Other reasonable alternatives are available where the extent of these impacts are reduced. A further explanation of these impacts is found below.

~~Both La Sierra and Magnolia Avenues were both considered and eliminated as infeasible because they would be immediately adjacent to La Sierra High School; proximity to schools was used as a siting and evaluation criteria due to the California Department of Education’s School Site Selection and Approval Guide for new schools. In addition, both streets (La Sierra and Magnolia Avenues) would be paralleled involved in this alternative, and they are designated Scenic Roadways as designated by the City. See Figure 6.4-1; the visual impacts would be significant and could be avoided through the use of another alternative route.~~

Alternate Segment to Freeman Substation

~~A route along Jackson Street was also considered and eliminated as infeasible because it, but significant visual impacts would be located adjacent to four schools; proximity to schools was used as a siting and evaluation criteria occur, resulting in the elimination of this alternative. Other reasonable alternatives are available where the extent of these impacts are reduced.~~ The route would be parallel to a City-designated Scenic Roadway (Van Buren Boulevard).

~~Further, the route was also considered as an underground alternative and was eliminated due to the factors described above (Scenic Roadway and schools) as well as the higher cost associated with underground construction versus other reasonable overhead transmission line alternatives. There would be no way to mitigate the proximity of the route to the schools visual impacts, and other viable alternative routes were available; thus, it was eliminated from detailed evaluation and consideration.~~

Proposed Substation to Existing Segment

A route was considered and eliminated that would exit Wilderness Substation to the south and be located within the Metropolitan Water District (MWD) water pipeline ROW to Jurupa Avenue. At Jurupa Avenue, the route would run east to Fremont Street, underground in the road ROW, then continue south along Fremont Street, and finally east along Mountain View Avenue to

Mountain View Substation. It would not reduce or avoid significant impacts, and in fact would result in a significant effect to existing infrastructure in this same area (see below).

This alternative was considered and eliminated because of potential engineering complications, such as electrical induction effects to the parallel water pipeline within the MWD ROW. A The pipeline is a type of metallic object that can, which within or in close proximity to the 69 kV subtransmission line corridor would develop a small an electric charge in proximity to high voltage transmission lines. An electrical current can flow when an object has that would produce an induced charge and a path current that flows through an object to ground is presented. The amount of induced current that can flow is important to evaluate because of the potential for must be studied to determine such effects as nuisance shocks to people and, the possibility of potential for other impacts health and safety considerations, such as fuel ignition. However, and possible corrosion effects to the pipeline itself (i.e., erosion of the pipeline wall) (EPRI 2005). Normally, these concerns can typically be mitigated through appropriate grounding of the pipeline schemes once the studies are done and negotiations completed with MWD, but such health and safety risks are normally avoided.

Other factors such as contributing to this alternative being eliminated from further consideration include the high cost involved with undergrounding the double-circuit 69 kV subtransmission line for the majority of the alternative, potential transportation-related significant construction impacts to traffic on Jurupa Avenue from the underground construction within the street ROW, and substantial significant construction issues along Mountain View Avenue, which would again consist of impacts during the underground installation of the subtransmission line within the street ROW in a dense residential location.

Other routes were eliminated due to the number of homes, schools, and day cares adjacent to the routes when compared to the selected routes. An attempt to utilize existing single-circuit subtransmission lines within the Proposed Project area—by converting them to double-circuit routes as a result of the Proposed Project—was also rationale for selecting routes, and thereby eliminating other routes from further consideration.

Upgrading the 69 kV Substations

Only four of the fourteen existing RPU substations would be upgraded with the Proposed Project. The substations that would require upgrading are:

- RERC
- Mountain View
- Harvey Lynn
- Freeman

The four substations require upgrades in order to be compatible with the new equipment installed at Wilderness Substation and to accommodate the additional 69 kV subtransmission lines that are required for the Proposed Project. The Purpose and Need (discussed in Chapter 1) describes the need to divide the system into two local systems and, as such, the western system would be served by the new Wilderness Substation, while the eastern system would continue to be served by Vista Substation. No reasonable alternatives to upgrading these four 69 kV substations were

considered feasible as the Purpose and Need for the Proposed Project would not be fulfilled, nor would the basic Proposed Project objectives.

Table 6.4-2 summarizes CEQA elimination criteria applied to determine whether or not each of the alternatives discussed above warranted elimination from detailed evaluation.

TABLE 6.4-2. PROJECT ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED CONSIDERATION

	Alternative Would Meet Project Objectives (i)	Alternative is Feasible (ii)	Alternative Would Help Avoid Significant Environmental Impacts (iii)
Other Voltages (Section 6.4.1)			
69 kV	Yes	No	No
115 kV	Yes	No	No
500 kV	Yes	No	No
Non Wire Alternatives (Section 6.4.2)			
New Generation	Yes*	No	No
Distributed Generation	No	No	No
Energy Conservation and Load Management	No	No	Yes
Alternative Technologies (Section 6.4.3)			
Underground High-Voltage Transmission	No	No	Yes
Underground 69 kV Lines	No	No	Yes
Direct Current Transmission	Yes	No	No
Alternative Conductors	Yes	No	No
Siting & Routing Alternatives (Section 6.4.4)			
230 kV Transmission Line Routes			
Limonite Route	Yes	Yes	No
Bain Street Route	Yes	Yes	No
Eastern Route(s)	Yes	No	No
230 kV Substation Sites			
Expand Vista Substation	No	No	No
Expand Mira Loma Substation	No	No	No
Expand RERC Substation	Yes	No	No
Expand Mountain View Substation	Yes	No	No
Other 69 kV Subtransmission Line Routes	Yes	Yes	No
Other 69 kV Substation Sites	No	No	No

(i) The alternative's ability to meet most of the basic Project objectives (CEQA Guidelines §15126.6(c)).

(ii) ~~The feasibility of alternative feasible~~ (CEQA Guidelines §15126.6(c)(2)).

(iii) The ability of the alternative to avoid significant environmental impact (CEQA Guidelines §15126.6(c)).

* RPU's 69 kV system improvements would still be required, but the interconnection to SCE would be eliminated in this alternative.

6.5 Alternatives Analyzed in Detail in this DEIR

The discussion within Section 6.4 details the analysis and consideration for alternatives that have been identified and considered for the RTRP. As discussed within this chapter and shown above on Table 6.4-1, many of the alternatives were eliminated from further consideration. In cases where specific routes were assessed for the comparison of alternative routes and selection of a preferred route, the impacts that would result from each alternative were evaluated. The impacts of each alternative were compared and the best alternative or route was chosen. These alternatives are described within this section and are shown on Figures 6.5-1 and 6.5-2. A summary of the alternatives impact analysis is provided in Table 6.5-1.

TABLE 6.5-1. SUMMARY OF COMPARISON OF ALTERNATIVES IMPACTS

Environmental Resource	Proposed Project (post-mitigation)	Alternative 1: No Project (as compared to Proposed Project)	Alternative 2: Van Buren Offset Alternative (as compared to Proposed Project)
Aesthetics	Significant	Similar	Increased
Agricultural and Forestry Resources*	Significant	Reduced	Reduced
Air Quality* and Greenhouse Gas Emissions	Significant <u>as to Air Quality</u>	Similar	Similar
Biological Resources	Less than Significant	Similar	Reduced
Cultural Resources	Less than Significant	Similar	Similar
Geology and Soils	Less than Significant	Similar	Similar
Hazards and Hazardous Materials	Less than Significant	Similar	Similar
Hydrology and Water Quality*	Less than Significant	Similar	Similar Increased
Land Use and Planning	Less than Significant	Similar	Similar
Mineral Resources	Less than Significant	Similar	Similar
Noise	Less than Significant	Similar	Similar
Population and Housing	Less than Significant	Similar	Increased
Public Services and Utilities	Less than Significant	Similar	Increased
Recreation	Less than Significant	Similar	Similar
Transportation and Traffic	Less than Significant	Similar	Similar

* cumulatively considerable impact

6.5.1 DESCRIPTION OF THE ALTERNATIVES

The reasonable and potentially feasible 230 kV transmission and 69 kV subtransmission line alternative routes shown on Figures 6.5-1 and 6.5-2.

Other Project Components Included in Each Alternative

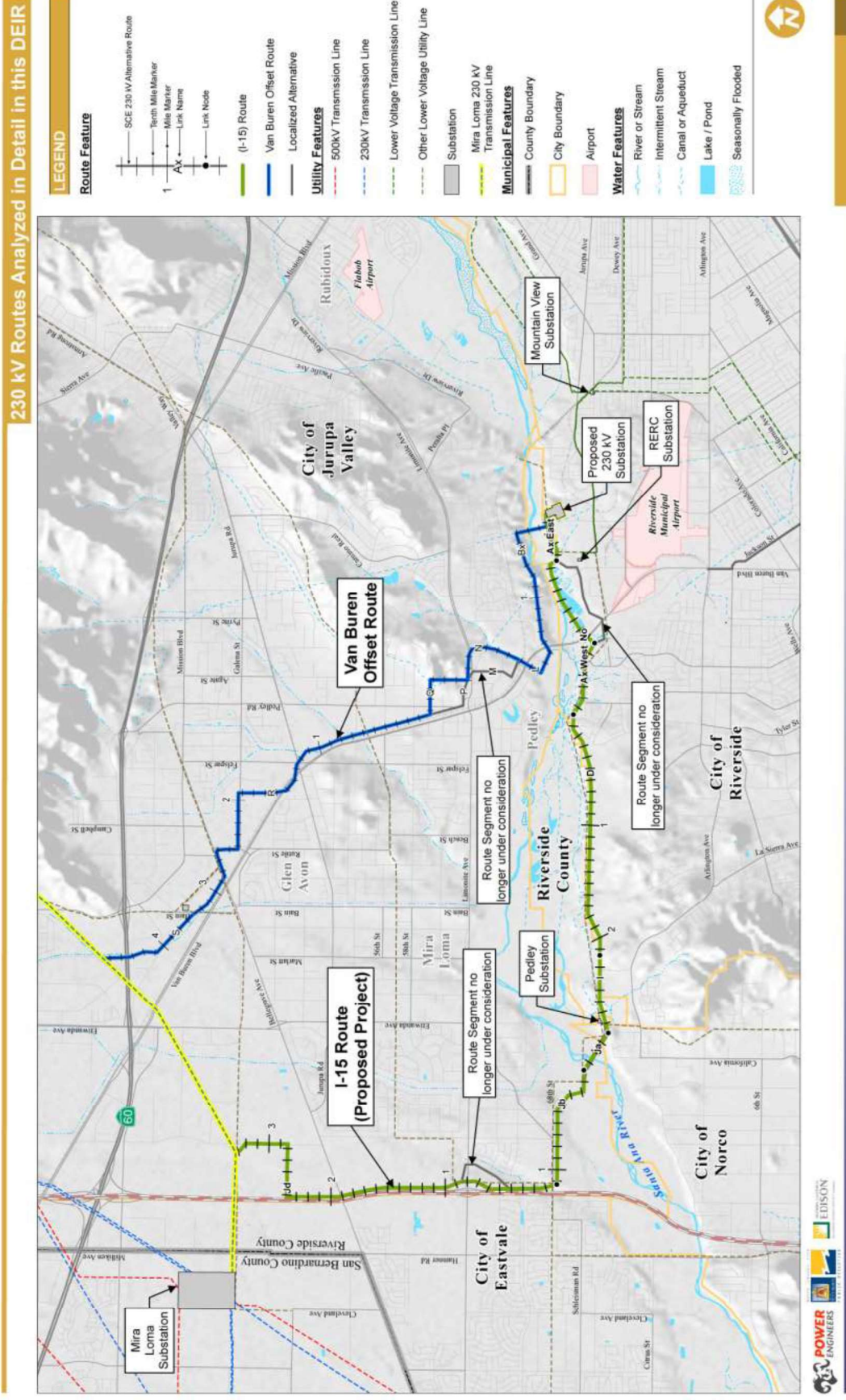
The difference between Proposed Project action alternatives includes the routes for the double-circuit 230 kV transmission line as described above (I-15 and Van Buren Offset). All other RTRP components that are a part of the Proposed Project would be the same for the Van Buren Offset Alternative. These other Proposed Project components are described in detail in Chapter 2 and would include: a new 230 kV substation (Wildlife Substation), a new 230/69 kV substation (Wilderness Substation), new 69 kV subtransmission lines, improvements to existing 69 kV substations, protective relay improvements, and telecommunication lines. As described within this chapter under Section 6.2, an extensive siting process was conducted for all transmission and subtransmission line routes. Detailed descriptions of the 69 kV subtransmission routes are included as part of the Proposed Project description within Chapter 2. Refer to Figure 6.5-2 for the location of the subtransmission line routes and “segment” descriptions.

TABLE 6.5-2. SUMMARY OF ALTERNATIVES' SUCCESS AT MEETING PROJECT OBJECTIVES

Project Objective	Alternative Meets Objective?	
	No Project Alternative	Van Buren Offset Alternative
Provide sufficient capacity to meet existing electric system demand and anticipated future load growth.	No. Alternative would not provide any capacity.	Yes.
Provide an additional point of delivery for bulk power into the RPU electrical system, thereby increasing overall reliability (see Figure 1.4-2 in Chapter 1).	No. Alternative would not provide an additional point of delivery.	Yes.
Split and upgrade the subtransmission electrical system as a function of prudent utility practice.	No. Alternative would not upgrade the subtransmission system.	Yes.
Meet Project need while minimizing environmental impacts.	No. Alternative would not meet the Project need and would in fact increase environmental impacts to public services as compared to the Proposed Project.	No. The Van Buren Offset Alternative would not result in a decrease in significant environmental impacts in comparison to the Proposed Project and, in fact, increases impacts to some environmental resource categories. This alternative would also displace two single family residences.
Meet Project need in a cost-effective manner.	No. Alternative would not meet the Project need.	Yes.
Meet capacity needs within a timely manner.	No. Alternative would not meet capacity needs.	Yes

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FIGURE 6.5-1. 230 kV ROUTES ANALYZED IN THIS DEIR (REVISED)

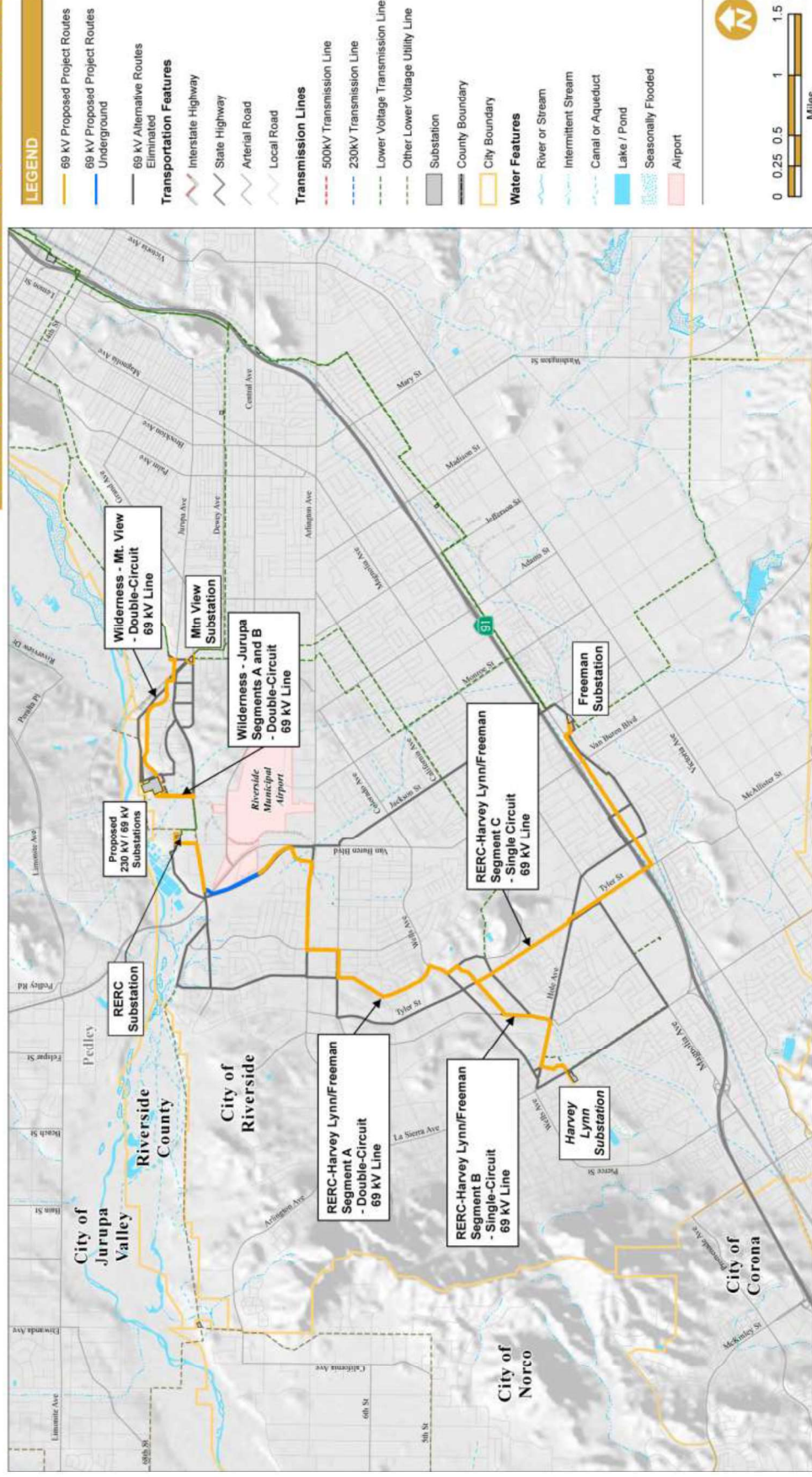


RIVERSIDE TRANSMISSION RELIABILITY PROJECT

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FIGURE 6.5-2. 69 KV SUBTRANSMISSION LINES ANALYZED IN THIS DEIR (REVISED)

69 KV Subtransmission Lines Analyzed in this DEIR



RIVERSIDE TRANSMISSION RELIABILITY PROJECT

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Alternative 1—No Project Alternative

The CEQA Guidelines (Section 15126.6(e)) require the impact analysis of a No Project Alternative. Under the No Project Alternative, the RTRP would not be constructed, existing conditions in the Proposed Project area would remain the same, and electrical power would continue to be delivered to the City of Riverside through a single interconnection point, which is at capacity. If this deficient condition would persist under the projected load growth scenario, long-term system reliability would be in jeopardy, increasing the potential for black-outs in the City.

For the purposes of this analysis, the No Project Alternative includes the following two assumptions: 1) the Proposed Project would not be implemented and the existing conditions in the Proposed Project area would not be changed and 2) new transmission and subtransmission lines as well as substations would not be constructed in or near the Proposed Project area to supply power to the City of Riverside by SCE.

The No Project Alternative may result in a reduction of environmental impacts in the short-term, but this alternative would not meet any of the Proposed Project objectives. RPU's electrical system would continue under its deficient condition, resulting in increased potential for system unreliability. Therefore, the No Project Alternative would not adequately meet the Proposed Project objectives as described in Chapter 1, and is determined to be infeasible.

In the absence of the Proposed Project, it is likely that RPU would opt to construct another similar transmission project in lieu of the RTRP to address the transmission capacity deficiencies of its current electrical system, and to prevent future interruptions in its service area. Potential transmission projects that would need to satisfy the objectives of the RTRP would be within the same geographic region and would probably consist of similar construction methods. Specific impacts from potential projects would depend on the location of the proposed facilities and ROWs; however, effects related to all environmental resources analyzed are likely to be similar compared to those imposed by the RTRP.

Impact Analysis

Aesthetics

Under this alternative, the Proposed Project would not be constructed, and there would be no impacts to aesthetics. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Agriculture and Forestry Resources

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this EIR would be constructed by RPU and SCE, and no Farmland would be impacted. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. If a new project required RPU and SCE to acquire new ROW, there would be a potential that the project could result in impacts to designated Farmland. Furthermore, acquisition of new ROW would have the potential to result in construction and operational impacts if new ROW would be located in areas

zoned for agricultural uses or if the ROW included properties under an existing Williamson Act contract. Also, if a new project required RPU and SCE to acquire new ROW in areas currently used as Farmland, there would be a potential that the project could result in the conversion of Farmland to non-agricultural use. However, impacts would be unlikely as the Proposed Project area is generally characterized as developed or open space land.

Air Quality and Greenhouse Gas Emissions

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Biological Resources

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Cultural Resources

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Geology and Soils

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Hazards and Hazardous Materials

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

If the RTRP or a similar project were not constructed, different impacts related to hazards and hazardous materials may result in the Proposed Project area from the construction and operation of other types of development, such as industrial or commercial projects.

Hydrology and Water Quality

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Land Use and Planning

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, SCE and/or RPU would be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Mineral Resources

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. The area where the Proposed Project would be constructed would be available for mineral exploration, provided that such activity is permissible within the development policies and zoning of the local jurisdictions.

However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Noise

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Population and Housing

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and

maintenance of such a project would likely be similar in significance level to the Proposed Project.

Public Services and Utilities

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. If the RTRP or a similar project were not constructed, disruptions in reliable electrical service could result in indirect impacts to public services and utilities. For example, traffic signals that depend on power to regulate the flow of traffic would be rendered inoperable during an electricity outage, and subsequent traffic could delay the response time of emergency response providers. Depending on the frequency, duration, and extent of these service interruptions, impacts associated with the No Project Alternative could be significant and cumulatively considerable. Other public services that could be impacted by disruptions to electrical service include hospitals, schools and universities, government services (courts, jails, etc.), and all types of businesses that serve the public.

However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Recreation

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. Any project that would satisfy the objectives of the Proposed Project would likely not result in impacts related to increased use of existing parks or recreational facilities.

However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Transportation and Traffic

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the Proposed Project evaluated in this DEIR would be constructed by SCE or RPU. However, RPU and SCE would likely be required to design a new transmission project in order to satisfy the objectives of the Proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the Proposed Project.

Relationship to Proposed Project Objectives

The No Project Alternative would not result in the construction of the Proposed Project and would, therefore, not meet any of the Proposed Project Objectives.

Alternative 2—Van Buren Offset Alternative

The Van Buren Offset Alternative has been retained for detailed analysis within this DEIR. The route is a potentially feasible alternative and would meet the Purpose and Need and most of the

Proposed Project objectives as discussed in Chapter 1. The alternative is described in detail in Section 6.2, and is a variation from an earlier Proposed Project alternative that was eventually deemed infeasible due to various constructability issues with the Union Pacific Railroad ROW. The impact analysis presented below includes assessment of only the 230 kV transmission line alternative route.

Impact Analysis

Aesthetics

As with the Proposed Project's 230 kV transmission line route, the Van Buren Offset Alternative would also have conditions that would have significant impact to visual resources and would degrade the existing visual character and quality of its surroundings.

a) Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. There are no designated scenic vistas, as defined by CEQA Statutes §150304(a) as “officially designated (by federal, state, or local government action),” in the vicinity of the Van Buren Offset Alternative area. Therefore, there would be no impact to scenic vistas from construction, operation, or maintenance of the Van Buren Offset Alternative. The Van Buren Offset Alternative is located throughout a developed urban area where existing electrical lines and facilities, diverse development, and mature landscape vegetation routinely block potential vistas. Thus, the Van Buren Offset Alternative would not contrast with the existing environment and would not cause adverse effects on scenic vistas.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no designated or eligible state scenic highways within the Van Buren Offset Alternative area. Therefore, the Van Buren Offset Alternative would not affect scenic resources within a state scenic highway. Additionally, the Van Buren Offset Alternative would not substantially damage existing scenic resources as it is located throughout a diversely developed urban context where electrical lines and facilities are not uncommon.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Significant Impact. Emanating from the Wildlife/Wilderness Substations, the Van Buren Offset Alternative heads north to immediately cross the Santa Ana River with a single span of approximately one-quarter mile (1,275 feet). The span would stretch between two 113-foot tall lattice steel tower structures on each side of the river. The southern side is characterized as industrial and the northern side is undeveloped open space within the bluffs of the Santa Ana River corridor, but crosses the river parallel to an existing MWD pipeline. The impact in crossing the river would inherently be considered substantial; however, because of the industrial development and landscape character on both sides of the river, as well as the existing infrastructure (MWD pipe crossing), there would be some reduced contrast in this immediate area.

The Van Buren Offset Alternative would also cross Van Buren Boulevard four times. One crossing would occur with a 119-foot lattice steel tower placed close to Van Buren Boulevard to accomplish its span of the road. Van Buren Boulevard is a City of Riverside designated Parkway

and Gateway into the City and is a visually sensitive resource in the area, as the Van Buren Boulevard bridge crosses over the Santa Ana River.

Continuing north into unincorporated Riverside County, the alternative route travels into hilly terrain and through residential areas of Jurupa. In this area the route also crosses another large thoroughfare (Limonite Avenue) with two more lattice steel tower structures adjacent on each side of Limonite Avenue. The route zigzags through residential areas where the structures would be accentuated by the hilly terrain and pronounce their visibility for the local neighborhood streets, residential properties, and recreationists in Jurupa Hills.

Turning north at Van Buren Boulevard, the route parallels Van Buren Boulevard on the east through some more sparsely populated areas. Greater impacts would occur in the area where Van Buren Boulevard intersects Jurupa Road. In this area there are residences with immediate foreground views of the route. The route crosses Jurupa Road once and then Van Buren Boulevard twice with three lattice steel towers within an area of approximately 2,000 feet. Accordingly, the Van Buren Offset Alternative would result in significant impacts of greater magnitude as compared to the Proposed Project.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Most of the construction activities associated with the Van Buren Offset Alternative would occur during daylight hours, minimizing the need for construction lighting. Routine construction, operation, and maintenance work would be performed during the day. However, there may be times during construction when temporary night time lighting would be necessary for security and to maintain a safe working environment. The temporary lighting would be directed toward the work areas requiring illumination and away from motorists and residences.

Agricultural and Forestry Resources

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The proposed Wildlife and Wilderness Substations are located on City of Riverside-owned land classified as Farmland of Statewide Importance. As discussed above, the site of both of the proposed substations is currently being leased by the Toro Company. The land has been under City ownership since the 1970s and has not been used for agricultural production during this time period. The site of both of the substations is surrounded by and located in an area that is classified by the Farmland Mapping and Monitoring Program (FMMP) as Urban and Built-up land. The site is also zoned by the City of Riverside as a Business and Manufacturing Park according to the City of Riverside Zoning Code. No active agricultural land would be crossed by the alternative; as such, no impacts are anticipated.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?

No Impact. The Van Buren Offset Alternative does not cross agricultural lands currently under a Williamson Act contract. As such, the Van Buren Offset Alternative would not adversely affect

land subject to Williamson Act contracts. Furthermore, this alternative does not include lands zoned for agricultural purposes. Therefore, the Van Buren Offset Alternative would not conflict with land currently zoned for agricultural uses.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. Forest lands are defined by Public Resources Code section 12220(g) as:

“land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.”

Timberland is defined by Public Resources Code section 4526 as:

“land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.”

Timberland zoned Timberland Production is defined by Government Code section 51104(g) as:

“an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h).”

The Van Buren Offset Alternative area does not contain land zoned as forest land, timberland, or timberland for timber production as defined above. Therefore, construction and operation of the Van Buren Offset Alternative would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed above, the Van Buren Offset Alternative is not located on land zoned as forest land, timberland, or timberland for timber production. As described under Biological Resources, forest land (riparian forest and open woodland) occurs where the Van Buren Offset Alternative crosses the Santa Ana River. Construction of the Van Buren Offset Alternative however, does not require the removal or disturbance of this forest land. Therefore, construction and operation of the Van Buren Offset Alternative would not result in the loss or conversion of forest land to non-forest use.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. See discussion under a) above. As discussed under b), the Van Buren Offset Alternative would not affect lands zoned for agriculture, or involve lands currently under Williamson Act contract. Therefore, the Van Buren Offset Alternative would not involve other changes to the existing environment which, due to its location or nature, could result in conversion of Farmland to non-agricultural use.

As discussed under d) above, construction of the Van Buren Offset Alternative does not require the removal or disturbance of forest land. Therefore, construction and operation of the Van Buren Offset Alternative would not result in the loss or conversion of forest land to non-forest use.

Air Quality and Greenhouse Gases

Air Quality

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The Air Quality Management Plan (AQMP) for the South Coast Air Basin (SCAB) sets forth a comprehensive program that will lead the SCAB into compliance with all federal and state air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections.

The Van Buren Offset Alternative would consist of the construction and operation of transmission lines, which are needed to serve the existing electricity needs of the City. Therefore, the Van Buren Offset Alternative is consistent with the City's General Plan and would not obstruct implementation of the AQMP. Impacts are considered less than significant.

b) Would the project violate any air quality standards or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. The Van Buren Offset Alternative is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which has developed thresholds of significance for both regional and localized air quality impacts, with which the Van Buren Offset Alternative must comply. Maximum short-term daily emissions are 10.70 pounds (lbs) for VOC, 98.45 lbs for NO_x, 41.03 lbs for CO, and 0.11 lbs for SO₂, which are below all applicable SCAQMD regional significance thresholds. Maximum short-term daily emissions for pole construction nearest to the residential receptors are 7.32 lbs for NO_x, 3.57 lbs for CO, 1.05 lbs for PM₁₀ and 0.48 lbs for PM_{2.5}, which are below the SCAQMD localized significant thresholds.

Peak daily construction emissions would not exceed the SCAQMD regional or localized thresholds of significance; therefore, the Van Buren Offset Alternative does not violate any air quality standards, and short-term emissions from construction are considered less than significant on a regional and localized level.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Significant Impact. The portion of the SCAB within which the Van Buren Offset Alternative is located is designated as a non-attainment area for ozone and PM₁₀ under state standards, and as a non-attainment area for ozone, PM₁₀, and PM_{2.5} under federal standards.

Section 21100(e) of CEQA states that “previously approved land use documents including, but not limited to, general plans, specific plans, and local coastal plans, may be used in cumulative impact analysis.” In addressing cumulative effects for air quality, the AQMP utilizes approved general plans and, therefore, is the most appropriate document to use to evaluate cumulative impacts of the Van Buren Offset Alternative. This is because the AQMP evaluated air quality emissions for the entire SCAB using a future development scenario based on population projections and set forth a comprehensive program that would lead the region, including the Van Buren Offset Alternative, into compliance with all federal and state air quality standards. The Van Buren Offset Alternative is in compliance with the AQMP and both short-term and long-term emissions are below all applicable SCAQMD established regional and localized thresholds of significance. However, for cumulative assessment purposes, the potential existence of nearby concurrent cumulative projects would add to these regional emission totals. The cumulative project list in Chapter 4 shows projects within one mile of the Proposed Project and alternatives. While not all of these projects would occur at the same time as the Van Buren Offset Alternative, it can be assumed that one or more other projects will be in construction or will start operations and cause emissions that are cumulatively significant with those of the Van Buren Offset Alternative’s construction. Therefore, the combined effect of construction emissions from the Van Buren Offset Alternative and other projects’ construction and/or operating emissions would be cumulatively significant at various times during construction.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Most of the proposed construction of the Van Buren Offset Alternative is within residential/commercial areas in Riverside County. The closest residences have been estimated to be less than 82 feet (25 meters) away, based on measurements using aerial photographs. Both construction and operational emissions from the Van Buren Offset Alternative have been shown to be less than the applicable SCAQMD thresholds of significance on the regional level.

The comparison of the peak daily construction emissions for each phase with the SCAQMD significance localized thresholds shows that the Van Buren Offset Alternative emissions are less than the applicable SCAQMD localized thresholds of significance for CO, NO_x, PM₁₀ and PM_{2.5}. Therefore, the Van Buren Offset Alternative’s air quality impact to sensitive receptors is considered less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. The Van Buren Offset Alternative does not propose land uses typically associated with emitting objectionable odors (i.e., wastewater treatment plants, chemical plants, composting operations, refineries, landfills, dairies). No odors are anticipated

during operation. Additionally, the Van Buren Offset Alternative would be required to comply with SCAQMD Rule 204, which prevents occurrences of public nuisance air quality discharges.

Potential odor sources associated with the Van Buren Offset Alternative include construction equipment exhaust during construction activities. It is estimated that each transmission line pole location would take one day to install before moving to the next location. These emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction. Odors associated with diesel exhaust would be minimized by requiring that idling of such equipment and vehicles be limited to no more than five minutes. Additionally, the Van Buren Offset Alternative would be required to comply with SCAQMD Rule 204, which prevents occurrences of public nuisance air quality discharges. Recognizing the short-term duration and quantity of emissions from the Van Buren Offset Alternative, it was determined that the Van Buren Offset Alternative would not expose substantial numbers of people to objectionable odors. Therefore, impacts from short-term construction odors are considered less than significant.

Greenhouse Gas Emissions

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. The Van Buren Offset Alternative is within the jurisdiction of the SCAQMD, which has developed interim guidance for determining significance of greenhouse gas (GHG) emissions on climate change. Maximum annual emissions of CO₂e are 3,213.37 metric tons from construction equipment and employee commute, and 7.11 metric tons for maintenance operations, which combined are below the applicable interim GHG significance threshold tier of 10,000 metric tons of CO₂e per year (refer to the Air Quality Technical Report located in Appendix B of this DEIR).

The comparison of the maximum annual GHG emissions for the Van Buren Offset Alternative (all phases combined) with the SCAQMD Interim GHG Significance Threshold shows that GHG emissions do not exceed the significance thresholds, and therefore the Van Buren Offset Alternative's impacts to climate change are less than significant.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The Van Buren Offset Alternative would not exceed the SCAQMD interim GHG significance threshold. The Van Buren Offset Alternative consists of the construction and operation of transmission lines, which are needed to serve the existing electricity needs of the City. Therefore, the Van Buren Offset Alternative is consistent with the City's General Plan and will not obstruct implementation of the AQMP. The Van Buren Offset Alternative will not conflict with the California Energy Commission's Strategic Transmission Investment Plan, Assembly Bill 32, or any other applicable plans, policies or regulations relating to GHGs. The Van Buren Offset Alternative's impacts to climate change are considered less than significant.

Biological Resources

Impacts associated with construction of the Van Buren Offset Alternative would be similar in type and magnitude to those associated with the 230 kV portion of the Proposed Project. Because the alternative 230 kV route crosses more fully developed areas, is not located in Delhi sands areas, and has less linear extent within the Santa Ana River Corridor, less habitat and fewer species would be affected.

a) Would the project have a substantial adverse effect, either directly or indirectly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact. The Van Buren Offset ROW supports primarily open ruderal and urban habitat. There is riparian habitat within the Santa Ana River channel and at several small ephemeral washes. The ruderal habitat could support western burrowing owl, a State species of concern. The riparian habitat within the Santa Ana River channel supports least Bell's vireo, a State and federal protected species, and could support other sensitive or protected migratory species. The vireo is known to nest within the river channel. The river channel could also support local special-status species identified in the MSHCP for the Riverside / Norco Planning Area Unit that do not have a State or federal status because they occur more commonly in other areas of their specific ranges. These species include, but are not limited to, bobcat, downy wood pecker, great blue heron, and Cooper's hawk.

Based on design and construction specifications for spanning the Santa Ana River, the Van Buren Offset Alternative is not expected to directly affect a federal or State endangered, threatened, or candidate wildlife species or local species of concern. Work would occur during daylight hours and the riparian habitat would be constructed by use of helicopter for the aerial span. The vegetation avoidance by this construction would be expected to prevent direct mortality in this habitat that has a greater potential to support sensitive species for this area. This alternative may result in indirect operation and maintenance impact at the riparian crossing because of the proximity to the road overcrossing. This would result in a two-level obstruction that could impede or alter wildlife flight along the channel. The evaluated alternative has the potential to indirectly affect sensitive species from noise during construction, increased human activity during construction, and possible impact from potential accidental events such as dust or attraction of predators resulting from construction activity. Additionally, western burrowing owl would be avoided and impacts minimized consistent with the requirements of the MSHCP for preconstruction surveys, direction to avoid work during the nesting season in potential area nest burrows, and design to slightly shift pole location to avoid burrow impact resulting in mitigation replacement. The Van Buren Offset Alternative is not expected to significantly affect a sensitive species that would result in the extinction of the species or necessitate the need for federal or State protection or change in protected status.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact. Based on habitats coinciding with proposed ROWs, the Van Buren Offset Alternative has potential to cause both temporary and permanent impacts to non-native grasslands, disturbed ground, riparian habitat, disturbed alluvial fan scrub, riparian scrub,

Riversidian sage scrub, and southern cottonwood willow riparian. Ground-disturbing activity would include: structure installation, tower pad preparation and construction, anchor and guard installation, grading of existing and new access and spur roads, transportation, and pulling and tensioning site clearing. The alternative would traverse mostly non-native, ruderal and developed areas. Careful structure spotting and access layout in combination with integrated Environmental Protection Elements (EPEs) would reduce impact levels without additional mitigation.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. No wetlands were identified within this alternative ROW.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. The Van Buren Offset Alternative crosses the Santa Ana River, an important wildlife movement corridor. Transmission structures would be sited outside the riparian corridor. Primary movement concerns with 230 kV transmission lines are avian collisions. The lines would be installed following Avian Power Line Interaction Committee guidelines for avian safety.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than Significant Impact. The Van Buren Offset Alternative would be developed in strict compliance with the MSHCP and all local policies.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant Impact. The Van Buren Offset Alternative would be developed in strict compliance with the MSHCP. The City of Riverside, as a permittee to the MSHCP, and the Regional Conservation Authority would ensure compliance.

Cultural Resources

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?

Less than Significant Impact: The historic “O” Line transmission line crosses Van Buren Boulevard just north of the intersection of Pedley Road and Van Buren Blvd. Although only the original historical ROW for the historic “O” Line Transmission Line in Riverside County remains, the site is eligible to the California Register of Historic Resources (CRHR). However, there are no physical attributes or features remaining on the site. Therefore, it can be reasonably suggested that this site is not considered a unique archaeological resource under the criteria set forth by CEQA because it has no contributing elements beyond the ROW. As a result, it can be reasonably assumed that impacts that may occur will not affect any physical features and therefore would not impact the elements of this line that make it a unique archaeological

resource. Any physical features that remain on the line are located in the San Bernardino County portion of the site. However, because this site is eligible, the CEQA preferred mitigation measure to avoid the site by line design would be implemented through EPE CUL-02.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?

Less than Significant Impact: Two sites are ineligible for listing to the National Register of Historic Places (NRHP). As they have been found to be not eligible for the NRHP and thus assumed also for the CRHR, there would be no impacts to these sites.

The remaining three sites are unevaluated. Because the eligibility of these sites is unevaluated, the risk of discovering potentially eligible cultural resources during construction of the line is possible. Using CEQA guidelines, it may be necessary to evaluate the properties for CRHR eligibility in order to determine specific impacts or whether any of these sites can be defined as unique archaeological resources. There is potential for direct or indirect impacts to these sites, but EPEs would be implemented in order to reduce damage, destruction, or alteration. EPEs would be implemented to reduce any potential impacts to a less-than-significant level.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

No Impact: There are no known unique paleontological resources or sites or unique geological features located in the Van Buren Offset Alternative area.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

No Impact: No buried human remains were previously recorded or discovered during recent surveys for this alternative and, as such, no impacts to this type of resource are anticipated; however, should human skeletal remains be discovered at any time during implementation of the Van Buren Offset Alternative, construction in the vicinity will halt and the Coroner will be contacted immediately (California Public Resources Code 7050.5). If the Coroner determines that the remains do not require an assessment of cause of death and are probably Native American, then the NAHC will be contacted to identify the most likely descendants. Other steps shall be implemented according to the requirements of California Public Resources Code 5097.98.

Geology and Soils

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
2. Strong seismic ground shaking?
3. Seismic-related ground failure, including liquefaction?
4. Landslides?

Less Than Significant Impact. Because the Van Buren Offset Alternative area is within an area considered to be geologically active, the Van Buren Offset Alternative would be exposed to some risk from geologic hazards, such as ground shaking and ground failure due to earthquakes. The areas that are most susceptible to liquefaction are along the active Santa Ana River channel. Shallow groundwater conditions along with areas of moderate to high liquefaction potential are present within the study area. With the standard engineering design the potential for impacts associated with this consideration would be less than significant, as the alternative would be designed to withstand geologic hazards that could potentially affect the alternative by potentially exposing people or nearby structures to adverse effects from a structure falling over. In addition, the proposed ROW, which is required to be free from permanent structures, would add protection from immediately adjacent structures or buildings that might potentially be inhabited.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The Van Buren Offset Alternative would not result in substantial soil erosion or the loss of topsoil. The estimated ground to be disturbed during construction of the transmission line is 77.8 acres. Of this, approximately 56.2 acres of ground would be restored, resulting in approximately 21.5 acres of permanent ground disturbance associated with pole/structure placement and access road construction. Ground disturbing activities would be mitigated through the use of Best Management Practices (BMPs) and a Storm Water Pollution Prevention Plan (SWPPP) that would limit soil erosion and the loss of topsoil during construction of the alternative.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or-off site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. Because the Van Buren Offset Alternative area is within an area considered to be geologically active, the Van Buren Offset Alternative would be located within a geologic unit that would be considered unstable. However, the alternative would not cause any areas that are not currently stable to become unstable. This impact is less than significant, as the alternative would be constructed using standard engineering design, which would eliminate the potential for the project to cause landslide, lateral spreading, subsidence, liquefaction or collapse of the geology or soils.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact. Because soils in the Van Buren Offset Alternative area are predominantly sandy and possess no expansive soils, no substantial risks to life of property would occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Van Buren Offset Alternative does not require septic tanks or alternative waste water disposal systems.

Hazards and Hazardous Materials

The Van Buren Offset Alternative would traverse a geographic setting with a higher concentration of industrial, commercial, and suburban land uses, and lower concentration of agricultural and open space uses, than the proposed 230 kV transmission line route. Construction methods and materials utilized for this alternative would be similar to those utilized for the Proposed Project. Operation and maintenance requirements for this alternative would also be similar.

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact. Implementation of the Van Buren Offset Alternative would involve limited transport, use and disposal of hazardous materials. Vehicles and equipment used during the temporary construction period and during periodic maintenance of this alternative could accidentally discharge minor quantities of vehicle fuels, solvents, oils, and lubricating fluids into the surrounding environment. However, with implementation of EPEs HAZ-01 and HAZ-03 as part of the project, the potential for an accidental release of these substances into surrounding soil, water or groundwater during construction or maintenance operations would be minimal; adverse effects related to environmental or human exposure to such materials would be less than significant.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact with Mitigation Incorporation. It is not anticipated that implementation of this alternative would create a significant hazard to the public due to reasonably foreseeable upset or accidental release of hazardous materials into the environment. Implementation of this alternative would include the limited transport, use, or disposal of both liquid and solid wastes. Potential risks resulting from the presence of these substances in the Van Buren Offset Alternative area are addressed under section a) above.

As part of EPE HAZ-01, SCE would provide a materials safety data sheet (MSDS) listing hazardous materials that would be present on site, their method of transport, and their intended use. The MSDS would record potentially harmful materials for safety purposes and would be distributed to construction crews and on-site personnel to inform them of their presence.

The presence of hazardous materials in an urban environment such as the City of Riverside is typically higher. Therefore, there is still a chance that unidentified hazardous materials could be encountered or unearthed during construction of the Van Buren Offset Alternative, potentially releasing them into the environment. Data obtained from the Track Info Services FirstSearch Report indicates that hazardous materials were identified in proximity to the Van Buren Offset Alternative area. Contaminates related to these sites or the undocumented releases of hazardous materials from other nearby sites (e.g., petroleum hydrocarbons from leaking underground storage tanks) could have migrated through the groundwater table to the Van Buren Offset Alternative area, and could be unearthed during excavation activities, exposing workers, the public, and/or the environment to potentially harmful substances.

Prior to construction, a Phase I Environmental Site Assessment would be performed to identify potential contamination issues on the route selected by the Lead Agency. During Project construction, workers would observe the site for obvious contamination indicators (e.g., an unnatural sheen, strong odor, or abnormal stains to soil or groundwater). If contamination indicators are observed, the construction contractor would document the exact location(s) of suspected contamination, notify the environmental monitor, and issue a temporary stop work until potentially contaminated material(s) are properly characterized and addressed in accordance with EPE HAZ-02, the Project Soil Management Plan. In the event that contamination is encountered, implementation of mitigation measures HAZ-01 and HAZ-02 is also recommended to ensure proper characterization of any encountered hazardous materials, as well as proper interpretation, documentation, and reporting of laboratory data results by qualified individuals. Once contaminated soils have been adequately removed and characterized, and any required remediation work has been completed, construction work would resume at the site.

Implementation of EPE HAZ-02 and mitigation measures HAZ-01 and HAZ-02 would minimize potential hazards associated with human and/or environmental exposure to hazardous substances to less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact. The Van Buren Elementary School, located at 9501 Jurupa Road, would be located within one quarter-mile of the Van Buren Offset Alternative in unincorporated Riverside County, however, construction activities would involve only limited transport and handling of small quantities of hazardous materials near this area. SCE would implement EPE HAZ-01, which would ensure that impacts associated with the unintentional release of hazards in proximity to this school would be less than significant by implementing emergency release response procedures, which would detail responses to the release of hazardous materials.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact with Mitigation Incorporation. The 230 kV transmission line component for the Van Buren Offset Alternative is not located on a site listed pursuant to Government Code Section 65962.5 (TIS Reports, 2008). However, a review of the Department of Toxic Substances (DTSC) Envirostor database revealed the presence of one Superfund Site (Stringfellow Acid Pits) in the vicinity of the Van Buren Offset Alternative area. The site, generally located in the Pyrite Canyon area of Riverside County, was previously utilized for hazardous waste disposal between 1956 and 1972. Liquid wastes have since been removed from the site and topped with soil by the Santa Ana Regional Water Quality Control Board (RWQCB). The United States Environmental Protection Agency (EPA) and DTSC have also contained and remediated contaminated groundwater migrating from the site through the use of monitoring wells, extraction wells, and several treatment plants. In 2001, perchlorate was detected in groundwater south of State Route 60 extending down to Limonite Avenue. A Draft Feasibility Study to consider remedial alternatives to clean up perchlorate in Zone 4 groundwater is being planned (DTSC Factsheet, 2010).

In addition, tubular steel poles for the 69 kV transmission line component of the RTRP would be located on the northern boundary of a Site (the Riverside Agricultural Park) listed pursuant to Government Code Section 65962.5. As described in Chapter 3 (Hazards and Hazardous Materials), this Site underwent the first phase of implementation of a DTSC-approved Revised Response Plan (RsP), which included the excavation, removal, and proper disposal of Polychlorinated biphenyl (PCB)-contaminated soils. The second and final phase of Site remediation is scheduled to occur in 2011 and would entail the removal of soils containing dioxins and furans.

EPE HAZ-02 (Soil Management Plan) would be included as part of the Van Buren Offset Alternative design, and mitigation measures HAZ-01 and HAZ-02 would be implemented to ensure proper characterization of any encountered hazardous materials, as well as proper interpretation, documentation, and reporting of laboratory data results by qualified individuals, in the event that hazardous materials are encountered. Implementation of EPE HAZ-02 and mitigation measures HAZ-01 and HAZ-02 would ensure that no associated significant hazard to the public or environment from exposure to hazardous materials would result.

Implementation of EPE HAZ-02 would ensure that impacts associated with the release of previously unidentified hazardous substances would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Less than Significant Impact. At its nearest point, the Van Buren Offset Alternative route lies approximately 2.25 miles southwest of Flabob Airport and would not traverse the Airport Influence Area for Flabob Airport.

Similar to the Proposed Project, the Van Buren Offset Alternative would occur within two miles of the Riverside Municipal Airport and would be located within the Airport Influence Area for the Riverside Municipal Airport. SCE's 230 kV transmission line components of Van Buren Offset Alternative would include the construction of Tubular Steel Poles (TSPs) and Lattice Steel Towers (LSTs) ranging from 110-175 feet in height. According to the Riverside Municipal Airport Compatibility Map, these structures would fall within the following Airport Compatibility Zones: Zone D (Primary Traffic Patterns and Runway Buffer Area), and Zone E (Other Airport Environs) (see Table 3.2.7-3). However, no local discretionary permits or local plan consistency evaluations by Riverside County Airport Land Use Commission (ALUC) or the City of Riverside are required for SCE's proposed 230 kV transmission line (CPUC G.O. 131-D, Section XIV.B). While local review is not required for SCE facilities, as with the Proposed Project, prior to final design of the Van Buren Offset Alternative, and as far in advance of construction as possible, SCE will submit a Notice of Proposed Construction or Alteration (Form 7460-1) to the FAA in accordance with applicable regulations and initiate consultation with the FAA to determine the extent of any aeronautical hazards and potential recommendations due to the proximity of SCE facilities to public airports or public use airports. Following the completion of consultation, SCE will review any recommendations of the FAA, and will submit documentation of this consultation to RPU.

If necessary, RPU would electronically submit a Notice of Proposed Construction or Alteration (Form 7460-1) for FAA review of the 69 kV subtransmission line components of the Van Buren Offset Alternative. The FAA Form 7460-1 filing would be conducted in accordance with FAA procedures and as far in advance of construction as possible.

If this alternative is selected, the Riverside County ALUC would need to review final plans for the Van Buren Offset Alternative to ensure compatibility with existing, as well as future, airport operations. Applicable 69 kV subtransmission line components requiring review will be submitted by RPU to the Riverside County Airport Land Use Compatibility Plan (RCALUC). Project adherence to the determinations of the FAA and approval by the Riverside County ALUC would ensure that potential conflicts with the RCALUC and potential for exposure of people to hazards from airport operations would be less than significant.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. No known private airstrips were identified within two miles of the Van Buren Offset Alternative area; therefore, no project-related safety hazards would result for residents living or working within the Van Buren Offset Alternative vicinity.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. Construction of the Van Buren Offset Alternative would require the installation of new transmission lines within, across, and adjacent to existing road ROWs (e.g., State Route 60) that may be temporarily or partially closed during the transport of oversized equipment, stringing of the conducting wires, and installation of overhead or underground fiber optic telecommunication lines. These roadways may be used by emergency vehicles for passage or by people during an emergency evacuation. To avoid interference with emergency response and evacuation pathways, SCE would implement EPE TRANS-03, which includes the preparation and use of a project-specific Traffic Management Plan (TMP) (see Chapter 3, Section 3.2.15, Traffic and Transportation); associated impacts would be less than significant.

h) Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact with Mitigation Incorporation. The amount of undeveloped land or open space traversed by the Van Buren Offset Alternative would be less than that crossed by the proposed 230 kV transmission line route. However, the southern tip of this route traverses vegetation along the Santa Ana River corridor that may pose conditions conducive to wildfires. Similar to the Proposed Project, wildfire could result from construction of the new line if brush is accidentally ignited by idling construction vehicles or equipment, or comes into contact with a live-phase conductor. SCE would implement EPE NOI-02 (see Chapter 3, Section 3.2.11, Noise), which requires that construction crews avoid excessive idling of vehicles and power equipment. The likelihood of fire incidences would be diminished even further by implementing MM HAZ-01; related impacts would be less than significant.

MM HAZ-01: Fire Prevention and Management Plan. *A fire prevention and management plan would be developed and applicable fire laws and regulations would be observed during the construction period. All construction personnel would be advised of their responsibilities under the applicable fire laws and regulations.*

Hydrology and Water Quality

Although implementation of EPEs and other measures would minimize individual potential impacts to levels that are less than significant, collectively impacts from the Van Buren Offset Alternative would be slightly greater than those of the Proposed Project due to increased slope of work areas along the Santa Ana River and increased construction within 100-year floodplains.

a) Would the project violate any water quality standards or waste discharge requirements, create new sources of polluted runoff, or otherwise degrade water quality?

Less than Significant Impact. Indirect, short-term impacts to water quality could result from stormwater runoff during construction of the Van Buren Offset Alternative. Overhead transmission line construction requires ground-disturbing activities, including clearing and grading for structure installation and work areas, and access road construction. Disturbed soils accelerate erosion and increase sediment in stormwater runoff to receiving waters (*i.e.*, Santa Ana River and its tributaries), causing increased turbidity and channel sedimentation.

The Santa Ana RWQCB has identified construction-related erosion and sedimentation as a significant non-point source pollution problem in the Watershed Management Area (WMA); however, the Santa Ana River and its tributaries within the Van Buren Offset Alternative area are not 303(d) listed as sediment-impaired water bodies. Additional short-term discharges of sediment would not significantly contribute to the exceedance of the water quality standard for turbidity, which the RWQCB defines as “changes in turbidity which adversely affect beneficial uses.”

In addition to compliance with federal and State regulations, implementation of EPE HYDRO-4 would minimize impacts from ground-disturbing activities to less-than-significant levels. No mitigation is required.

Indirect, short-term impacts to water quality could result from accidental spills and leaks of petroleum, oil and lubricant (POL) from equipment and vehicles used during construction of the Van Buren Offset Alternative. Concrete spills can also occur during concrete preparation and pouring of structure foundations. Such spills could run off-site into receiving waters and degrade water quality. With implementation of Non-stormwater Management, Material Management, and Materials Pollution Control BMPs, as specified in the required SWPPP, impacts would be less than significant. No mitigation is required.

Indirect, short-term impacts to water quality could result from accidental spills and leaks of POL from equipment and vehicles used during operation and maintenance of the Van Buren Offset Alternative. Such spills could run off-site into receiving waters and degrade water quality. Operation and maintenance of the transmission line and associated access roads would involve periodic inspections, and maintenance visits would be conducted on an as-needed basis. Best Available Control Measures (BACMs), such as oil spill kits, would be utilized by SCE

maintenance crews, and operational impacts to water quality would be less than significant. No mitigation is required.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less than Significant Impact. Construction of the Van Buren Offset Alternative would potentially encounter groundwater along the Santa Ana River corridor. Boring for installation of the Van Buren Offset Alternative structures would not occur to depths such that they would be likely to deplete the local groundwater table. An average 120-foot TSP would have a foundation of approximately 40 feet deep and approximately six feet in diameter, requiring excavation of approximately 1,130 cubic feet of soil. Should the bore hole fill completely with water and require dewatering, the volume of groundwater removed for foundation construction would be approximately 0.03 acre-feet (af). Groundwater storage capacity for the groundwater basins in the area ranges from 207,000 af to 5,325,000 af, and would not be significantly reduced by installation of transmission structures. Implementation of EPE HYDRO-03 would ensure that groundwater pumped from structure foundation excavations would be allowed to percolate into the soil within the work area. Correspondingly, installation of the Van Buren Offset Alternative structures would not, individually or collectively, create impervious surfaces great enough to interfere with groundwater recharge resulting in a net deficit in aquifer volume. Installation of transmission structures would not interfere with nearby wells. Municipal and private well locations were obtained from Western Municipal Water District; no wells are located within the Van Buren Offset Alternative ROW or within work areas, and the relatively small volume of water that would potentially be pumped from structure foundations would be too small to create a drawdown that would interfere with the activity of local municipal or private wells. Impacts to groundwater and wells would be less than significant, and no mitigation would be required.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less than Significant Impact. Potential impacts from erosion and sedimentation would be greater than for the Proposed Project due to construction along the northern bank of the Santa Ana River, where slopes range from 1 to 23 percent. Erosion increases with slope, and impacts resulting from erosion would likewise increase.

Direct, temporary impacts to existing drainage patterns may result from construction of the temporary access roads used to access the transmission line ROW during construction. Minor drainage diversions may result from grading; however, stream and river courses would not be altered. Temporary roads would be removed when construction is completed, and the ground would be restored to its original contours.

Permanent access roads would be constructed as all-weather/all-season. With use of pervious materials for access road construction, the volume and rate of stormwater runoff is not expected to increase substantially from pre-construction levels in a manner that would result in off-site erosion and flooding.

Any work within the Santa Ana River watershed under the jurisdiction of the Riverside County Flood Control and Water Conservation District would require an encroachment permit. The required SWPPP would also address stormwater management.

Implementation of EPEs HYDRO-04 and HYDRO-05 and stormwater management BMPs specified in the required SWPPP would minimize erosion or siltation on- or off-site. Impacts would be less than significant, and no mitigation is required.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less than Significant Impact. Facilities constructed under the Van Buren Offset Alternative would be sited to avoid surface waters, including streams and rivers. Permanent structures (TSP and LST bases) and access roads would create increased impervious surface and runoff on a very small percentage of the area. Furthermore, the Van Buren Offset Alternative area is extensively developed. Implementation of EPEs HYDRO-04 and HYDRO-05 and stormwater management BMPs specified in the required SWPPP would maintain natural drainage patterns and control stormwater drainage off-site, thus minimizing the potential for flooding on- or off-site. The Van Buren Offset Alternative would not result in new impervious areas that would result in stormwater discharges that would exceed the capacity of existing or planned stormwater drainage systems. Impacts related to temporary alteration of drainage patterns would be less than significant. No mitigation is required.

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. Indirect, short-term impacts to water quality could result from stormwater runoff during construction of the 230 kV transmission line. Overhead transmission line construction requires ground-disturbing activities, including clearing and grading for structure installation and work areas, and access road construction. Disturbed soils accelerate erosion and increase sediment in stormwater runoff to receiving waters (i.e., Santa Ana River and its tributaries), causing increased turbidity and channel sedimentation.

The Santa Ana RWQCB has identified construction-related erosion and sedimentation as a significant non-point source pollution problem in the WMA; however, the Santa Ana River and its tributaries within the Van Buren Offset Alternative area are not 303(d) listed as sediment-impaired water bodies. Additional short-term discharges of sediment would not significantly contribute to the exceedance of the water quality standard for sediment or turbidity.

Implementation of EPEs HYDRO-04 and HYDRO-05 and stormwater management BMPs specified in the required SWPPP would minimize potential for sediment-laden or polluted runoff leaving work areas, and impacts would be less than significant. No mitigation is required.

f) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means.

Less than Significant Impact. Direct impacts to Waters of the U.S. could result from the installation of tower and pole structure foundations adjacent to the Santa Ana River and several of its tributaries. Direct, short- to long-term impacts to wetland vegetation, hydrology, and soils could result from temporary work areas (e.g., pulling and tensioning sites) associated with construction of the Van Buren Offset Alternative. Work areas would be cleared to some extent for the safe operation of construction equipment, which would adversely impact wetland vegetation. Operation of heavy equipment has the potential to cause soil compaction and rutting, which could in turn alter wetland hydrology.

Direct, permanent impacts to National Wetlands Inventory (NWI) wetlands could result from the construction of new roads needed to access the ROW during construction of the Van Buren Offset Alternative. Road construction may require grading and filling of wetlands and temporary bridge crossings of streams.

Wetland boundaries would be field-verified through jurisdictional wetland delineation during the permitting phase of the Van Buren Offset Alternative, prior to construction. Section 404 of the Clean Water Act (CWA) regulates discharge of dredged or fill material into Waters of the U.S., including wetlands. The Van Buren Offset Alternative would require a Section 404 Nationwide 12 Permit, which allows construction of utility line projects provided the project does not result in the loss of greater than 0.5 acre of Waters of the U.S., including wetlands.

The Jurupa Area Plan of the MSHCP requires conservation of existing wetlands in the Jurupa Area Plan portion of the Santa Ana River, with a focus on conserving existing habitats in the river. Some potential disturbance areas would be located within Criteria Cell 617, where conservation is focused on lands connecting existing connected wetland habitat along the Santa Ana River.

To maintain compliance with these federal and local regulations, EPE HYDRO-01 would require the Van Buren Offset Alternative to avoid impacts to delineated wetlands and Waters of the U.S. to the extent feasible, and EPEs HYDRO-04 and HYDRO-05 would preserve or return surface hydrology and vegetation to preconstruction conditions. Additionally, Erosion Control BMPs as defined in the required SWPPP would minimize impacts to wetlands and Waters of the U.S. due to the discharge of fill material, including sediment-laden stormwater discharges. Impacts to Waters of the U.S., including wetlands, would be less than significant, and no mitigation would be required.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The Van Buren Offset Alternative does not involve placement of housing within a flood hazard zone.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less than Significant Impact. The Van Buren Offset Alternative crosses a greater extent of 100-year floodplains than does the Proposed Project, and potential impacts resulting from floodplain alteration would increase.

As required by final engineering design, transmission line structures would be placed within the 100-year floodplain of the Santa Ana River and other drainages. However, addition of “fill,” as presented by installation of transmission structure bases, would be small relative to the greater area of the floodplain, and would not displace floodwater sufficient to increase base flood elevation, and construction of these structures would not impede or redirect flood flows or raise the flood elevation.

The Van Buren Offset Alternative would comply with regional and federal regulations restricting construction that would increase base flood elevation, and would implement EPEs HYDRO-02 and HYDRO-05. Potential for the transmission structures or their bases to impede or redirect flood flows or raise the flood elevation is less than significant, and impacts resulting from placement of structures in a floodplain would be less than significant. No mitigation is required.

i) Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The Van Buren Offset Alternative would not alter floodways, increase human presence in flood-prone areas, or encroach levees or dams.

j) Would the project result in or be subject to damage from inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. The Van Buren Offset Alternative would not be located in an area subject to damage by seiche or tsunami; however, it is located in an area subject to inundation by mudflow. Although the majority of the Van Buren Offset Alternative is located on relatively high ground, transmission structures located within the 100-year floodplain could potentially be subject to mudflow, but the area of potential impact would be limited. By definition, the 100-year floodplains are subject to inundation by the one percent annual chance flood event (*i.e.*, by a storm event that has a one percent chance of occurring during any given year), and impacts would be less than significant. No mitigation is required.

Land Use and Planning

a) Would the project physically divide an established community?

Less than Significant Impact. The Van Buren Offset Alternative would traverse or adjoin land used predominantly for residential, commercial, and industrial uses, public facilities, parks and recreation, and open space. The route would not establish a permanent barrier or obstacle between these uses such that a perceived physical division would occur. While transmission structures and lines would be present, movement between and around these facilities would be possible, and they would not block or impede travel or connections within a community.

The fiber optic cable would be installed on existing overhead distribution poles, on new 230 kV transmission structures, or in existing underground conduit. No new utility ROWs would be

required for the telecommunications system. As such, the telecommunication system would not conflict with land uses.

b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction of the project (including, but not limited to the general plan, specific plan, local coastal program, or local zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Policies of the Riverside County General Plan applicable to the Van Buren Offset Alternative and consistency with these policies are described below.

Countywide Policies

Land Use Compatibility Policy LU 6.2.

- Direct public, and utility uses established to serve the surrounding community toward those areas designated for Community Development and Rural Community uses on the applicable Area Plan land use maps. These uses may be found consistent with any of the Community Development, Rural Community, or Rural foundation designations, including the Rural Village Overlay, as well as the Open Space – Rural and Agriculture designations, under conditions AI 1,3.
- **Open Space-Conservation Habitat (OS-CH) Designation.** The Open Space-Conservation Habitat land use designation applies to public and private lands conserved and managed in accordance with adopted MSHCPs. Ancillary structures or uses may be permitted for the purpose of preserving or enjoying open space. Actual building or structure size, siting, and design will be determined on a case-by-case basis.
- **Multipurpose Open Space Element Policy OS 20.2.** Prevent unnecessary extension of public facilities, services, and utilities, for urban areas, into Open Space-Conservation designated areas.

Consistency: With the exception of where the Van Buren Offset Alternative is located in the OS-CH general plan designation, the Van Buren Offset Alternative would traverse lands that fall into the Community Development, Rural Community, and Open Space-Water designations. Consequently, the Van Buren Offset Alternative in these areas would be consistent with Policy LU 6.2. As stated above, this alternative also traverses areas (3.4 acres) designated as OS-CH. The Van Buren Offset Alternative would conflict with the OS-CH designation. Avoidance of these OS-CH lands is not possible since they abut existing residential subdivisions to the south.

With consent of the Riverside County Regional Park and Open Space District (District), however, conflicts of the Van Buren Offset Alternative with this policy would be mitigated through purchase of District-approved mitigation lands in an area to be determined by the District. Impacts resulting from conflict with this policy would be less than significant.

Land Use Compatibility Policy LU 6.4. Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Consistency: The Van Buren Offset Alternative would not introduce substantial new sources of noise, fumes, glare, or traffic. The shadowing that could result would be minor and would not impact land uses. Refer to the Noise and Transportation and Traffic sections of the DEIR (Sections 3.2.11 and 3.2.15, respectively) for applicable impacts. The Van Buren Offset Alternative is consistent with Policy LU 6.4.

Land Use Compatibility Policy LU 16.1. Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized through incentives such as tax credits.

Land Use Compatibility Policy LU 16.2. Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.

Land Use Compatibility Policy LU 16.4. Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

Multipurpose Open Space Element Policy OS 7.5. Encourage the combination of Agriculture with other compatible open space uses in order to provide an economic advantage to Agriculture. Allow by right, in areas designated as Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to on-site agricultural operation.

Consistency: The Van Buren Offset Alternative would not preclude the retention of agriculturally designated lands at an operational scale or introduce an incompatible use. As such, the Van Buren Offset Alternative is consistent with policies LU 16.2, LU 16.4, and OS 7.5. Impacts to prime agricultural lands are discussed under Agricultural and Forest Resources, above.

Area Plans

The Van Buren Offset Alternative falls under the Jurupa Area Plan.

Jurupa Area Plan

JURAP 7.13: Discourage utility lines within the river corridor. If approved, lines shall be placed underground where feasible and shall be located in a manner to harmonize with the natural environment and amenity of the river.

Consistency: The Van Buren Offset Alternative crosses the Santa Ana River corridor and cannot avoid it. The Van Buren Offset Alternative would also not be placed underground because it is not feasible to do so. The basic cost of undergrounding a high voltage transmission line would be several times more expensive than the cost of overhead construction. In addition, adverse environmental impacts associated with undergrounding the transmission line have been identified as being greater than the environmental impacts associated with the installation of the transmission line above ground (refer to Chapter 6, Section 6.4.3). Although the proposed 230 kV transmission line would conflict with this policy, impacts resulting from conflict with this policy would be less than significant.

Specific Plans

County specific plan policies applicable to the Van Buren Offset Alternative were not identified.

County of Riverside Zoning Ordinance

While SCE, in accordance with General Order 131-D, would obtain input from Riverside County regarding land use matters related to siting (i.e., the exact location of proposed facilities), a use permit is a discretionary land use instrument, and SCE would not be required to obtain a public use permit from Riverside County prior to Project approval.

Riverside County Airport Land Use Compatibility Plan

SCE's 230 kV transmission line components of Van Buren Offset Alternative would include the construction of TSPs and LSTs ranging from 110-175 feet in height. According to the Riverside Municipal Airport Compatibility Map, these structures would fall within the following Airport Compatibility Zones D and E. However, no local discretionary permits or local plan consistency evaluations by Riverside County ALUC or the City of Riverside are required for SCE's proposed 230 kV transmission line (CPUC G.O. 131-D, Section XIV.B). While local review is not required for SCE facilities, as with the Proposed Project, prior to final design of the Van Buren Offset Alternative, and as far in advance of construction as possible, SCE will submit a Notice of Proposed Construction or Alteration (Form 7460-1) to the FAA in accordance with applicable regulations and initiate consultation with the FAA to determine the extent of any aeronautical hazards and potential recommendations due to the proximity of SCE facilities to public airports or public use airports. Following the completion of consultation, SCE will review any recommendations of the FAA, and will submit documentation of this consultation to RPU.

RPU's proposed 69 kV subtransmission lines (height range between 65 and 90 feet) would be located within the following Compatibility Zones: Wilderness Substation to Mountain View Substation (Compatibility Zones C and D); Wilderness/Wildlife Substation to Jurupa Avenue (Compatibility Zones C, D, and E); and RERC to Harvey Lynn Substation and Freeman Substation (Compatibility Zones A, B1, B2, C, D, and E). Per policy 1.15.3, actions within these zones that may warrant review by the RCALUC include proposals for new development (including buildings, antennas, and other structures) having a height of more than 35 feet (Zones B1 and B2), 70 feet (Zone C), and 150 feet (Zones D and E).

The Van Buren Offset Alternative would comply with applicable regulations of the FAA, and Form 7460-1 would be required of RPU pursuant to FAA Regulations, Part 77. Final locations, structures, and structure heights, including subtransmission lines and construction-related equipment (i.e., cranes) that might impact air navigation, would be submitted to the FAA for the Project.

Consistency: Applicable 69 kV subtransmission line components requiring review will be submitted by RPU to the RCALUC. Van Buren Offset Alternative adherence to the determinations of the FAA and approval by the Riverside County ALUC would ensure that potential conflicts with the RCALUC would be less than significant.

The Flabob Airport is not located within an RCALUC designated Airport Influence Area. Aircraft, however, have utilized the Santa Ana River at low altitudes to access the Flabob Airport (Leo Doiron, Flabob Airport Manager, March 2006).

City of Riverside General Plan 2025

Applicable policies of the City of Riverside General Plan 2025 and the consistency of the Van Buren Offset Alternative with these policies are described below.

Public Facilities and Infrastructure Element

Objective PF-6: Provide affordable, reliable and, to the extent practical, environmentally sensitive energy resources to residents and businesses.

Policy PF-6.2: Ensure that adequate back-up facilities are available to meet critical electric power needs in the event of shortages or temporary outages.

Consistency: The proposed 69 kV subtransmission lines and Wilderness Substation are consistent with the objectives and policies specified in the Public Facilities and Infrastructure Element of the City of Riverside General Plan 2025 (see above).

Neighborhood Plans

Neighborhood Plans were not identified within the Van Buren Offset Alternative study corridors.

City of Riverside Zoning Code

Public utilities are compatible with zoning designations in the City of Riverside. Airport and airport industrial zones restrict types of uses and heights of structures on and near the airport. However, no local discretionary permits or local plan consistency evaluations by Riverside County ALUC or the City of Riverside are required for SCE's proposed 230 kV transmission line (CPUC G.O. 131-D, Section XIV.B). While local review is not required for SCE facilities, as with the Proposed Project, prior to final design of the Van Buren Offset Alternative, and as far in advance of construction as possible, SCE will submit a Notice of Proposed Construction or Alteration (Form 7460-1) to the FAA in accordance with applicable regulations and initiate consultation with the FAA to determine the extent of any aeronautical hazards and potential recommendations due to the proximity of SCE facilities to public airports or public use airports. Following the completion of consultation, SCE will review any recommendations of the FAA, and will submit documentation of this consultation to RPU.

c) Would the project directly or indirectly disrupt an established or recently approved land use.

Less than Significant Impact. The Van Buren Offset Alternative would require new ROW. Direct impacts on two structures (non-residential) and various other miscellaneous materials/goods could result from the incompatibility with, or removal from, the ROW. The location of the ROW within existing and planned developments could result in direct impacts where operation would preclude or impair future development activities (e.g., development-level land uses, such as specific plans, as well as approved tract and parcel maps and plot plans).

Existing and planned land uses traversed by the Van Buren Offset Alternative include commercial/industrial/public use properties, two structures (non-residential), and approved undeveloped or planned residential and commercial developments (refer to the Land Use Technical Report included in the Technical Appendices to this DEIR).

SCE would obtain input from Riverside County regarding land use matters related to the exact siting of the proposed 230 kV transmission line prior to Van Buren Offset Alternative construction in accordance with General Order 131-D.

The fiber optic cable would be installed on existing overhead distribution poles, on new 230 kV transmission structures, or in existing underground conduit. No new utility ROWs would be required for the telecommunications system. As such, the telecommunication system would not conflict with land uses.

d) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Less than Significant Impact. The Van Buren Offset Alternative would be located within the Western Riverside County MSHCP boundary. The Van Buren Offset Alternative would be developed in strict compliance with the MSHCP. The City of Riverside, as a permittee to the MSHCP, and the Regional Conservation Authority would ensure compliance.

Mineral Resources

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Given that the Van Buren Offset Alternative area is located within MRZ-3 and MRZ-4, where the significance of mineral deposits cannot be determined from the available data or there is insufficient data to assign any other MRZ designation, impacts to locally important and known mineral resources would not occur.

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. A review of the general plans for the City of Riverside and Riverside County did not indicate any locally important mineral resource recovery sites that would be encroached upon by the Van Buren Offset Alternative.

Noise

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Less Than Significant Impact. The Van Buren Offset Alternative operation would not expose persons to noise levels in excess of standards established in plans or noise ordinances for a majority of time the facilities are in operation. Corona effects—faint but audible noise caused by small, localized discharges most commonly on high-voltage (345 kV and above) transmission lines—from the 230 kV transmission lines would not result in short-term, temporary instantaneous noise levels in excess of local standards.

Temporary construction-related noise would occur, but would be within acceptable levels of local plans and ordinances. Construction noise can be created from on-site and off-site sources. On-site noise sources would principally consist of the operation of heavy-duty diesel and gasoline-powered construction equipment. Off-site noise sources would include vehicles

commuting to and from the job site, as well as from trucks transporting material to the staging areas or construction ROW.

Two types of noise are associated with on-site construction activities: intermittent and continuous. On-site construction noise would occur primarily from heavy-duty construction equipment (e.g., dozers, backhoes, cranes). It is estimated that dozers would be on-site for approximately six months. It should be noted that noise levels are calculated based on the assumption that noise from a localized source is reduced by approximately six A-weighted decibels (dB(A)) with each doubling of distance from the source of noise.

The maximum intermittent construction noise levels would range from 80 to 90 dB(A) at 50 feet for supporting structure assembly and tamping operations. Direct noise impacts would result from construction activities occurring adjacent to sensitive receptors, such as houses and recreation areas. However, this noise would be short-term, occurring during daylight hours, when the ambient noise levels are at their highest amount. Chapter 3, Noise lists the ambient noise measurements taken for the Proposed Project; these measurements show typical noise levels that would be expected within the general project area during both day and nighttime periods.

While noise levels would vary for different construction tasks, the maximum expected noise levels would occur from bulldozers and drilling operation.

Off-site noise during construction would occur primarily from commuting workers and from various truck trips to and from the construction sites. The procedures for bringing personnel, materials, and equipment to each structure site would vary along the route alignments. It is assumed that truck trips would be required to haul structures, conductor line, and other materials to the construction sites. The peak noise levels (approximately 70 to 75 dB(A) at 50 feet) associated with passing trucks and commuting worker vehicles would be short-term in duration and would generate adverse, but less than significant, impacts.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Less Than Significant Impact. The Van Buren Offset Alternative operation would not produce ground-borne vibration or noise. Temporary construction-related vibrations and noise would occur, but would not be excessive compared to other construction work occurring in the Van Buren Offset Alternative area.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Less Than Significant Impact. The Van Buren Offset Alternative would be in compliance with audible noise requirements. There would neither be a substantial nor a permanent increase in noise level.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Less Than Significant Impact. Construction of the Van Buren Offset Alternative would produce a temporary increase in noise level. These increased levels are not a substantial increase

above existing conditions. Corona effects from the 230 kV lines would not result in short-term, temporary instantaneous noise levels in excess of local standards.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The noise from the transmission line would not be higher than existing airport and highway noise.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips within the vicinity of the Van Buren Offset Alternative.

Population and Housing

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than Significant Impact. Under the Van Buren Offset Alternative, construction jobs as well as associated worker family members and so-called ripple effect jobs have a potential to result in some in-migration into the Project area. This is estimated to result in a population increase of approximately 748 persons. If all of this population increase were to occur in the City of Riverside (2010 population 304,051), the City's population would increase by well under 0.3 percent. This increase would more likely be spread across the region's urbanized area. Although no precise estimates of its population have been made, it is likely to be in excess of 1.5 million persons. Thus, population impacts would be well under 0.1 percent.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. The Van Buren Offset Alternative would displace two single-family residences, which is not considered substantial; however, the Proposed Project would not displace any housing. There would be no need to construct replacement housing elsewhere, as existing housing is available within and surrounding the project area. Transient construction workers would likely stay in transient accommodations, such as hotels or RV parks, for the duration of their employment on the Van Buren Offset Alternative, and would unlikely bring dependents given the short-term nature of the construction.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact. The Van Buren Offset Alternative would displace two single-family residences, which is not considered substantial. However, the Proposed Project would not displace any people. The displacement of the two single family residences would not require the construction of replacement housing elsewhere, as existing housing is available within and surrounding the project area.

Public Services and Utilities

ai.) Fire Protection.

Would project construction and operation result in the need for new facilities or staff to provide fire protection and emergency medical services?

Less than Significant Impact. Fire protection and emergency response services in the Van Buren Offset Alternative area are provided by the Riverside County Fire Department (RCFD) in unincorporated areas of Riverside County, the City of Riverside Fire Department in the City of Riverside, and the City of Norco Fire Department within the city's own municipal boundaries.

Construction of the Van Buren Offset Alternative may generate a temporary increase the demand for fire protection services in the Van Buren Offset Alternative area. A portion of the Van Buren Offset Alternative area includes land containing dry brush near the banks of the Santa Ana River. Although unlikely, fire suppression services may be required during Van Buren Offset Alternative construction if sparks generated by idling construction vehicles or equipment accidentally ignite dry vegetation located in or adjacent to Van Buren Offset Alternative sites, ROWs, or staging areas. To minimize fire potential, crews would be required to avoid the idling of construction vehicles and power equipment when not in use.

Transmission infrastructure may present a fire hazard during Van Buren Offset Alternative operation, requiring the need for fire suppression services. Incidences of fire could occur if tree limbs or structures were to interface with a live phase conductor. The likelihood of this occurring would be reduced by the periodic clearing of vegetation within Van Buren Offset Alternative ROWs. Similarly, structures that may present a fire hazard and danger to the public would be restricted from the ROWs.

To minimize fire incidences and unnecessary burden on fire protection providers, proper fire-safety standards established in the Fire Management Plan would be followed relative to Van Buren Offset Alternative construction, and construction personnel would be trained to use proper fire prevention and management techniques. Electrical equipment and fencing at the substation would be grounded to prevent unexpected surges that could ignite fires, requiring a response. In the instance of fire, coordination with the County and the local fire district would occur to ensure that construction activities and associated lane closures would not hinder emergency response pathways or delay response time.

Construction of the Van Buren Offset Alternative may generate a temporary increase to the demand for emergency response services in the Van Buren Offset Alternative area. Emergency medical services may be required in the event of construction-related injury or other emergency situations. To minimize the potential for construction-related injuries and the need for emergency medical services, a Health and Safety Plan would be prepared and implemented as part of the Van Buren Offset Alternative design.

The Van Buren Offset Alternative would not introduce new residential populations to the area that would require the construction of new, or modification of existing, governmental facilities associated with fire protection or emergency response services. No substantial short-term

provisions of additional fire facilities, equipment, or emergency response services would be required for the Van Buren Offset Alternative, resulting in a less than significant impact.

Compared to the Proposed Project, construction of the Van Buren Offset Alternative could require greater involvement by the RCFD and the California Highway Patrol in coordinating traffic and temporary lane closure during conductor stringing activities, where the route spans State Route 60. However, construction activities would not generate a permanent need for additional law enforcement services in the area, resulting in a less than significant impact.

aii.) Police Protection.

Would project construction activities temporarily increase the demand for police protection services?

Less than Significant Impact. Law enforcement services in the Van Buren Offset Alternative area are provided by the Riverside County Sheriff's Department (RCSD) in unincorporated areas of Riverside County and the Riverside Police Department (RPD) in the City of Riverside. The California Highway Patrol provides additional traffic and law enforcement services along I-15 and State Route 60 in the Van Buren Offset Alternative area.

Construction of the Van Buren Offset Alternative may require the use of local law enforcement agencies in Riverside County and in the City of Riverside. Much of the Van Buren Offset Alternative would require the installation of transmission towers structures within or adjacent to existing road ROWs. Many of the roadways for both the 230 kV and 69 kV portions are within heavily trafficked urban areas.

Construction of the Van Buren Offset Alternative may require temporary closure or single-lane closure of roadways during the transport of oversized equipment, and stringing of the conducting wires. Road closures and the placement of safety barriers along roadways would be coordinated with the local police and would be scheduled to take place during off-peak commute hours to the extent practicable. Compared to the Proposed Project, construction of the Van Buren Offset Alternative could require greater involvement by the Riverside County Fire Department and the California Highway Patrol in coordinating traffic and temporary lane closure during conductor stringing activities, where the route spans State Route 60. However, construction activities would not generate a permanent need for additional law enforcement services in the area, resulting in a less than significant impact.

Theft of construction equipment and/or vandalism could also occur during the Van Buren Offset Alternative construction period, requiring a response by local law enforcement. Standard precautionary measures, such as securing equipment when left unattended, would be implemented by construction personnel at the job sites to minimize theft and vandalism. If necessary, SCE would contract with a local security firm to provide 24-hour security services at the marshalling yards and material staging and laydown areas during Van Buren Offset Alternative construction to minimize the involvement of local law enforcement.

Therefore, Van Buren Offset Alternative use of police services would be associated with temporary construction-related conditions. No permanent, significant impact on law enforcement services would result.

*aiii.) Schools, Parks, and Other Public Facilities.**Would project construction activities temporarily increase the demand for schools, parks, or other public facilities?*

No Impact. An increase in the demand for public facilities, such as schools, parks, or libraries, is typically correlated with a substantial increase in the size of the local population. SCE would utilize their existing regional labor forces for construction of the Van Buren Offset Alternative, and workers already residing in the Van Buren Offset Alternative vicinity would commute to the job-site from surrounding communities. It is highly unlikely that workers would uproot their children from the schools they are currently enrolled in and relocate their families into the Van Buren Offset Alternative area during the temporary construction period. Therefore, construction of the Van Buren Offset Alternative would not introduce any permanent sources of housing or new residents to the area, and would not impact the performance objectives of existing schools, parks or other public facilities, necessitating the construction of new, or augmentation of existing, public facilities.

b) Would the project fail to comply with wastewater treatment requirements of the Regional Water Quality Control Board?

No Impact. The wastewater stream resulting from construction of the Van Buren Offset Alternative would include a small volume of effluent generated by worker use of portable toilet facilities at the Van Buren Offset Alternative staging areas. The resulting wastewater effluent would be managed through the appropriate sanitation district by a licensed contractor. Based on the size of the anticipated construction workforce (see Chapter 2, Project Description), the wastewater produced during Van Buren Offset Alternative construction would be minimal. Wastewater generated during construction would be removed from the site by a licensed sanitation contractor and appropriately disposed of according to RWQCB requirements.

No wastewater would be generated from Van Buren Offset Alternative operation.

Van Buren Offset Alternative wastewater would not exceed the wastewater treatment requirements of the applicable RWQCB, and no impacts would result.

c) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities?

No Impact. The Eastern Municipal Water District provides water and wastewater treatment services to all unincorporated areas within Riverside County, which includes the area traversed by the Van Buren Offset Alternative. The Riverside Public Works Department serves as the water and wastewater purveyor in the City of Riverside.

Van Buren Offset Alternative construction would require the use of recycled or “gray” water to suppress fugitive dust generated by excavation at the Van Buren Offset Alternative sites, along transmission ROWs, and along access roads. Potable water would be imported to the site by workers for drinking and sanitation purposes. Water used during the construction phases for dust suppression and domestic drinking purposes would not generate wastewater that would entail treatment or disposal.

As previously noted, the use of portable toilet facilities at the Van Buren Offset Alternative staging areas would generate a minimal amount of wastewater that would be maintained by a licensed sanitation contractor, and would not require the construction of new or physical alteration of existing wastewater treatment facilities.

Van Buren Offset Alternative operation would also require a minimal amount of water for emergency procedures (e.g., fire suppression) and for landscaping irrigation around the perimeters of the proposed Wilderness and Wildlife substations. Water utilized for these purposes would be absorbed or would naturally evaporate into the air and would not require treatment or disposal.

Therefore, construction of new or expanded wastewater facilities would not be necessary to serve the Van Buren Offset Alternative, and no impacts associated with such construction would result.

d) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities?

No Impact. The Van Buren Offset Alternative would introduce new impervious surfaces in the Van Buren Offset Alternative area from construction of the two new substations (approximately 9.05 acres), and transmission structure foundations (approximately 0.5 acres). The compaction of soil and the installation of concrete foundations would be required to support new infrastructure. Approximately 44.79 acres of land would be subject to temporary construction disturbance (i.e., temporary access roads, pulling/tensioning sites) and would be restored to preconstruction conditions after the completion of Project construction. Measures provided in the Van Buren Offset Alternative SWPPP would address proper management of stormwater runoff flows and would be strictly followed by crews during construction. With implementation of the Van Buren Offset Alternative SWPPP, the net increase in impervious surfaces resulting from the Van Buren Offset Alternative would not substantially alter the quantity or location of additional stormwater that enters the drainage system, the Van Buren Offset Alternative is not anticipated to require the construction of new, or expansion of existing, stormwater drainage facilities in the Van Buren Offset Alternative area.

e) Would the project exceed existing water supplies?

No Impact. During Van Buren Offset Alternative construction activities, recycled water would be imported to minimize fugitive dust resulting from ground disturbance, and bottled potable water would be required for drinking purposes. The quantity of water required to manage fugitive dust typically depends on site-specific conditions such as the local climate, and the quantity, length, surface conditions, and amount of soil cover on Van Buren Offset Alternative access roads as well as other excavated areas. Water required for fugitive dust suppression for the Van Buren Offset Alternative would represent a minute quantity relative to water resources available in the region.

Consequently, the Van Buren Offset Alternative water needs would not surpass existing water service capacities, and would not require new or expanded water facilities or entitlements. No impacts associated with such construction would result.

f) Would the project exceed existing wastewater capacity?

No Impact. Van Buren Offset Alternative construction would require the use of water to suppress dust generated during ground disturbing activities. Disposal would not be required because the amount of water needed for dust suppression would be minimal and would evaporate into the surrounding air or percolate into the ground.

As previously mentioned, construction of the Van Buren Offset Alternative would also generate a nominal amount of wastewater resulting from the temporary use of portable toilet facilities at the Van Buren Offset Alternative staging areas. The wastewater produced during Van Buren Offset Alternative construction would not significantly affect the service capacities of local wastewater treatment facilities. Sanitation waste would be removed from the site by a licensed sanitation contractor and treated at the Riverside Water Quality Control Plant, and no other wastewater is anticipated to result from Van Buren Offset Alternative construction or operation. Therefore, the Van Buren Offset Alternative's wastewater treatment demands would not hinder the local wastewater treatment provider's ability to serve the Van Buren Offset Alternative in addition to the provider's existing commitments.

g) Would the project exceed existing landfill capacity?

Less than Significant Impact. The Van Buren Offset Alternative would generate solid waste, mostly in the form of construction debris. The Riverside County Waste Management Department regulates the collection, management, transportation, and disposal of solid waste at landfills which serve the Van Buren Offset Alternative area, including the Badlands, El Sobrante, and Lamb Canyon landfills. SCE would implement EPE UTIL-01 to minimize the potential for impacts to occur associated with the disposal of construction waste material, and to assist the local jurisdictions in meeting their solid waste diversion goals and AB 939 standards. Excess soil from tower foundation excavation would be backfilled in the same area, where feasible. The debris would be disposed of as follows: municipal solid waste and waste consisting of large amounts of organic material (e.g., soil, vegetative material, cardboard boxes) would be transported to sanitary landfill facilities, and inert solid waste (e.g., asphalt, concrete fragments, and scrap metal) would be hauled to unclassified landfill facilities. Hazardous waste would be picked up and transported by a licensed hauler to a disposal facility permitted to accept such waste. Solid waste resulting from construction of the Van Buren Offset Alternative would represent only a small fraction of the total landfill capacity available in the region.

Since area landfills would have sufficient capacity to accommodate the Van Buren Offset Alternative's solid waste disposal needs, a less than significant impact would result.

h) Would the project conflict with federal, state, and local statutes and regulations related to solid waste?

No Impact. Solid waste generated by the Van Buren Offset Alternative would consist of construction debris, including concrete fragments, asphalt, scrap metal, soil, and some vegetative material. Construction waste that could not be diverted would be picked up and transported to an appropriate landfill in the region permitted to accept the waste.

Since Van Buren Offset Alternative-generated construction waste would represent only a small fraction of the total landfill capacity available in the region, landfills in the area would have sufficient capacity to accept Van Buren Offset Alternative waste.

Riverside County and the City of Riverside have each adopted a Source Reduction and Recycling Element that addresses solid waste diversion goals, recycling programs, and practical methods for achieving solid waste diversion objectives in compliance with AB 939 standards. Local jurisdictions within the Van Buren Offset Alternative area met or surpassed the minimum requirements of AB 939 between 2004 and 2006. SCE would implement EPE UTIL-01 to ensure that the maximum amount of construction waste materials would be diverted from disposal at a landfill.

Therefore, the Van Buren Offset Alternative would comply with applicable statutes and standards related to solid waste; no impact would result.

i) Would the project cause utility system disruptions or cause a co-location accident through the crossing or shared location with another utility line during construction of the Project?

No Impact. As with the Proposed Project, construction of the Van Buren Offset Alternative could potentially interrupt or diminish services provided by underground or overhead utilities if an accidental co-location accident were to occur. Service interruptions could result if subsurface water, sewer, or natural gas pipelines were accidentally encountered below Van Buren Offset Alternative easements during grading activities or the boring of holes for pole installation.

However, the potential for a co-location accident to occur would be small due to standard measures employed by SCE and RPU prior to construction of the Van Buren Offset Alternative. For this alternative, SCE and RPU would generally follow the same two-step process as described for the Proposed Project (see Section 3.2.13, Public Services and Utilities) to ensure avoidance of a co-location accident with existing above and underground utilities. This would include direct communication between RPU and local utilities, notification of the Underground Service alert at least two working days prior to any planned excavation activities, and manual probing along the alignment.

Consequently, no co-location accidents with existing utility lines during construction of the Van Buren Offset Alternative are anticipated to result; related utility service disruptions would not occur.

Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. As with the Proposed Project, the Van Buren Offset Alternative would not contain a residential component that would result in an increased use of recreational facilities, and would not include or require the construction or expansion of recreational facilities.

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. As with the Proposed Project, the Van Buren Offset Alternative does not include any plans for the addition of any recreational facilities, nor would it require the construction or expansion of recreational facilities. Therefore, the Van Buren Offset Alternative would not result

in any adverse physical effects on the environment from construction or expansion of additional recreational facilities.

c) Would the project disrupt recreational activities, which would adversely affect the recreational value of existing facilities?

Less Than Significant Impact with Mitigation Incorporation. The Van Buren Offset Alternative traverses lands (6.3 acres) that have received federal funding through the LWCF program. These lands include the Santa Ana River Wetlands Mitigation Bank and an area of Riverside County public/quasi-public land. Spanning or placing project components on these lands would constitute a conflict with the LWCF, according to the California State Parks, Office of Grants and Local Services, which is the Agency that oversees the LWCF program in California.

Conversions are evaluated for approval by the National Park Service (NPS) in conjunction with California State Parks. As noted in the “Regulatory Setting” discussion for this resource, there are numerous prerequisites that must occur before the NPS agrees with the conversion of the resource. As such, the following mitigation measure would need to be added to the Van Buren Offset Alternative to reduce the impact of converting LWCF land to less than significant.

MM-REC-02. Replace land purchased or improved with Land and Water Conservation Funds [Section 6(f) Property]. Coordinate with the National Park Service, California State Parks- Office of Grants and Local Services, and the grantee to replace the property used by the Van Buren Offset Alternative in size, value and function through a conversion process.

Construction and operational activities could potentially disrupt access to established recreational facilities/areas or otherwise disturb activities in such areas. Impacts associated with construction activities would be temporary in nature, whereas impacts associated with operation would continue for the lifetime of the Van Buren Offset Alternative and are therefore considered to be permanent or recurring impacts.

The Van Buren Offset Alternative would also traverse various trails including the Santa Ana River Trail (refer to Table 3.2.14-2), and as noted above, the Santa Ana River Wetlands Mitigation Bank and public/quasi-public land. Construction activities would result in noise, dust, and traffic that would reduce the aesthetic value of the area(s) and disrupt recreational and/or open space areas. Construction vehicles could also potentially restrict access by users of these facilities/areas in order to protect the safety of public recreationists. During construction, ground work would be required at each structure location as well as along select roadways between the locations. As a result, these areas would be temporarily closed during construction activities. These impacts would be temporary and of short duration, lasting only as long as required to complete the activity in a given location.

During operational activities, it is expected that ground work would be limited to transmission structure locations and other ground-based infrastructure. Recreational resources that are adjacent to areas where ground work is necessary would be temporarily restricted from use during such activities, thus restricting access to or resulting in the disruption of normal recreational activities within such areas. In addition, impacts would also occur if operational

activities require that certain roads and/or trails be closed for access to infrastructure and such closures remove access to existing recreational resources or opportunities. Such closures would be temporary and of short duration, lasting only as long as required to complete necessary operation and maintenance of infrastructure.

The restriction or disruption of recreational resources due to construction, operational, and maintenance activities would adversely impact members of the public who would otherwise use affected recreational resources during the time period(s) that they would be restricted or disrupted. Implementation of mitigation measures MM-REC-01 (Recreation Area Closures) and MM-REC-02 (Replace land purchased or improved with Land and Water Conservation Funds) in addition to EPE REC-1 (Recreational Areas), EPE REC-2 (Closure Notices), and EPE REC-3 (Revegetation) serve to minimize the impacts to recreation users and would ensure that impacts are moderate or less than significant.

Transportation and Traffic

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

Less than Significant Impact With Mitigation Incorporation. The Van Buren Offset Alternative would not conflict with Riverside City and Riverside County plans that establish measures of effectiveness of the transportation circulation system. Construction of the Van Buren Offset Alternative may create short-term delays and would be mitigated through mitigation measures MM TRANS 01 through 19 as described on Table 2.10-1 (Proposed Mitigation Measures) in Chapter 2; however, operation and maintenance of the Van Buren Offset Alternative over the long-term would only require service vehicles on the circulation network to perform routine maintenance or respond to emergencies at the Van Buren Offset Alternative facilities. Such activities are not anticipated to generate substantial vehicle traffic as to exceed City and County LOS standards.

Compared to the Proposed Project, construction of the Van Buren Offset Alternative could require greater involvement by the RCFD and the California Highway Patrol in coordinating traffic and temporary lane closure during conductor stringing activities, where the route spans State Route 60. However, construction activities would not generate a permanent need for additional law enforcement services in the area.

b) Would the project conflict with an applicable congestion management program including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

No Impact. The Riverside County Transportation Commission (RCTC) adopted the Congestion Management Plan in March 2010 to address congestion management in Riverside County. According to this document, RCTC's adopted minimum for State highways and arterial streets is Level of Service (LOS) "E" or current, whichever is furthest from LOS "A." LOS "E" standards include brief duration stoppages and flow speed one half to one third free-flow speeds. Operation and maintenance of the Van Buren Offset Alternative would not conflict with the CMP as these

activities would involve only service vehicles to perform routine maintenance or respond to an emergency. Such activities are not anticipated to generate substantial vehicle traffic as to exceed the County's LOS standard of "E" or conflict with the CMP.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Less than Significant Impact with Mitigation Incorporation. Air traffic patterns are not anticipated to change at Flabob Airport or Riverside Municipal Airport with the Van Buren Offset Alternative. The tallest structures proposed for the Van Buren Offset Alternative are the 230 kV lattice towers, which would be approximately 140 to 160 feet above ground level. Coordination with Flabob Airport ownership would occur as part of Mitigation Measure HAZ-01 during the design phase to verify project compatibility with airport operations. In accordance with Airport Master Plan Policy LU-22.5, the Riverside County Airport Land Use Commission would review the Van Buren Offset Alternative for consistency with all adopted and applicable airport land use compatibility plan policies for Flabob Airport and Riverside Municipal Airport. Given the proximity of the Van Buren Offset Alternative to Riverside Airport, RPU would prepare and submit Form 7460-1, "Notice of Proposed Construction or Alteration," to the Federal Aviation Administration for review to ensure that the proximity of new overhead transmission lines will not create a hazard for pilots or result in a change to existing air traffic patterns.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The Van Buren Offset Alternative includes construction on both existing ROWs and new ROWs. Transmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along the ROW. Spur roads are roads that lead from line access roads and terminate at one or more transmission pole/tower sites. All curves on the roads would have a radius of curvature of not less than 50 feet, measured at the center line of the usable road surface. Access and spur road gradients would be leveled so that any sustained grade does not exceed 12 percent. New points of access to the existing roadway network will be required where new ROW is required for the Van Buren Offset Alternative.

e) Would the project result in inadequate emergency access?

Less Than Significant Impact. Implementation of EPE TRANS-03 would include provisions in the traffic control plan, which is developed in conjunction with agencies to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. A review of the City of Riverside's General Plan 2025 Circulation and Community Mobility Element and the Riverside County's 2008 General Plan Circulation Element indicated that the Van Buren Offset Alternative would not conflict with alternative transportation policies and objectives, or decrease the performance or safety of such facilities.

Relationship to Proposed Project Objectives

The Van Buren Offset Alternative would meet the majority of the Proposed Project Objectives. However, environmental impacts to Aesthetics, Hydrology and Water Quality, Population and Housing, and Public Services and Utilities would be increased in comparison to the Proposed Project. The Van Buren Offset Alternative would result in visual impacts of greater magnitude as compared to the Proposed Project, greater impacts due to the increased slope of works areas along the Santa Ana River and increased construction within 100-year floodplains, displacement of two single-family residences, and greater involvement of the RCFD and California Highway Patrol in coordinating traffic and lane closures. The Van Buren Offset Alternative would not reduce any of the Proposed Project's significant impacts; additionally, the Van Buren Offset Alternative would not significantly reduce impacts to environmental resources in such a way that makes it a clearly environmentally superior alternative to the Proposed Project.

6.6 Environmentally Superior Alternatives

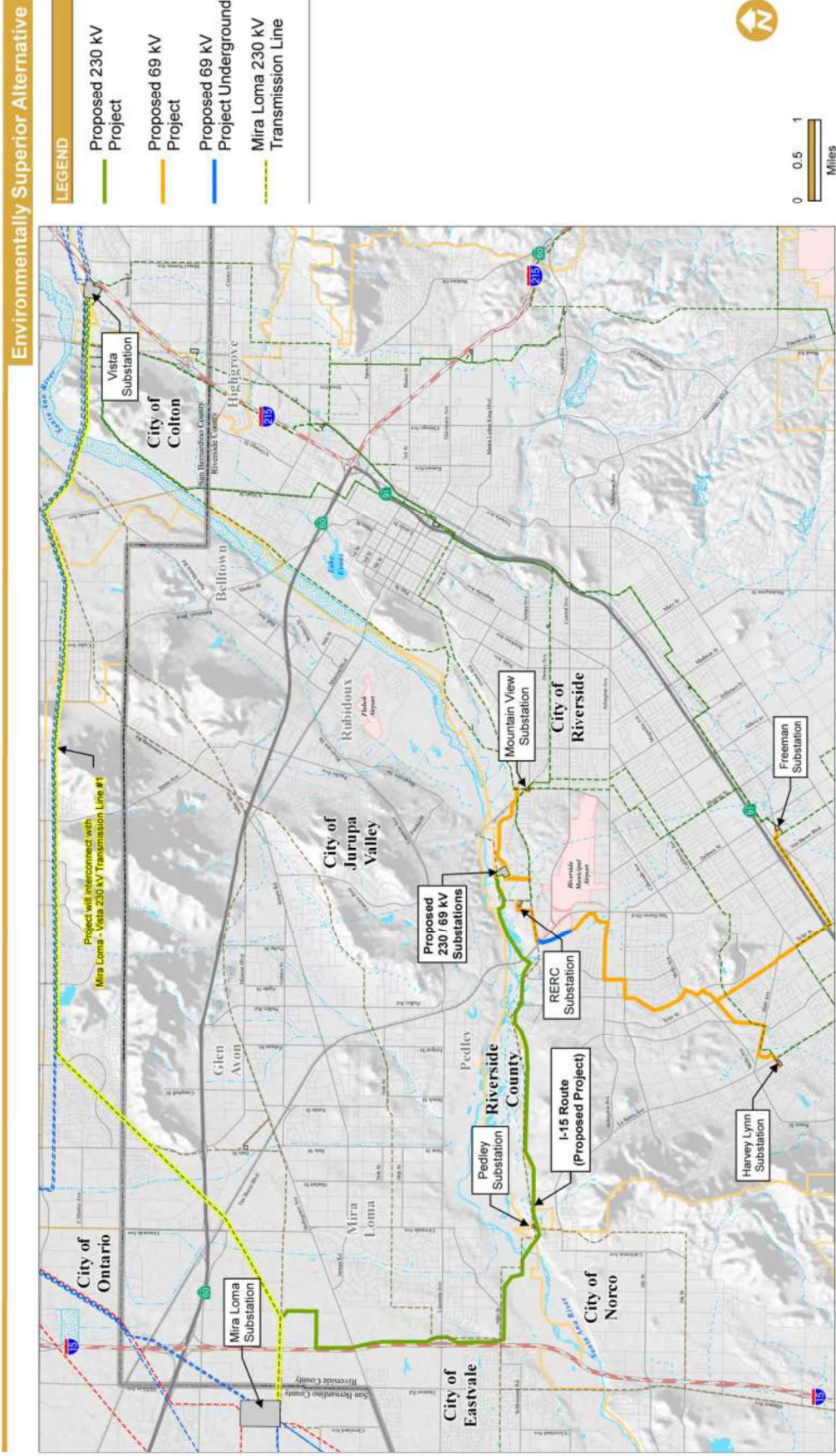
CEQA Guidelines (§ 15126.6) state the following when comparing project alternatives:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in additions to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

CEQA Guidelines further describe the comparison and the identification of an Environmentally Superior Alternative as being required. The Guidelines state that if the Environmentally Superior Alternative is the No Project Alternative, identification of an Environmentally Superior Alternative among the other alternatives is required (§ 15126.6(e)).

Based on the foregoing analysis, and as summarized in Table 6.5-1, the environmentally superior alternative is the “No Project” alternative. Of the remaining alternatives, the Proposed Project (i.e., the I-15 Route) is environmentally superior. Both the Proposed Project and the Van Buren Offset Alternative had similar impact levels for a variety of resources. On balance, the Proposed Project was determined to have fewer impacts overall. Although longer than the Van Buren Offset Route, the Proposed Project avoids more developed areas and high-value LWCF lands and wildlife habitats. The Van Buren Offset Alternative would result in the removal of several residential structures and other “out-buildings” associated with various private parcels. The Van Buren Offset Alternative would also have greater effects to existing and planned transportation projects within the Proposed Project area and would also result in significantly more traffic-related impacts during construction. Each route would impact lands managed for open space and wildlife habitat that were purchased using the federal LWCF program, although the management goals that would be affected differ slightly within the river corridor. The Proposed Project would result in less impacts to LWCF properties and would better utilize existing linear features, such as existing transmission lines and transportation corridors (I-15).

FIGURE 6.6-1. ENVIRONMENTALLY SUPERIOR ROUTE (REVISED)



RIVERSIDE TRANSMISSION RELIABILITY PROJECT

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