

3 ALTERNATIVES

3.1 INTRODUCTION

Pursuant to CEQA Guidelines Section 15126.6(a), an EIR must describe a reasonable range of potentially feasible alternatives to a project, or to the location of the project, that would feasibly attain most of the basic project objectives while reducing or avoiding any of the project's significant environmental effects.

This chapter is organized as follows:

- Section 3.2 provides an overview of the alternatives development process
- Section 3.3 describes the methodology used for evaluating and screening alternatives
- Section 3.4 presents a summary of alternatives that have been selected for and alternatives that have been eliminated from, full analysis in this Subsequent EIR, based on CEQA criteria
- Section 3.5 describes in detail each alternative that has been retained in this Subsequent EIR for analysis
- Section 3.6 presents the No Project Alternative
- Section 3.7 presents descriptions of each alternative that was eliminated from this Subsequent EIR analysis and explains why each was eliminated

Four alternatives have been retained for analysis in this Subsequent EIR (Figure 3.2-1). Chapter 6 of this Subsequent EIR provides a comparison of alternatives based on the environmental analysis of each alternative presented in Chapter 4: Environmental Analysis. The Environmentally Superior Alternative is identified in Chapter 6.

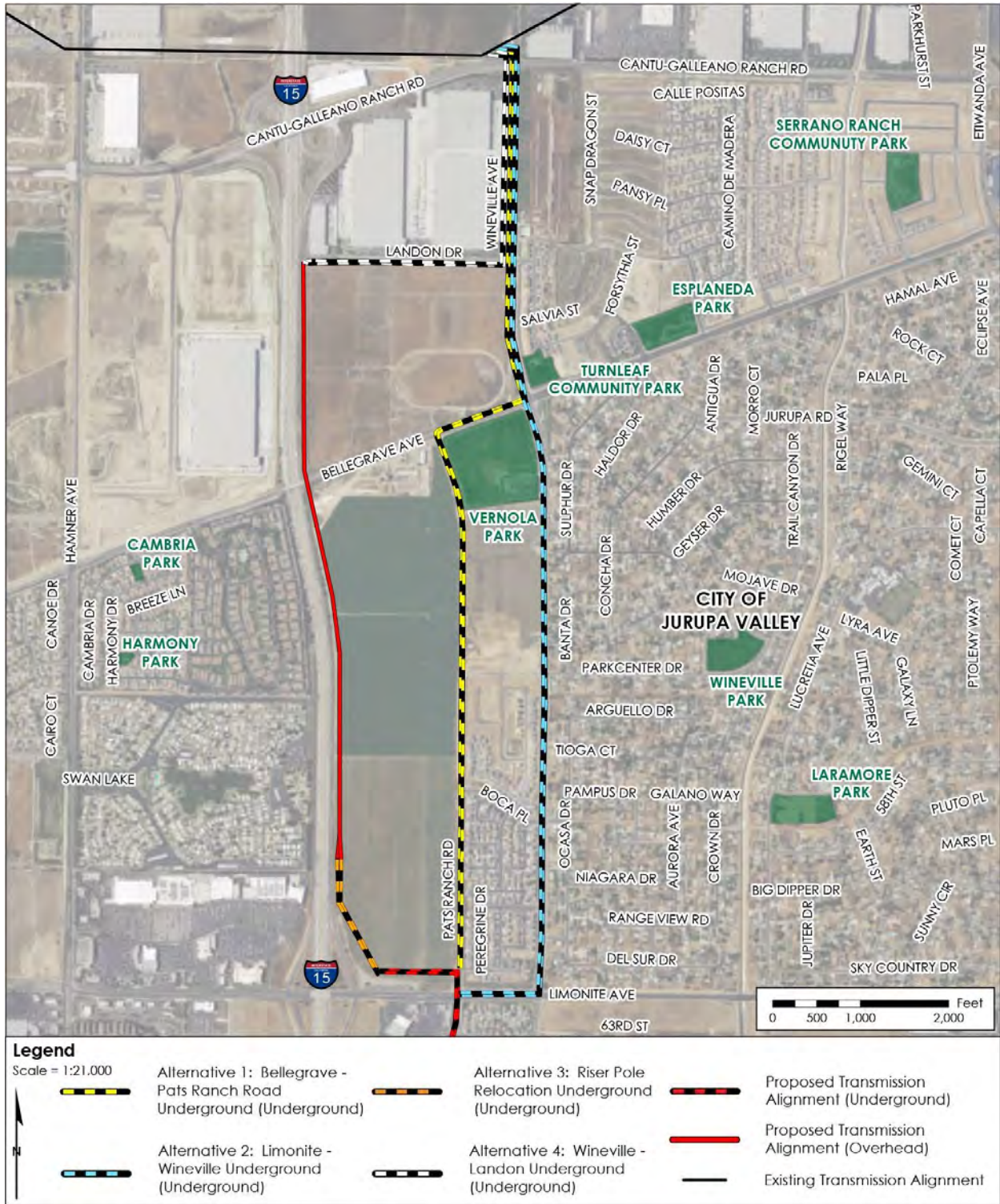
3.2 ALTERNATIVES DEVELOPMENT PROCESS

The Revised Project is described in detail in Chapter 2: Project Description of this Subsequent EIR. The Alternatives Screening Report in Appendix D of this Subsequent EIR describes the alternatives screening analysis that has been conducted by the CPUC for the Revised Project. It provides a record of the screening criteria, results that were reached regarding alternatives carried forward for full analysis in this Subsequent EIR, and includes alternatives eliminated. The Alternatives Screening Report documents:

1. The range of alternatives that were suggested and evaluated
2. The approach and methods used to screen the feasibility of these alternatives according to guidelines established under CEQA
3. The results of the alternatives screening process

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Figure 3.2-1 Alternatives Considered in this Subsequent EIR



(esri 2017, SCE 2017, CDFW 2016)

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The Alternatives Screening Report (Appendix D) explains in detail the rationale for elimination of alternatives that were eliminated from Subsequent EIR consideration and the evidence supporting this determination. The alternatives development process identified 30 potential alternatives. The alternatives were developed based on:

- Alternatives considered in the 2013 RTRP EIR
- Alternatives proposed by SCE in the application for a CPCN
- Alternatives suggested by the public during scoping
- Alternatives developed by SCE and RPU in response to CPUC request for consideration of lower voltage alternatives
- Other potentially feasible alternatives capable of meeting the project objective as developed by the CPUC CEQA Team

3.3 ALTERNATIVES SCREENING METHODOLOGY

3.3.1 Screening Methodology

Alternatives were evaluated using a screening process that consisted of three steps:

- Step 1:** Clearly define each alternative to allow comparative evaluation.
- Step 2:** Evaluate each alternative in comparison with the Revised Project using CEQA criteria (defined below).
- Step 3:** Based on the results of Step 2, determine the suitability of each alternative for full analysis in this Subsequent EIR. If the alternative is unsuitable, eliminate it from further consideration.

Infeasible alternatives and alternatives that did not offer any overall environmental advantage (i.e., the alternative either did not reduce or avoid one or more of the Revised Project's significant effects, or if it did, other effects were significantly increased) were removed from further consideration and analysis. Four alternatives were retained for analysis in this Subsequent EIR, and 26 alternatives were eliminated from further analysis. Following the screening process, the advantages and disadvantages of the remaining alternatives were carefully weighed with respect to CEQA's criteria for consideration of alternatives.

3.3.2 California Environmental Quality Act Requirements

CEQA Guidelines Section 15126.6 (a) states that:

An EIR shall describe a reasonable range of alternatives to the project, or to the location of 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.

The CEQA Guidelines require an EIR to include an evaluation of the comparative merits of the alternatives selected for analysis, and sufficient information about each alternative to compare it with the Revised Project. An EIR should explain how the project alternatives were selected for

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analysis, as well as identify the alternatives that were rejected as infeasible and briefly explain why they were rejected (CEQA Guidelines Section 15126.6[a], [c], [d]). The CEQA Guidelines state that the discussion of alternatives shall focus on alternatives capable of eliminating or reducing significant adverse environmental effects of a project, even if these alternatives would impede to some degree the attainment of the basic project objectives¹, or would be more costly. However, CEQA Guidelines declare that an EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative.

To comply with CEQA requirements, each alternative was then evaluated in three ways:

1. **Does the Alternative Meet Most of the Basic Project Objectives?** The basic project objectives are (i) increase capacity to meet existing and future load growth and (ii) provide an additional point of delivery for bulk power into the RPU electrical system. If an alternative did not meet at least one of the basic project objectives, it was rejected from further analysis.
2. **Is the Alternative Potentially Feasible?** Feasibility considers factors such as limitations to permitting a high-voltage transmission line and other required electrical infrastructure, lands with legal protections, consistency with regulatory standards, whether the cost of the alternative would be prohibitive, and the consideration of available technology. Alternatives that were not potentially feasible were rejected from further analysis.
3. **Does the Alternative Avoid or Reduce Significant Environmental Impacts?** Potentially significant impacts of the Revised Project include aesthetic impacts from the riser poles proposed at Limonite Avenue and overhead transmission poles along Wineville Avenue, and noise and traffic impacts from the underground transmission line construction. Alternatives that would not avoid or reduce any significant impacts of the Revised Project, or would create or substantially increase significant impacts compared to the Revised Project, were rejected from further analysis.

Each CEQA requirement is described as it applies to the alternatives identified. The Alternatives Screening Report (refer to Appendix D) provides more detail about the evaluation process for each alternative.

3.3.3 Consistency with the Project Objective

SCE proposed two project objectives in their application for a CPCN. The objectives proposed by SCE, and CPUC's evaluation of SCE's objectives, are presented in Chapter 1: Introduction of this Subsequent EIR. Both of SCE's objectives met the underlying fundamental purpose of the project and are basic project objectives. The basic project objectives include:

- Increase capacity to meet existing electric system demand and anticipated future load growth

¹ The basic project objectives are those objectives that meet the underlying fundamental purpose of the project.

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- Provide an additional source of bulk power into the RPU electrical system, thereby reducing dependence on Vista Substation and increasing overall reliability

The evaluation of alternatives in this Subsequent EIR provides information on whether each alternative could feasibly accomplish most of the basic project objectives.

3.3.4 Consistency with California Environmental Quality Act Requirements

Feasibility

The CEQA Guidelines Section 15364 defines feasibility as “...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” The alternatives screening analysis is largely governed by what CEQA terms the “rule of reason,” meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Those alternatives that are potentially feasible and would potentially reduce significant environmental impacts, while still meeting the basic project objective, are fully analyzed in this Subsequent EIR.

According to CEQA Guidelines Section 15126.6(f)(1), factors that may be considered when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and the project proponent’s control over alternative sites. For the screening analysis, the potential feasibility of alternatives was assessed taking the following factors into consideration:

- **Legal Feasibility.** Does the alternative have the potential to avoid lands that have legal protection that may prohibit or substantially limit the feasibility of permitting a high-voltage transmission line? Lands that are afforded legal protections that would prohibit the construction of the project, or require an act of Congress for permitting, are considered less feasible locations for the project. These land use designations include wilderness areas, wilderness study areas, restricted military bases, airports, and Indian reservations. Information on potential legal constraints of each alternative has been compiled from laws, regulations, and local jurisdictions, as well as from a review of federal, state, and local agency land management plans and policies.
- **Regulatory Feasibility.** Do regulatory restrictions substantially limit the likelihood of successful permitting of a high-voltage transmission line? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance? Is it feasible to obtain the necessary permits within a reasonable period of time?
- **Technical Feasibility.** Is the alternative potentially feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

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- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The CEQA Guidelines Section 15126.6(b) require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of the project objectives, or would be more costly”. The Court of Appeals determined in *Citizens of Goleta Valley v. Board of Supervisors* (1988) : “. . . The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.”²
- **Environmental Feasibility.** Would implementation of the alternative cause greater environmental damage than the Revised Project, thereby making the alternative clearly inferior from an environmental standpoint? This issue is primarily addressed in terms of the alternative’s potential to eliminate significant effects of the Revised Project only. The 2013 RTRP EIR included alternatives to the entire RTRP, including the Wildlife Substation. Alternatives that would only reduce impacts to portions of the RTRP that were not revised and are not analyzed in this Subsequent EIR, would not meet the screening criteria for environmental feasibility.

Potential to Eliminate Significant Environmental Effects

A key CEQA requirement for an alternative is that it must have the potential to “avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines Section 15126.6[a]). At the screening stage, it is not possible to evaluate all of the impacts of the alternatives in comparison to the Revised Project with absolute certainty, nor is it possible to quantify impacts. It is possible to identify elements of an alternative that are likely to be the sources of impacts and to relate them, to the extent possible, to general conditions in the subject area.

The Revised Project’s significant environmental impacts were identified and evaluated to develop alternatives and determine whether an alternative would meet CEQA Guidelines Section 15126.6 requirements. The potentially significant impacts of the Revised Project are described in Sections 4.1 through 4.13 of this Subsequent EIR, and include the following:

- Aesthetic impact from the riser poles proposed on the north side of Limonite Avenue and the placement of overhead transmission towers along Wineville Avenue
- Agricultural resource impact from the loss of Prime Farmland at vaults within the agricultural area north of Limonite Avenue
- Air quality impacts from vehicle and dust emissions during construction
- Biological resource impacts from loss of riparian and wetland habitat

² See also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, p. 736.

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- Cultural resource impacts from impacts to inadvertent discoveries of cultural resources
- Hazard and utilities impacts from induced current
- Noise and traffic impacts from the underground transmission line construction on Pats Ranch Road and 68th Street

Findings in Sections 4.1 through 4.13 show that impacts on aesthetics, agricultural resources, noise, and traffic would be significant and unavoidable even after applying mitigation.

Public Utilities Code Considerations for Alternatives

In considering SCE's application for a CPCN, the CPUC will be guided by the Public Utilities Code in addition to the requirements of CEQA. Public Utilities Code § 1002 states that:

- (a) The commission, as a basis for granting any certificate pursuant to Section 1001 shall give consideration to the following factors:
 - (1) Community values.
 - (2) Recreational and park areas.
 - (3) Historical and aesthetic values.
 - (4) Influence on environment, except that in the case of any line, plant, or system or extension thereof located in another state which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (Chapter 55 [commencing with Section 4321] of Title 42 of the United States Code) or similar state laws in the other state, the commission shall not consider influence on the environment unless any emissions or discharges therefrom would have a significant influence on the environment of this state.

The CPUC will consider the "community values" as expressed in the CPUC's proceeding on the project and the Subsequent EIR. The CPUC anticipates that the final decision will represent a reasonable balancing of community interests, the need to protect environmental resources in the area, and the need for the project.

3.4 SUMMARY OF ALTERNATIVES SCREENING RESULTS

Each of the alternatives considered in the Alternatives Screening Report is identified in Table 3.4-1 with a summary of the alternative's ability to meet the basic project objectives and feasibility criteria. The alternatives retained for further consideration and analysis and the No Project Alternative are described in Sections 3.5 and 3.6 below. The alternatives eliminated from further consideration are described in Section 3.7, along with a rationale for their elimination.

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Table 3.4-1 Summary of Alternatives Screening Analysis

Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
Alternatives Retained					
<p>Alternative 1: Bellegrave – Pats Ranch Road Underground</p> <p><i>This alternative would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The line would travel south along Wineville Road to Bellegrave Avenue. From this intersection, the alternative would proceed west along Bellegrave Avenue to Pats Ranch Road. At Pats Ranch Road, the line would turn south to Limonite. This alternative would follow the same underground alignment as the Revised Project from Pats Ranch Road at Limonite Avenue.</i></p> <p>Source: SCE and 2017 Scoping</p>	Meets basic project objectives.	Meets all feasibility criteria.	Meets criteria. Would reduce potentially significant aesthetic impacts from the riser poles on Limonite Avenue and the relocated overhead transmission towers adjacent to homes on Wineville Avenue and reduce significant impacts on agricultural resources north of Limonite Avenue.	Transmission Route/ Underground	<i>Retained</i>
<p>Alternative 2: Wineville – Limonite Underground</p> <p><i>This alternative would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The line would travel south along Wineville Road to Limonite Avenue. The alternative would turn west and remain underground within Limonite Avenue to Pats Ranch Road. This</i></p>	Meets basic project objectives.	Meets all feasibility criteria.	Meets criteria. Would reduce potentially significant aesthetic impacts from the riser poles on Limonite Avenue and relocated overhead transmission line towers adjacent to homes on Wineville Avenue and reduce significant impacts on agricultural resources north of Limonite Avenue.	Transmission Route/ Underground	<i>Retained</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p><i>alternative would follow the same underground alignment as the Revised Project from Pats Ranch Road at Limonite Avenue.</i></p> <p>Source: CPUC</p>					
<p>Alternative 3: Relocate Northern Riser Poles</p> <p><i>This alternative would relocate the riser poles at Limonite Avenue to approximately 0.25 mile north of Limonite Avenue adjacent to Interstate 15. The additional segment of underground transmission line would follow the Revised Project alignment.</i></p> <p>Source: CPUC</p>	Meets basic project objectives.	Meets all feasibility criteria.	Meets criteria. Would reduce potentially significant aesthetic impacts from the riser poles on Limonite Avenue by relocating the poles further from viewers at Limonite Avenue.	Pole Relocation	<i>Retained</i>
<p>Alternative 4: Wineville – Landon Underground</p> <p><i>This alternative would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The line would travel south under Wineville Avenue and west under Landon Drive. At the western end of Landon Drive, the alternative would transition to an overhead position.</i></p> <p>Source: CPUC</p>	Meets basic project objectives.	Meets all feasibility criteria	Meets criteria. Would reduce potentially significant aesthetic impacts from the overhead transmission towers and poles along Wineville Avenue between Cantu-Galleano Ranch Road and Landon Drive.	Transmission Route/ Underground	<i>Retained</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
Alternatives Eliminated					
<p>Alternative 5: Wineville Underground</p> <p><i>This alternative would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The line would travel south on Wineville Avenue to 68th Street. This alternative would follow the same underground alignment as the Revised Project from 68th Street and Wineville Avenue.</i></p> <p>Source: SCE and 2017 Scoping</p>	Meets basic project objectives.	Potentially meets feasibility criteria.	Would reduce potentially significant aesthetic impacts from the riser poles on Limonite Avenue and the relocated overhead transmission line adjacent to homes on Wineville Avenue; however, the segment south of Limonite would result in greater traffic impacts and utility conflicts.	Transmission Route/ Underground	<i>Eliminated</i>
<p>Alternative 6: Mira Loma Substation – Van Buren in Railroad ROW</p> <p><i>This alternative would travel east from the Mira Loma Substation to Van Buren Boulevard. It would extend overhead along the east side of Van Buren Boulevard within the Union Pacific Railroad ROW. The alternative would transition to underground just north of the Riverside Airport and extend underground to the Wildlife Substation.</i></p> <p>Source: 2017 Scoping and 2013 RTRP EIR</p>	Meets basic project objectives.	Does not meet feasibility criteria due to induced current effects on railroad. Furthermore, both SCE and Union Pacific do not allow transmission lines in railroad ROW.	Potentially meets criteria; would result in greater impact on hazards from induced current; would avoid the significant aesthetic impacts in Jurupa Valley, but would result in aesthetic impacts along Van Buren Boulevard and land use conflicts with the railroad.	Transmission Route	<i>Eliminated</i>
<p>Alternative 7: Eastern Alignment in Riverside</p> <p><i>This alternative would tie-in to the Mira Loma – Vista #1 230 kV</i></p>	Meets basic project objectives.	Potentially meets feasibility criteria.	Does not meet criteria. Would result in significant impacts on hydrology, geology, special-status	Transmission Route	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p><i>Transmission Line at one of five locations near Agua Mansa Road between the City of Jurupa Valley and the City of Colton. This alternative would travel southwest from the tie-in, following the Santa Ana River for approximately 8 miles. Several routing options include routes on both the northern/western and southern/eastern sides of the Santa Ana River. All routes would follow the boundary of the 100-year floodplain of the river southwest toward the Wilderness Substation.</i></p> <p>Source: 2017 Scoping and 2013 RTRP EIR</p>			<p>species and habitats, aesthetics, and recreation from placement of structures along the Santa Ana River corridor and within a 100-year flood plain. Would involve a much longer alignment than the Revised Project.</p>		
<p>Alternative 8: All Underground Transmission Line (Mira Loma – Vista #1 230-kV Transmission Line to Wildlife Substation)</p> <p><i>This alternative would follow the Revised Project route north of the Santa Ana River and would follow the approved 2013 RTRP route south of the river, but would locate the transmission line underground in all areas. The segment of the alternative that crosses the Santa Ana River would also be located underground.</i></p> <p>Source: 2017 Scoping</p>	<p>Meets basic project objectives.</p>	<p>Potentially meets feasibility criteria.</p>	<p>Does not meet criteria. Would result in substantially greater biological, cultural resource, air quality, and greenhouse gas impacts than the Revised Project. Furthermore, an underground transmission line installation south of the Santa Ana River would not reduce any impacts of the Revised Project, which are north of the river.</p>	<p>Underground</p>	<p><i>Eliminated</i></p>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p>Alternative 9: Limonite – Van Buren Underground</p> <p><i>This alternative would follow the Revised Project alignment to Limonite Avenue. From Limonite Avenue, the line would transition underground and travel east within Limonite Avenue to Van Buren Boulevard. At Van Buren Boulevard, the line would travel south within Van Buren Boulevard and cross the Santa Ana River within Van Buren Boulevard. The transmission line would transition to an overhead position on the south side of the Santa Ana River and travel east into the substation along the 2013 alignment route.</i></p> <p>Source: 2017 Scoping</p>	Meets basic project objectives.	Potentially meets feasibility criteria.	Does not meet criteria. The underground transmission line extending east on Limonite Avenue and South on Van Buren Boulevard would not reduce a significant environmental impact of the Revised Project. This alternative is much longer than the Revised Project segment from Limonite to Goose Creek Golf Course. The longer underground transmission route on major roadways would result in substantially greater traffic, air quality, and potential hazards impacts.	Transmission Route/ Underground	<i>Eliminated</i>
<p>Alternative 10: Idyllwild Lane, Julian Drive, and Bradford Street Underground</p> <p><i>This alternative would follow the Revised Project alignment south from the Mira Loma — Vista #1 230-kV Transmission Line tie-in and then follow the approved 2013 alignment route. The alternative would transition to an underground position north of Tyler Street in the City of Riverside and continue underground behind the homes on Auld Street, Julian Drive, Idyllwild Lane, Rutland Avenue and Bradford</i></p>	Meets basic project objectives.	Potentially meets feasibility criteria.	Does not meet criteria. Idyllwild Lane, Julian Drive, and Bradford Street are located with the eastern Segment of the 230-kV route south of Santa Ana River. This area is approximately 4 miles east of the Revised Project alignment. Underground construction in this area would not reduce impacts of the Revised Project, which would occur on the north side of the river. The alternative would also	Transmission Route/ Underground	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p>Street. It would return to an overhead position before crossing Van Buren Boulevard and following the approved 2013 alignment route to Wilderness substation.</p> <p>Source: 2017 Scoping</p>			result in significant aesthetic impacts due to the need for four riser poles to accommodate transitions to an underground and overhead position.		
<p>Alternative 11: I-15 South to SR-91 East Underground</p> <p>This alternative would follow the Revised Project alignment south from the Mira Loma – Vista #1 230-kV Transmission Line tie-in along Wineville Avenue until 68th Street. At 68th Street, the alternative would diverge from the Revised Project alignment, following the I-15 corridor south approximately 6 miles until I-15 intersects with SR-91. The alternative would turn east to follow SR-91 for approximately 6.5 miles before turning north to follow Van Buren Boulevard for approximately 3.5 miles. The alternative would follow the approved 2013 RTRP route near the Santa Ana River, following the alignment east to the Wildlife Substation.</p> <p>Source: 2017 Scoping</p>	Meets basic project objectives.	Does not meet regulatory feasibility criteria. Caltrans does not allow construction of transmission lines within Caltrans-operated highways.	Does not meet criteria. The route would be substantially longer than the Revised Project and would result in increased air quality, greenhouse gas, traffic, biological, and cultural resource impacts and potential land use conflicts.	Transmission Route/ Underground	<i>Eliminated</i>
<p>Alternative 12: Mountain View Substation – Agua Mansa – Mira Loma – Vista #1 230-kV Transmission Line interconnect</p>	Meets most of the basic project objectives.	May not meet technical feasibility criteria. There is no adequate space at Mountain View	This alternative would avoid the impacts of the Revised Project; however, the alternative would relocate the impacts and	System Alternative	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p>This alternative would tie-in to the Mira Loma – Vista #1 230-kV Transmission Line approximately 2.25 miles northeast of the intersection of Agua Mansa Road and Market Street in the City of Jurupa Valley. The alternative would run southwest, parallel to Agua Mansa Road, before turning south to parallel Market Street and crossing the Santa Ana River adjacent to the Market Street bridge. The alternative would then follow an existing 69-kV power line in a southwesterly direction until it reaches the Mountain View Substation at Mountain View Avenue and Sheppard Street in the City of Riverside.</p> <p>Source: 2017 Scoping</p>		<p>Substation for additional transformers associated with a new 230-kV transmission line.</p>	<p>could result in greater aesthetic, water resource, biological resource, and cultural resource impacts than the Revised Project.</p>		
<p>Alternative 13: Battery Storage</p> <p>This alternative would add battery storage facilities at existing substations in Riverside to increase Riverside's internal capacity in the event of loss of power at Vista Substation.</p> <p>Source: 2017 Scoping</p>	<p>Does not meet basic project objectives. Would not add a second source of bulk power to Riverside at the scale that is needed to address the loss of power at Vista. Would not provide sufficient capacity to support existing and future load growth.</p>	<p>Does not meet feasibility criteria at the scale that would be needed to address the loss of power at Vista Substation.</p>	<p>Meets criteria. Battery storage involves a limited disturbance area and would not be expected to result in significant environmental impacts.</p>	Non-Wire	<i>Eliminated</i>
<p>Alternative 14: Additional Transformer Capacity at Vista Substation</p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk</p>	<p>Meets feasibility criteria.</p>	<p>Meets criteria. Adding transformers at an existing substation would not result</p>	Non-Wire	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p><i>The expansion of Vista Substation would involve addition of a third 230/69-kV transformer bank at the substation.</i></p> <p>Source: 2013 RTRP EIR; CPUC</p>	<p>power delivery to Riverside. Would not increase delivery of power to Riverside to meet demand and projected load growth.</p>		<p>in significant environmental impacts.</p>		
<p>Alternative 15: Additional Transformer Capacity at Mira Loma Substation</p> <p><i>The expansion of Mira Loma Substation would involve addition of a fourth 230/69-kV transformer bank at the substation.</i></p> <p>Source: 2013 RTRP EIR; CPUC</p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not increase delivery of power to Riverside to meet demand and projected load growth.</p>	<p>Meets feasibility criteria.</p>	<p>Meets criteria. Adding transformers at an existing substation would not result in significant environmental impacts.</p>	<p>Non-Wire</p>	<p><i>Eliminated</i></p>
<p>Alternative 16: Expansion of Riverside Energy Resource Center (RERC)</p> <p><i>The expansion of RERC would involve adding additional energy generation capacity at RERC.</i></p> <p>Source: 2013 RTRP EIR; CPUC</p>	<p>Meets most basic project objectives. Would add additional capacity to meet existing demand and future load growth. Would not provide a second source of bulk power delivery to Riverside.</p>	<p>Does not meet regulatory feasibility criteria due to inability to permit additional gas-fired power plants in the area.</p>	<p>Meets criteria. Would avoid impacts of the Revised Project, but would result in greater potential long-term air quality and greenhouse gas impacts from energy generation.</p>	<p>Non-Wire</p>	<p><i>Eliminated</i></p>
<p>Alternative 17: Expansion of Electrical Equipment at Mountain View Substation</p> <p><i>The expansion of Mountain View Substation would involve addition of new electrical substation equipment at the substation.</i></p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not increase delivery of power to Riverside to</p>	<p>Meets feasibility criteria.</p>	<p>Meets criteria. Adding electrical equipment to an existing substation would not result in significant environmental impacts.</p>	<p>Non-Wire</p>	<p><i>Eliminated</i></p>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
Source: 2013 RTRP EIR	meet demand and projected load growth.				
Alternative 18: Shift Load at Vista Substation <i>This non-wire alternative would shift the RPU load to Vista Substation transformers to free up capacity on transformer banks 1A and 2A.</i> Source: CPUC	Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not increase delivery of power to Riverside to meet demand and projected load growth.	Meets feasibility criteria.	Meets criteria; avoids all impacts associated with the Revised Project.	Non-Wire	<i>Eliminated</i>
Alternative 19: Additional Generation <i>This alternative would involve the construction of additional RPU generation plants in the City of Riverside.</i> Source: 2013 RTRP EIR	Meets most basic project objectives. Would provide additional generation to meet current demand and projected load growth. Would not provide a second source of bulk power delivery to Riverside.	Does not meet regulatory feasibility criteria due to inability to permit additional gas-fired power plants in the area.	Does not meet criteria. Avoids significant impacts associated with the Revised Project, but would result in long-term air quality and greenhouse gas impacts for construction and use of additional gas-fired plants in an air basin that does not meet air quality standards.	Non-Wire	<i>Eliminated</i>
Alternative 20: Use of Internal RPU Generation <i>This alternative would involve using RPU existing generation during peak periods to mitigate high loading on the Vista transformers.</i> Source: CPUC	Does not meet basic project objectives. The existing RPU generation may not be available to meet project demand and load growth due to operating limitations. Would not provide a second source of bulk	Would not meet feasibility criteria due to SCAQMD operational limitations on the use of "peaker" plants.	Does not meet criteria. Avoids significant impacts associated with the Revised Project, but would result in long-term air quality and greenhouse gas impacts from additional use of peaking units in an air basin that is not currently	Non-Wire	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
	power delivery to Riverside.		meeting air quality standards.		
<p>Alternative 21: Distributed Generation</p> <p><i>This alternative would involve generating renewable power to offset peak loading and improve reliability.</i></p> <p>Source: 2013 RTRP EIR and CPUC; Public Utilities Code § 1002.3</p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not provide sufficient power to meet demand and projected load growth.</p>	Meets feasibility criteria.	Meets criteria; avoids all impacts associated with the project.	Non-Wire	<i>Eliminated</i>
<p>Alternative 22: Energy Efficiency and Conservation</p> <p><i>This alternative would increase energy efficiency and conservation to reduce system loading and demand for power.</i></p> <p>Source: 2013 RTRP EIR and CPUC; Public Utilities Code § 1002.3</p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not provide sufficient capacity to meet demand and projected load growth.</p>	Meets feasibility criteria.	Meets criteria; avoids all impacts associated with the project.	Non-Wire	<i>Eliminated</i>
<p>Alternative 23: Demand Response</p> <p><i>This alternative would reduce demand/electricity use during periods of peak energy use.</i></p> <p>Source: CPUC; Public Utilities Code § 1002.3</p>	<p>Does not meet basic project objectives. Would not provide a second source of bulk power delivery to Riverside. Would not provide sufficient capacity to meet demand and projected load growth.</p>	Meets feasibility criteria.	Meets criteria; avoids all impacts associated with the project.	Non-Wire	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p>Alternative 24: Consolidate the RTRP and Circle City Project; and consolidate the Valley Ivy Glen and Alberhill System Project</p> <p>This alternative would consolidate the RTRP with the Circle City Project and consolidate the Valley-Ivyglen Project with Aberhill System Project.</p> <p>Source: ORA Comment Letter</p>	<p>Does not meet basic project objectives. The alternative would not provide power to Riverside.</p>	<p>Does not meet feasibility criteria. The CPUC is required to respond to the utilities applications for each project and does not have a mechanism to require the consolidation of multiple projects that have been recommended by the CAISO.</p>	<p>Does not meet criteria. The alternative would result in substantially greater environmental impacts than the Revised Project due to the need for much longer transmission lines.</p>	System	<i>Eliminated</i>
<p>Alternative 25: Consolidate the Circle City Project, RTRP, Valley Ivy Glen, and Alberhill System Projects</p> <p><i>This alternative would consolidate multiple RPU projects by constructing a loop in at the Alberhill Substation to the Valley – Serrano 500-kV line. The alternative would also include the construction of the Circle City Substation, which would be connected to Alberhill Substation with approximately 15 miles of 220-kV line.</i></p> <p>Source: ORA Comment Letter</p>	<p>Does not meet basic project objectives. The alternative would not provide power to Riverside.</p>	<p>Does not meet feasibility criteria. The CPUC is required to respond to the utilities applications for each project and does not have a mechanism to require the consolidation of multiple projects that have been recommended by the CAISO.</p>	<p>Does not meet criteria. The alternative would result in substantially greater environmental impacts than the Revised Project due to the need for much longer transmission lines.</p>	System	<i>Eliminated</i>
<p>Alternative 26: Modify the Circle City Project to Replace the Proposed Circle City, RTRP, Valley – Ivyglen, and Alberhill System Projects</p> <p><i>This alternative would construct the Circle City Substation as a</i></p>	<p>Does not meet basic project objectives. The alternative would not provide power to Riverside.</p>	<p>Does not meet feasibility criteria. The CPUC is required to respond to the utilities applications for each project and does not have a mechanism</p>	<p>Does not meet criteria. The alternative would result in substantially greater environmental impacts due to the construction of substantially longer</p>	System	<i>Eliminated</i>

3 ALTERNATIVES

Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p>220/115/66-kV Substation and interconnect it to the Mira Loma Substation with approximately 11 miles of 220-kV lines using existing and new ROW. Approximately 27 miles of 115-kV lines along I-15 freeway would be constructed to interconnect Ivyglen and Fogarty 115-kV Substations to the Circle City 220-kV Substation.</p> <p>Source: ORA Comment Letter</p>		to require substantial modifications of another project.	transmission and power lines than the Revised Project.		
<p>Alternative 27: Deliver 66-kV Power to Riverside from multiple SCE sources and install metering</p> <p><i>This alternative would use SCE's existing 66-kV power line network surrounding Riverside to provide power to Riverside. SCE would build points of interconnection to Riverside and use metering to monitor power delivery from SCE to Riverside.</i></p> <p>Source: CPUC</p>	The alternative would potentially meet project objectives assuming SCE builds new power lines to interconnect with Riverside.	The alternative would require new legal agreements between SCE and Riverside to change the way the utilities operate. The alternative would take many years to implement an agreement and define and construct the best points of connection and would not meet feasibility criteria.	Does not meet criteria. The alternative would require additional power line infrastructure into Riverside resulting in greater environmental impacts due to additional power lines in a number of areas.	System	<i>Eliminated</i>
<p>Alternative 28: Lower Voltage Alternative A – Single Source</p> <p><i>This alternative would involve a single substation interconnection (Mira Loma), with up to three 280 MW transformers. The alternative includes installation of three double-circuit 69- kV lines and one single-circuit line for a total of seven 69-kV circuits.</i></p>	The alternative would potentially meet project objectives by providing additional interconnection points for bulk power delivery to Riverside.	The alternative is potentially technically feasible; however, it would require relocation of facilities within Mira Loma Substation and would require four 280 MW transformers, which exceeds SCE's planning standards.	Does not meet criteria. The alternative would result in greater environmental impacts due to substantial increase in project length for overhead and underground power lines.	System	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
Source: RPU and SCE		The alternative does not meet regulatory feasibility criteria because it would take substantial time to obtain approvals for the new power lines in three new power line corridors. The alternative would also be more expensive to implement.			
<p>Alternative 29: Lower Voltage Alternative B - Three Sources</p> <p><i>The alternative would add 280 MW transformers at three interconnective substations (Mira Loma, Etiwanda, and Circle City) and three double-circuit 69 kV lines for a total of six 69-kV circuits; two circuits from each substation.</i></p> <p>Source: RPU and SCE</p>	The alternative would potentially meet project objectives by providing additional interconnection points for bulk power delivery to Riverside.	The alternative would not meet technical feasibility criteria because it would be infeasible to fit to the 230/69-kV transformers within the planned Circle City Substation. The alternative would not meet regulatory or financial feasibility due to the need to modify a substation that is currently in the CPUC approval process. The expense would be in excess of \$1 Billion.	Does not meet criteria. The alternative would result in greater environmental impacts due to substantial increase in project length for overhead and underground power lines and transmission lines.	System	<i>Eliminated</i>
<p>Alternative 30: Lower Voltage Alternative C – Single Source with Solar PV and Battery Storage</p> <p><i>The alternative would have a single interconnection at the</i></p>	The alternative would potentially meet project objectives by providing additional interconnection points	The alternative is potentially technically feasible; however, it would require relocation of	Does not meet criteria. The alternative would result in greater environmental impacts due to substantial	System	<i>Eliminated</i>

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Description of Alternative	Project Objectives	Potential Feasibility	Avoid/Reduce Environmental Effects	Alternative Type	Conclusion
<p><i>Mira Loma substation with two 280-MW transformers and two double-circuit 69 kV lines for a total of four 69-kV circuits. This alternative includes a 60 MW photovoltaic (PV) solar facility and a 240-MW-hours battery energy storage system.</i></p> <p>Source: RPU and SCE</p>	<p>for bulk power delivery to Riverside and additional power generation to meet projected load growth.</p>	<p>facilities within Mira Loma Substation and would require four 280 MW transformers, which exceeds SCE's planning standards. The alternative does not meet regulatory feasibility criteria because it would take substantial time to obtain approvals for the new power lines and solar PV battery energy storage. The alternative would also be more expensive to implement.</p>	<p>increase in project length for overhead and underground power lines and area required for a solar PV and battery energy storage facility.</p>		

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3.5 ALTERNATIVES ANALYZED IN THIS EIR

3.5.1 Overview

As discussed in Section 3.3 above, alternatives were assessed for their feasibility, their ability to reasonably achieve the project objectives, and their potential for reducing the significant environmental impacts of the Revised Project. Based on these screening criteria, the four alternatives described in this section were selected for detailed analysis within this Subsequent EIR. Pursuant to CEQA Guidelines Section 15126.6, this section also contains a discussion of the No Project Alternative. Each of the alternatives analyzed in detail in this Subsequent EIR and the rationale for retaining the alternative for detailed analysis in this Subsequent EIR is described in Sections 3.5.2 through 3.5.5.

The impacts of the four project alternatives that meet the screening criteria and the No Project Alternative are analyzed in Chapter 4: Environmental Analysis at the same level of detail as the Revised Project to allow the CPUC to clearly compare the impacts of the alternatives with that of the Revised Project. If so desired, in its decision, the CPUC could elect to combine or match certain alternatives along the Revised Project route as described in Chapter 6: Comparison of Alternatives. Detailed route maps for each of the retained alternatives are shown in Appendix E. .

Table 3.5-1 below provides a summary of the structures and scope of construction activities for each project alternative retained for analysis. The construction and operation and maintenance requirements for the alternatives are described below.

Table 3.5-1 Summary of Alternatives Components and Scope of Activities

Alternative Components and Scope	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Underground 230-kV Transmission and Telecommunications length (miles)	2.1	2.2	0.25	0.8
Underground 230-kV Transmission Line and telecommunications lines ^a (miles)	2.1	2.2	0.25	0.8
Riser Poles	2 ^b	2 ^b	2 ^b	4 ^c
Splice Vaults	17	18	2	8
Alternative Construction Duration (days)	380	395	45	145

^a The underground transmission line includes two parallel 230-kV duct banks along the entire underground alignment.

^b Alternatives 1, 2, and 3 would relocate the two northern riser poles included in the Revised Project.

^c Alternative 4 would require four riser poles in addition to riser poles required for the Revised Project.

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Construction Details

The construction methods for the alternative riser poles and underground transmission lines are described in Chapter 2: Project Description of this Subsequent EIR. Riser pole installation methods are described in Section 2.4.3, and underground duct bank and vault installation methods are described in Section 2.4.4.

Temporary Work Areas

Construction of the underground duct bank would require an approximately 30-foot-wide work area, which would increase to a maximum of 100 feet wide at vault locations for vehicle and equipment access at each of the duct banks and vaults. Underground duct banks would be spaced a minimum of 10 feet apart. Standard traffic control measures consistent with those published in the 2010 California Joint Utility Traffic Control Manual would be employed to minimize traffic impacts during underground construction in the roadway.

Installation of the riser poles would require a 200-foot by 100-foot temporary work area around each riser pole. The structure work areas would be used for equipment and vehicle access, and material lay down during pole installation. Work areas for the riser poles and the underground duct banks outside of paved roadways would be subject to grading and vegetation trimming or removal. Temporary disturbance areas for each alternative are detailed in Table 3.5-2.

Material and Equipment Staging

The alternatives would use the Revised Project marshalling yards for equipment staging and materials storage.

Construction Workforce, Equipment, and Schedule

A dedicated crew of 20 workers would be needed to install the underground duct banks and vaults for each of the alternatives. The types of equipment that would be used to construct the alternatives are listed in Table 2.4-2 of this Subsequent EIR (refer to Chapter 2: Project Description) under the following activities:

- Underground vault installation
- Duct bank installation
- Underground cable installation
- Cable splicing
- Riser pole preparation
- Cable terminating
- Trench restoration/paving
- Restoration

The alternatives could be constructed separately or concurrently with the Revised Project components. Concurrent construction would require additional crews and equipment to avoid or minimize an impact on the overall project schedule. The alternatives impact analysis in Chapter 4 of this Subsequent EIR assumes concurrent construction of the Revised Project and alternatives to address the potential for greater air quality and greenhouse gas impacts that could result from concurrent construction.

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Table 3.5-2 Areas of Temporary and Permanent Disturbance for Alternatives

Alternative Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Disturbance Area (acres)				
Permanent	0.13	0.13	0.14	0.27
Temporary	15.48	16.09	2.53	7.11
Total Work Area	15.61	16.22	2.67	7.38
Cut and Fill Quantities (cubic yards)				
Spoil Disposal ^a	29,271	30,569	3,785	12,151

^a All quantities are approximate and reflect preliminary engineering and design. Quantities of cut and fill may be modified during final engineering depending on the precise alignment of the duct bank and depth of the underground transmission line.

Operation and Maintenance Details

Permanent Work Areas

Permanent work areas would need to be maintained around the riser poles and vault manholes after construction. The permanent maintenance area would extend approximately 25 feet around each riser pole, and 14 feet by 11 feet at each 230-kV vault manhole in unpaved areas. Permanent disturbance areas for each alternative are detailed in Table 3.5-2.

Inspection and Maintenance

Inspections of the vaults would occur annually for 5 years after energizing the underground circuit, and the inspection frequency would reduce to every 2 or 3 years after the initial 5 years of operation. Traffic lanes containing the manholes would be closed and traffic controls would be implemented to route traffic around the manhole and provide access to the vaults during inspections. Each inspection would last less than a day at each vault. The riser poles would be inspected as part of SCE’s regular inspection of the above-ground power and transmission lines. The riser poles would be inspected during inspections for the adjacent Mira Loma – Vista #1 230-kV Transmission Line.

3.5.2 Alternative 1: Bellegrave – Pats Ranch Road Underground

Description

The Bellegrave – Pats Ranch Road Underground Alternative (Alternative 1) route would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The transmission line would travel south within Wineville Avenue for approximately 0.7 mile, west within Bellegrave Avenue for approximately 0.2 mile, and south within Pats Ranch Road for approximately 1.2 miles. At the intersection of Pats Ranch Road and Limonite Avenue, the alternative route would follow the same underground alignment as the Revised Project. The Alternative 1 route is shown on Figure 3.5-1.

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Figure 3.5-1 Alternative 1: Bellegrave – Pats Ranch Road Underground



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Rationale for Full Analysis

Alternative 1 meets the basic project objectives, is feasible, and would avoid the Revised Project's significant aesthetic impacts from riser poles at Limonite Avenue and transmission tower at Wineville Avenue. Pats Ranch Road north of Limonite Avenue has not been constructed, and there is ample work space available to construct the underground line in this area. Bellegrave Avenue and Wineville Avenue are sufficiently wide to accommodate the underground transmission line and duct banks within the ROW. Alternative 1 has, therefore, been retained for full analysis in this Subsequent EIR. Alternative 1 may result in additional construction noise and traffic impacts, increased air pollutant emissions, and greater potential for induced current effects (i.e., shock hazard, corrosion of adjacent buried utilities). The Revised Project impacts from construction noise and traffic would not be avoided.

3.5.3 Alternative 2: Wineville – Limonite Underground

Description

The Wineville – Limonite Underground Alternative (Alternative 2) route would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The transmission line would travel south for approximately 2 miles within Wineville Avenue before reaching the intersection with Limonite Avenue. At this intersection, the alternative route would turn west within Limonite Avenue for approximately 1,000 feet before turning south within Pats Ranch Road to follow the same underground alignment as the Revised Project. The Alternative 2 route is shown on Figure 3.5-2.

Rationale for Full Analysis

Alternative 2 meets the basic project objectives, is feasible, and would avoid the Revised Project's significant aesthetic impact from riser poles at Limonite Avenue and transmission poles along Wineville Avenue. Wineville Avenue is sufficiently wide to accommodate the underground transmission line and duct banks within the ROW. This alternative has, therefore, been retained for full analysis in this Subsequent EIR. The alternative may result in additional traffic impacts, increased air pollutant emissions, and greater potential for induced current effects (i.e., shock hazard, corrosion of adjacent buried utilities). The impact of construction noise and traffic from the Revised Project would not be avoided.

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Figure 3.5-2 Alternative 2: Wineville – Limonite Underground



(esri 2017, SCE 2017, CDFW 2016)

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3.5.4 Alternative 3: Relocate Northern Riser Poles

Description

Alternative 3 involves relocation of the northern riser poles adjacent to and north of Limonite Avenue, approximately 0.25 mile north-northwest of the Revised Project's riser pole positions, to a location adjacent to the I-15 freeway. The Alternative 3 transmission line would be located underground in the same alignment as the Revised Project overhead alignment. Alternative 3 would connect to the Revised Project underground alignment directly north of Limonite Avenue. The Alternative 3 route is shown on shown on Figure 3.5-3.

Rationale for Full Analysis

Alternative 3 meets the basic project objectives, is feasible, and would reduce the Revised Project's significant aesthetic impact from riser poles at Limonite Avenue by relocating the riser poles. The alternative would not result in any new or more severe significant environmental effects. This alternative has, therefore, been retained for full analysis in this Subsequent EIR. Aesthetic impacts from relocated overhead transmission poles on Wineville Avenue, and construction noise and traffic impacts of the Revised Project would not be avoided.

3.5.5 Alternative 4: Wineville – Landon Underground

Description

The Wineville – Landon Underground Alternative (Alternative 4) would begin and transition to an underground position immediately adjacent to the tie-in to the Mira Loma – Vista #1 230-kV Transmission Line. The transmission line would travel south underground in Wineville Avenue for approximately 0.4 mile before turning west to continue underground within Landon Drive for approximately 0.4 mile. At the terminus of Landon Drive, the transmission line would transition from underground to an overhead position, and follow SCE's proposed overhead alignment south along I-15 to the Revised Project alignment. The Alternative 4 route is shown on Figure 3.5-4.

Rationale for Full Analysis

Alternative 4 meets the basic project objective, is feasible, and would avoid the Revised Project's significant aesthetic impact along Wineville Avenue from the relocated overhead transmission alignment. Wineville Avenue and Landon Drive are sufficiently wide to accommodate the underground transmission line and duct banks within the road ROW. This alternative has, therefore, been retained for full analysis in this Subsequent EIR. The alternative may result in additional traffic impacts, increased pollutant emissions, and greater induced current effects (i.e., shock hazard, corrosion of adjacent buried utilities). Construction noise and traffic impacts from the Revised Project would not be avoided.

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Figure 3.5-3 Alternative 3: Relocate Northern Riser Poles



(esri 2017, SCE 2017, CDFW 2016)

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Figure 3.5-4 Alternative 4: Wineville-Landon Underground



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3.6 NO PROJECT ALTERNATIVE

CEQA requires an evaluation of the No Project Alternative so decision makers can compare the impacts of approving the project with the impacts of not approving the project. The analysis of the No Project Alternative must include the existing conditions at the time the Notice of Preparation was published (January 2017 for the Revised Project). CEQA also requires that: “If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed” (CEQA Guidelines Section 15126.6 [e][3][B]).

The CEQA definition of the No Project Alternative depends on an understanding of “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure...” (Section 15126.6[e][2]).

Under the No Project Alternative, the Revised Project, and consequently the entirety of the RTRP would not be implemented. Without the RTRP, SCE would not construct new high-voltage transmission lines in or near the project area to supply power to the City of Riverside.

RPU’s electrical system would continue to have a single point of connection to SCE’s electrical system, making it vulnerable to power outages in the future. In the absence of the RTRP, it is likely that RPU would opt to expand the 69-kV subtransmission system and gas-fired generation capacity, and install battery storage to mitigate the system impact from potential failure of RPU’s transformers at Vista Substation, or failure of RPU’s subtransmission line interconnections to Vista Substation. The actions that RPU would be reasonably expected to take under the No Project Alternative would be similar to a combination of the Alternative 13 (battery storage) and Alternative 16 (expansion of RERC), described below. The additional gas-fired power generation and battery storage could not be economically employed at the same scale as the RTRP, and the gas-fired generation would be limited by SCAQMD (refer to Sections 3.7.9 and 3.7.12 below). The additional gas-fired generation capacity and battery storage could reduce the impact on RPU of a potential failure of RPU’s transformer bank at Vista Substation; however, RPU’s system would remain vulnerable to future outages. Consequently, the no project alternative fails to meet the following project objectives: #1 increase capacity to meet growing demand; and #2 provide a second source of bulk power to improve reliable delivery to the RPU system.

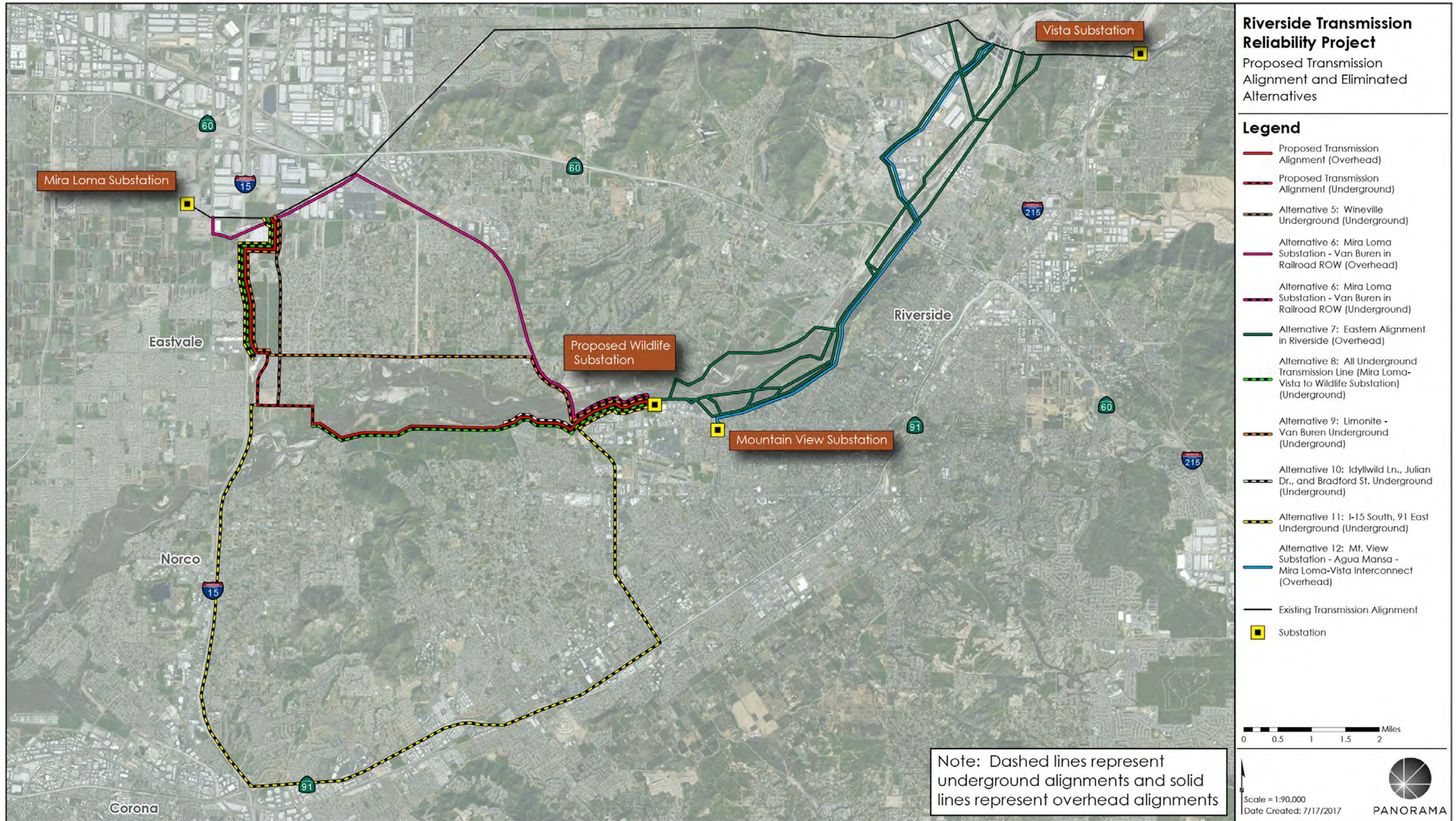
3.7 ALTERNATIVES ELIMINATED FROM EIR CONSIDERATION

The discussion below summarizes the alternatives eliminated from full analysis in this Subsequent EIR. The Alternatives Screening Report enclosed in Appendix D, provides a more in-depth discussion of the rationale for eliminating each of these alternatives. The alternative routes that were eliminated from detailed consideration are shown on Figure 3.7-1. Substation locations referenced in the alternatives are shown on Figure 3.7-2.

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Figure 3.7-1 Eliminated Transmission Route Alternatives



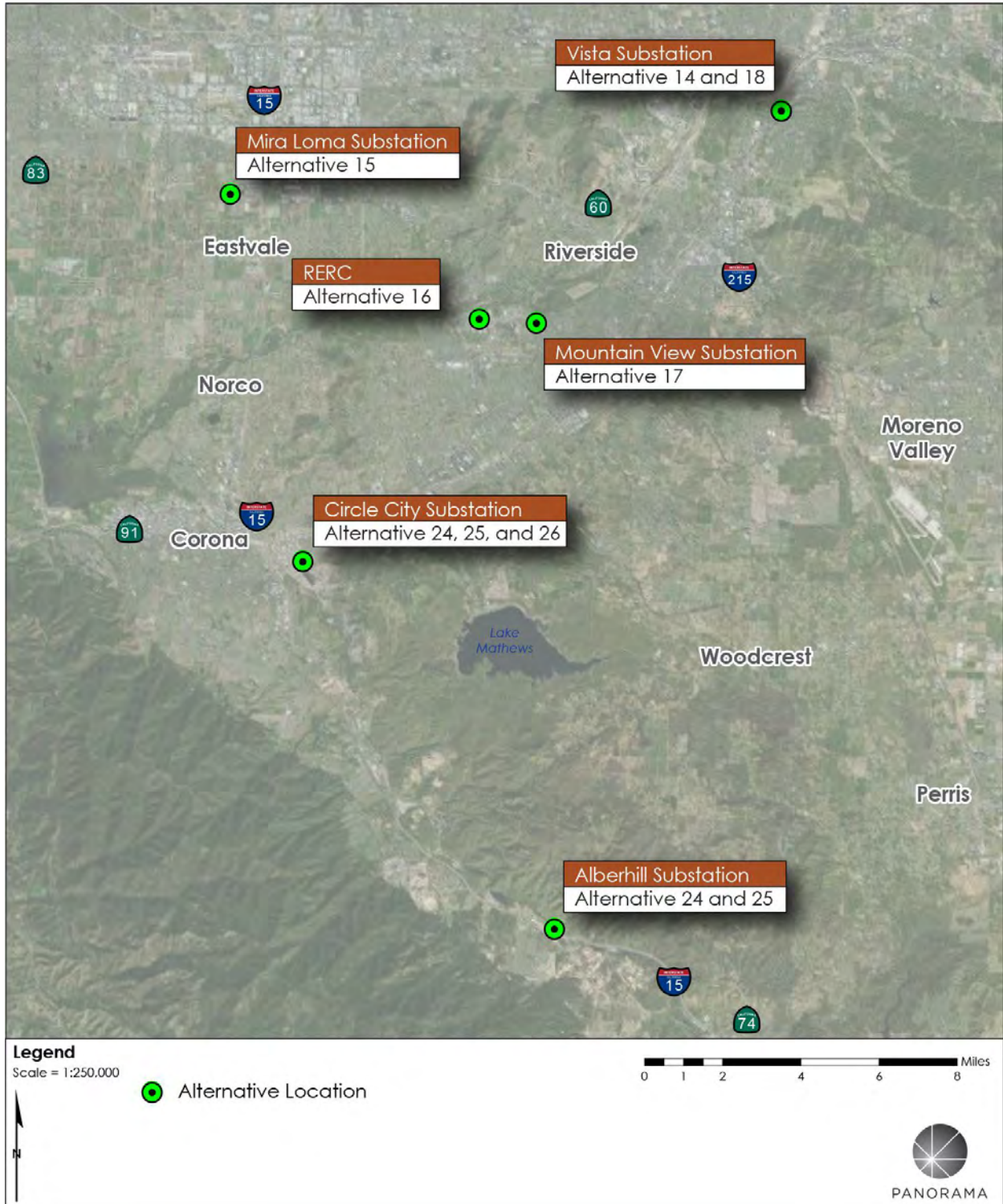
(esri 2017, SCE 2017)

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Figure 3.7-2 Eliminated Non-Wire and System Alternatives



(esri 2017, SCE 2017)

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3.7.1 Alternative 5: Wineville Underground

Description

The Alternative 5 route would begin and transition to an underground position immediately adjacent to the tie-in to Mira Loma – Vista #1 230-kV Transmission Line. The transmission line would travel south on Wineville Avenue to 68th Street. This alternative route would then follow the same underground alignment as the Revised Project from 68th Street and Wineville Avenue east and south through the Goose Creek Golf Course.

Rationale for Elimination

Alternative 5 would meet the basic project objectives; however, it was eliminated from consideration in this Subsequent EIR because it would result in potentially greater environmental impacts related to noise, traffic, utilities, and hazards than the Revised Project underground alignment on Pats Ranch Road. The alternative may not “substantially conform” with the Settlement Agreement and could present legal conflicts.

3.7.2 Alternative 6: Mira Loma Substation – Van Buren in Railroad ROW

Description

The Alternative 6 route would start at the Mira Loma Substation and then travel east for 2 miles to Van Buren Boulevard as an overhead line. At Van Buren Boulevard, the alternative route would turn southeast, remaining overhead and running along the east side of Van Buren Boulevard within the Union Pacific Railroad ROW for approximately 5 miles. The transmission line would transition to an underground position after crossing the Santa Ana River. The underground alignment would turn east after the river crossing, following the approved 2013 RTRP alignment to reach to the Wildlife Substation.

Rationale for Elimination

Alternative 6 would meet the basic project objectives; however, it was eliminated from consideration in this Subsequent EIR because it is not legally feasible. Neither SCE nor Union Pacific Railroad would allow the transmission line to be located within the railroad ROW.

3.7.3 Alternative 7: Eastern Alignment in Riverside

Description

The Alternative 7 route would begin and tie-in to the Mira Loma – Vista 230-kV #1 Line at one of five locations near Agua Mansa Road between the City of Jurupa Valley and the City of Colton. The transmission line would travel southwest from the tie-in, following the Santa Ana River south for approximately 8 miles. Several routing options would be available for this alternative, including routes on both the northern/western and southern/eastern sides of the Santa Ana River. All routes would follow the boundary of the 100-year floodplain of the river southwest toward the Wilderness Substation.

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Rationale for Elimination

Alternative 7 was previously considered in the 2013 RTRP EIR (refer to Appendix D, Siting Study in the 2013 RTRP EIR); further evaluation of this alternative is not needed. This alternative would meet the basic project objective; however, it was eliminated from consideration in this Subsequent EIR because it would result in greater environmental impacts than the Revised Project, and does not meet the environmental screening criteria.

3.7.4 Alternative 8: All Underground Transmission Line (Mira Loma – Vista #1 230-kV Transmission Line Interconnect to Wildlife Substation)

Description

The Alternative 8 route would begin and transition to an underground position immediately adjacent to the Mira Loma – Vista #1 230-kV Transmission Line interconnect. The transmission line would follow the Revised Project route from the Mira Loma – Vista #1 230-kV Transmission Line interconnect to Wildlife Substation, but all segments of the transmission line would be located underground, including the crossing of the Santa Ana River and segments south of the Santa Ana River.

Rationale for Elimination

Alternative 8 achieves the basic project objectives and potentially meets criteria for technical, legal, and regulatory feasibility. The alternative does not meet the environmental screening criteria and was eliminated from consideration in this Subsequent EIR because it would result in substantially greater environmental impacts than the Revised Project. The underground transmission line as part of Alternative 8 would be much longer than the Revised Project. Portions of the underground transmission line route located south of the Santa Ana River would not avoid or reduce any new significant effects of the Revised Project and would result in potentially significant impacts.

3.7.5 Alternative 9: Limonite – Van Buren Underground

Description

The Alternative 9 route would follow the Revised Project alignment to Limonite Avenue. At Limonite Avenue, the transmission line would transition underground and travel east within Limonite Avenue to Van Buren Boulevard. At Van Buren Boulevard, the transmission line would travel south within Van Buren Boulevard and cross the Santa Ana River within the Van Buren Boulevard bridge. The transmission line would transition back to an overhead position on the south side of the Santa Ana River and travel east to the Wildlife Substation along the 2013 approved RTRP alignment.

Rationale for Elimination

Alternative 9 achieves the basic project objectives and may be feasible; however, the alternative was eliminated from consideration in this Subsequent EIR because the alternative would not

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reduce any significant impacts of the Revised Project and has the potential to create new significant impacts. The alternative does not meet the environmental screening criteria.

3.7.6 Alternative 10: Idyllwild Lane, Julian Drive, and Bradford Street Underground

Description

The Alternative 10 route would follow the approved 2013 RTRP alignment and Revised Project alignment except for a 1-mile segment that would be located underground southeast of the Revised Project on the south side of the Santa Ana River. The transmission line would transition to an underground position north of Tyler Street in the City of Riverside, and continue underground north of the homes on Auld Street, Julian Drive, Idyllwild Lane, Rutland Avenue, and Bradford Street. The alternative alignment would return to an overhead position before crossing Van Buren Boulevard and would follow the approved 2013 RTRP route to the Wildlife Substation. This alternative would not modify the Revised Project alignment.

Rationale for Elimination

Alternative 10 achieves the basic project objectives and potentially meets the criteria for technical, legal, and regulatory feasibility. This alternative would not reduce any impacts of the Revised Project, and it has the potential to create significant additional environmental impacts, including significant aesthetic, biological resource, cultural resource, and noise impacts. The alternative does not meet the environmental screening criteria.

3.7.7 Alternative 11: I-15 South to SR-91 East Underground

Description

The Alternative 11 transmission line would be entirely underground from the Mira Loma-Vista #1 230-kV Transmission Line interconnect to Wildlife Substation. The transmission line would follow the Revised Project alignment south from the Mira Loma tie-in at Cantu-Galleano Ranch Road and Wineville Avenue until 68th Street. At 68th Street, the transmission line would diverge from the Revised Project alignment, following the I-15 corridor south approximately 6 miles until I-15 intersects with SR-91. The transmission line would turn east and follow SR-91 for approximately 6.5 miles before turning north to follow Van Buren Boulevard for approximately 3.5 miles. The Alternative 10 route would reconnect with the approved 2013 RTRP alignment at its intersection with Van Buren Boulevard and follow the approved alignment to Wildlife Substation.

Rationale for Elimination

Alternative 11 would be technically feasible and achieves the basic project objectives; however, it was eliminated from consideration in this Subsequent EIR because it does not meet the regulatory feasibility criteria. California Department of Transportation (Caltrans) does not allow installation of underground utilities beneath Caltrans-operated highways (Caltrans, 2013). The alternative would also result in substantially greater environmental impacts than the Revised Project.

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3.7.8 Alternative 12: Mountain View Substation – Agua Mansa – Mira Loma – Vista #1 230-kV Transmission Line Interconnect

Description

The Alternative 12 route would begin and tie-in to the Mira Loma – Vista #1 230-kV Transmission Line interconnect approximately 2.25 miles northeast of the intersection of Agua Mansa Road and Market Street in the City of Jurupa Valley. The transmission line would run southwest, parallel to Agua Mansa Road before turning south to parallel Market Street for approximately 1 mile. The transmission line would cross the Santa Ana River adjacent to the Market Street bridge. After crossing the river, the transmission line route would follow an existing 69-kV power line in a southwesterly direction, following the Santa Ana River Trail for approximately 4.25 miles and crossing Jurupa Avenue. The transmission line would then tie-in to the Mountain View Substation at Mountain View Avenue and Sheppard Street in the City of Riverside.

Rationale for Elimination

Alternative 12 was previously considered by the City of Riverside in the 2006 Siting Study (Appendix D of the 2013 RTRP EIR). This alternative may not meet feasibility criteria due to insufficient space within the Mountain View Substation for a 230-kV transmission line. The alternative would avoid significant impacts within Jurupa Valley, but was eliminated from further consideration in this Subsequent EIR because it would relocate those impacts, and would result in greater environmental impacts along the Santa Ana River. The alternative does not meet the environmental screening criteria.

3.7.9 Alternative 13: Battery Storage

Description

Alternative 13 involves adding battery storage systems in Riverside to improve reliability in lieu of a new 230-kV transmission line.

Rationale for Elimination

Alternative 13 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives, and it is not technically or economically feasible.

3.7.10 Alternative 14: Additional Transformer Capacity at Vista Substation

Description

Alternative 14 would involve expanding Vista Substation with the addition of a third 230/69-kV transformer bank at the substation. Refer to Figure 3.7-2 for the location of Vista Substation.

Rationale for Elimination

Alternative 14 was eliminated from full consideration in this Subsequent EIR because it does not meet the basic project objectives.

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3.7.11 Alternative 15: Additional Transformer Capacity at Mira Loma Substation

Description

Alternative 15 would involve expanding the Mira Loma Substation by adding a fourth 230/69-kV transformer bank at the substation. The location of the Mira Loma Substation is shown on Figure 3.7-2.

Rationale for Elimination

Alternative 15 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives.

3.7.12 Alternative 16: Expansion of RERC Electrical Generation Capacity

Description

Alternative 16 would involve expanding electrical generation capacity at RERC. RERC currently has a generating capacity of 192 MWs. Expansion of the RERC facility may require expanding the footprint of the RERC to accommodate another gas-fired power plant. The location of RERC is shown on Figure 3.7-2.

Rationale for Elimination

Alternative 16 does not meet project objectives or the regulatory feasibility criteria because the power generation at RERC is regulated by SCAQMD, and the existing power generation has operational restrictions due to the poor air quality in the basin. It would not be feasible to add more gas-fired power generation in the area due to air quality restrictions.

3.7.13 Alternative 17: Expansion of Electrical Equipment at Mountain View Substation

Description

Alternative 17 would involve adding transformer capacity at the Mountain View Substation, which is managed by RPU. The location of the Mountain View Substation is shown on Figure 3.7-2.

Rationale for Elimination

Alternative 17 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives.

3.7.14 Alternative 18: Shift Load at Vista Substation

Description

Alternative 18 would shift the RPU load to Vista Substation transformers to free up capacity on transformer banks 1A and 2A. The location of the Vista Substation is shown on Figure 3.7-2.

Rationale for Elimination

Alternative 18 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives.

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3.7.15 Alternative 19: Additional Generation

Description

Alternative 19 would involve the construction of additional RPU power plants in the City of Riverside. This alternative is substantially similar to Alternative 16; however, the alternative is not physically limited to the RERC area. This alternative could include additional power generation anywhere within RPU's territory.

Rationale for Elimination

Alternative 19 would not meet the regulatory feasibility criteria. The existing gas-fired generation in the Riverside area has operational limitations due to air quality restrictions in the SCAQMD air permit. It is not feasible to permit substantial additional gas-fired generation in the basin.

3.7.16 Alternative 20: Use of Internal RPU Generation

Description

Alternative 20 would use existing RPU generation during peak periods to mitigate high loading on the Vista transformers.

Rationale for Elimination

Alternative 20 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives. This alternative is part of the baseline condition and No Project Alternative.

3.7.17 Alternative 21: Distributed Generation

Description

Alternative 21 would involve deployment of distributed (less than 20 MW) renewable energy projects within the City of Riverside. The Revised Project is needed to supply at least 557 MW of energy to offset the loss of the transmission line from Vista Substation to RPU, and at least 140 MW of power to meet current demand and expected load growth. This alternative would require at least 28 separate renewable energy projects at 20 MW each to provide the level of energy generation comparable to the Revised Project. Distributed generation is electricity production that is on site or close to the load center that it is intended to serve. Distributed renewables refer to the use of renewable energy resources in distributed energy generation. The generating capacity of a distributed generation source is significantly smaller than those of centrally located utility-scale energy generation sources, and can range from generation at a single residence to larger installations for commercial or multi-unit housing applications.

Rationale for Elimination

Small-scale distributed renewable generation, such as rooftop solar panels, has the potential to appreciably reduce demand on the electrical system; however, Alternative 21 could not be feasibly deployed at a scale equivalent to the project. The alternative was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives.

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3.7.18 Alternative 22: Energy Efficiency and Conservation

Description

Alternative 22 would implement programs to increase energy efficiency and conservation to reduce system loading and demand for power. Energy efficiency is using less energy to perform the same service or task. Energy conservation is the act of reducing, or going without a service or task, to save energy. For example, turning off a light is energy conservation; replacing an incandescent light bulb with a different type of light bulb that uses less energy to produce the same amount of light, is energy efficiency. Both conservation and efficiency can reduce the amount of energy used.

Energy efficiency and conservation programs are designed to reduce customer energy consumptions. CPUC regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest-cost resources. These programs are designed to either reduce the overall use of energy, or to shift the consumption of energy to off-peak times. Programs include the installation of high-efficiency appliances (e.g., efficient heating and cooling systems, and energy efficient lighting), the installation of insulation and weatherization, and customer behavior changes (e.g., customers that turn off lights more frequently because of increased customer awareness of their electrical usage).

Rationale for Elimination

Alternative 22 was eliminated from consideration in this Subsequent EIR because it would not be implemented at a scale that would achieve the basic project objectives.

3.7.19 Alternative 23: Demand Response

Description

Demand response is end-use electric customers reducing their electricity usage in a given time period, or shifting that usage to another time period in response to a price signal, a financial incentive, an environmental condition, or a reliability signal. Demand response is among the CPUC's top energy priorities because it provides numerous economic and environmental benefits for California ratepayers.

Demand response enables utilities to avoid building new power plants that are used only during the peak hours of the day (typically late afternoon to early evening). Building and operating plants that are used only on occasion (also known as "peaker plants") is expensive, and those costs are eventually passed on to utility ratepayers. Demand response also enables utilities to avoid purchasing high-priced wholesale energy by reducing the demand for that energy at particular times of the day. Wholesale energy costs are also eventually passed on to ratepayers. To the extent that those costs can be lowered by demand response, ratepayers benefit. Demand response also provides system and local reliability benefits, because they enable utilities to avoid the use of rolling blackouts when there is not enough generation to satisfy demand. Finally, demand response provides environmental benefits by enabling the utilities to avoid the use of peaker plants. Peaker plants typically have higher greenhouse gas

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and other criteria pollutant emissions. Demand response also has the potential to integrate more renewable energy (wind, solar, etc.) into the grid.

Rationale for Elimination

Alternative 23 was eliminated from consideration in this Subsequent EIR because it does not meet the basic project objectives.

3.7.20 Alternative 24: Consolidate the RTRP and Circle City Project, and Consolidate the Valley – Ivyglen and Alberhill Substation Projects

Description

Alternative 24 would involve consolidation of multiple SCE projects. The alternative would include construction of the 220/66-kV Circle City Substation in the City of Corona. Mira Loma Substation would be connected to the Circle City Substation with approximately 10 miles of 220-kV line that would be located within existing and new ROW. Circle City Substation would supply power to Corona, Pedley, Data Bank, Chase, Jefferson, Cleargen, and Delgen Substations, and provide part of RPU's load. This alternative would also include construction of the Alberhill 500/115-kV Substation, looping the substation in to the Valley – Serrano 500-kV line. The Alberhill Substation would supply power to the five 115-kV Substations (Ivyglen, Fogarty, Elsinore, Skylark, and Newcomb). The Alberhill Substation Project would eliminate the construction of the transmission line segment from Valley Substation to the tap point between Fogarty and Elsinore substations of the Valley – Ivyglen line. The locations of the Circle City and Alberhill Substations are shown on Figure 3.7-2.

Rationale for Elimination

Alternative 24 was eliminated from consideration in this Subsequent EIR because it does not meet any of the screening criteria. The alternative does not meet the basic project objectives, does not meet the regulatory feasibility criteria, and would result in substantially greater environmental impacts.

3.7.21 Alternative 25: Consolidate the Circle City, RTRP, Valley – Ivyglen, and Alberhill System Projects

Description

Alternative 25 would involve consolidating multiple SCE projects. The Alberhill 500/220/115-kV Substation would be constructed with a loop-in to the Valley – Serrano 500-kV line in unincorporated Riverside County, northwest of the City of Lake Elsinore. Alberhill Substation would supply power to five 115-kV substations (Ivyglen, Fogarty, Elsinore, Skylark, and Newcomb), as well as to the Circle City Substation in the City of Corona.

The alternative would also include the construction of the Circle City 220/66-kV Substation, which would be connected to Alberhill Substation with approximately 15 miles of 220-kV line. The connecting transmission line would be built within a new ROW along the I-15 freeway. The Circle City Substation would supply power to Corona, Pedley, Data Bank, Chase, Jefferson,

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Cleargen, and Delgen Substations, and would also provide part of RPU's load. The locations of the Circle City and Alberhill Substations are shown on Figure 3.7-2.

Rationale for Elimination

Alternative 25 was eliminated from consideration in this Subsequent EIR because it does not meet any of the screening criteria. The alternative does not meet the basic project objectives, does not meet the regulatory feasibility criteria, and would result in greater environmental impacts than the Revised Project.

3.7.22 Alternative 26: Modify the Circle City Project to Replace the Proposed Circle City, RTRP, Valley – Ivyglen, and Alberhill System Projects

Description

Alternative 26 involves modifying the Circle City Project in the City of Corona to replace a number of SCE projects. The alternative would construct Circle City Substation as a 220/115/66-kV Substation, and interconnect it to the Mira Loma Substation in the City of Ontario with approximately 11 miles of 220-kV lines using existing and some new ROW. Approximately 27 (17+10) miles of 115-kV lines along I-15 freeway would be constructed to connect Ivyglen and Fogarty 115-kV Substations to the Circle City 220-kV Substation.

Circle City Substation would supply power to the Corona, Pedley, Data Bank, Chase, Jefferson, Cleargen, and Delgen Substations, as well as provide part of the RPU's load. Circle City Substation would also supply power to the Ivyglen and Fogarty Substations. The location of the Circle City Substation is shown on Figure 3.7-2.

Rationale for Elimination

Alternative 26 was eliminated from consideration in this Subsequent EIR because it does not meet any of the screening criteria. The alternative does not meet the basic project objectives, does not meet the regulatory feasibility criteria, and would result in substantially greater environmental impacts.

3.7.23 Alternative 27: Deliver Subtransmission Power to Riverside from Multiple SCE Sources and Install Metering

Description

Under Alternative 27, SCE's existing 66-kV power line network surrounding Riverside would be used to provide power to Riverside. SCE would build points of interconnection to Riverside, and use metering to monitor power delivery from SCE to Riverside. This alternative would likely involve expansions at multiple SCE substations, such as Pedley (66-kV), Chase (66-kV), Lake Mathews (66-kV), Cajalco (115-kV), and Maxwell (66-kV). Additionally, multiple new distribution, and some 60-kV power lines, would be needed to tie-in the SCE system to the RPU system in a reliable manner. This alternative essentially integrates RPU load with the SCE system at lower voltages as opposed to the current arrangement of an isolated RPU with single or double tie-in (Proposed Project) to SCE.

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Rationale for Elimination

Alternative 27 was eliminated from consideration in this Subsequent EIR because it does not meet the regulatory feasibility criteria. The alternative could also result in greater environmental impacts depending on the location and extent of the interconnection points from SCE to RPU and the substation expansions required.

3.7.24 Alternative 28: Lower Voltage Alternative A – Single Source

Description

Alternative 28 would supply electricity from SCE's Mira Loma Substation to Riverside as a single substation interconnection point. The initial design for this alternative includes installation of two additional 230/69-kV 280-MW transformers at Mira Loma Substation with a total capacity of 560 MW. A third 230/69-kV 280-MW transformer could be added in the future for a total capacity of 840 MW. Seven 69-kV circuits would be installed from Mira Loma Substation to Riverside. The Alternative 28 design includes three double-circuit 69-kV structures and one single-circuit 69-kV line for a total of seven 69-kV circuits. Seven 69-kV circuits are needed to have enough line capacity to meet project objectives using emergency condition ratings under single-contingency events. In the event of a single contingency event (for example, unplanned outage of two 69-kV circuits due to a single double-circuit structure failure either overhead or underground) that would remove two 69-kV circuits from service, the remaining five in-service 69-kV circuits would operate at their emergency ratings for a total of 840 MW of capacity (five 69-kV circuits at 168 MW).

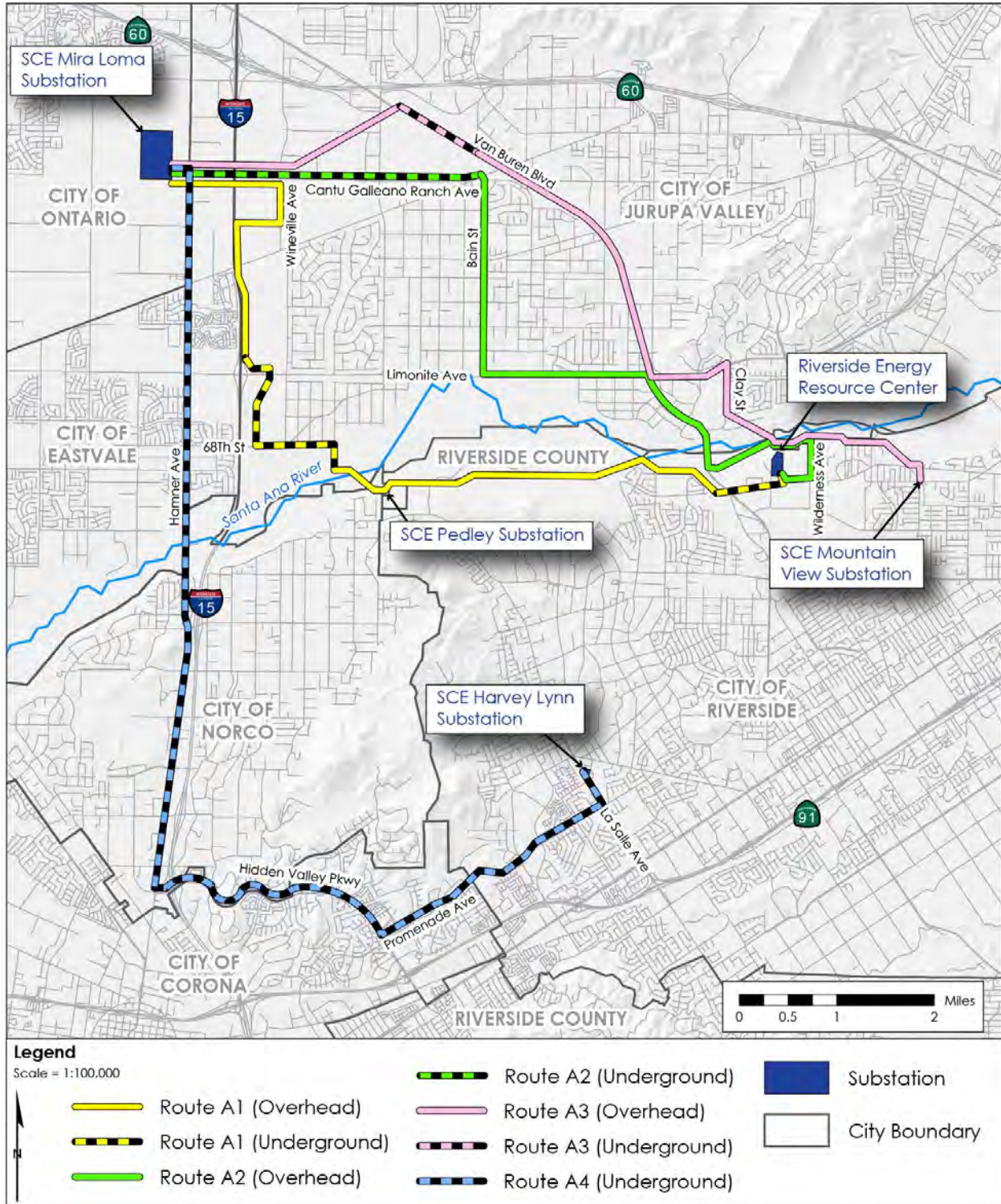
The Alternative 28 design consists of four routes (A1, A2, A3, and A4) from Mira Loma Substation to the Riverside service territory that include both overhead and underground lines as shown on Figure 3.7-3. The alternative includes a total of 44 miles of new power line, as shown in Table 3.7-1. Routes A1, A2, and A3 would terminate at a new Riverside 69-kV switching station located adjacent to Riverside's RERC facility. This location was selected for the RTRP Wildlife and Wilderness Substations and would be suitable for Alternative 28. Route A4 would terminate at Riverside's Harvey Lynn Substation.

Rationale for Elimination

Alternative 28 would conflict with substation planning criteria, would be more expensive, and would require more time to implement than the Revised Project. The alternative does not meet the environmental screening criteria because it would result in greater environmental impacts than the Revised Project due to the additional 34 miles of new power line.

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Figure 3.7-3 Lower Voltage Alternative A



Source: (City of Riverside and Southern California Edison, 2018)

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Table 3.7-1 Alternative 28 - New 66 kV Power Line Segments

Alternative Segment	Overhead (miles)	Underground (miles)
A1	7.8	2.7
A2	7.7	2.1
A3	9.1	1.0
A4	0.3	13.3
Total	24.9	19.1

Source: (City of Riverside and Southern California Edison, 2018)

3.7.25 Alternative 29: Lower Voltage Alternative B – Three Sources

Description

Alternative 29 would modify the design for a proposed SCE distribution substation (Circle City) to add a 230-kV interconnection and 230/69-kV transformer. A double-circuit 69-kV power line would be installed between Circle City Substation and Freeman Substation. Alternative 29 would also require new double-circuit 69-kV power lines to interconnect between Mira Loma Substation and Harvey Lynn Substation, and Mountain View Substation and Etiwanda Substation. A single circuit would be installed between Kaiser Substation and Harvey Lynn Substation. Alternative 29 would add seven 69-kV circuits to Riverside.

Alternative 29 would also require the construction of a new 230-kV transmission line feed to the proposed Circle City Substation similar to the 230-kV line included in the Revised Project. The 230-kV feed necessary for Alternative 29 is not included in the currently proposed plan for the Circle City Substation. The 230-kV interconnection to Circle City Substation would be a minimum of 2 miles longer than the 230-kV line included in the Revised Project. An alignment and detailed design for the 230-kV interconnection to the Circle City Substation has not been developed. The discussion of potential environmental impacts from Alternative 29 includes typical impacts to be expected from installation of a 230-kV transmission line and level of magnitude of those impacts for comparison to the Revised Project.

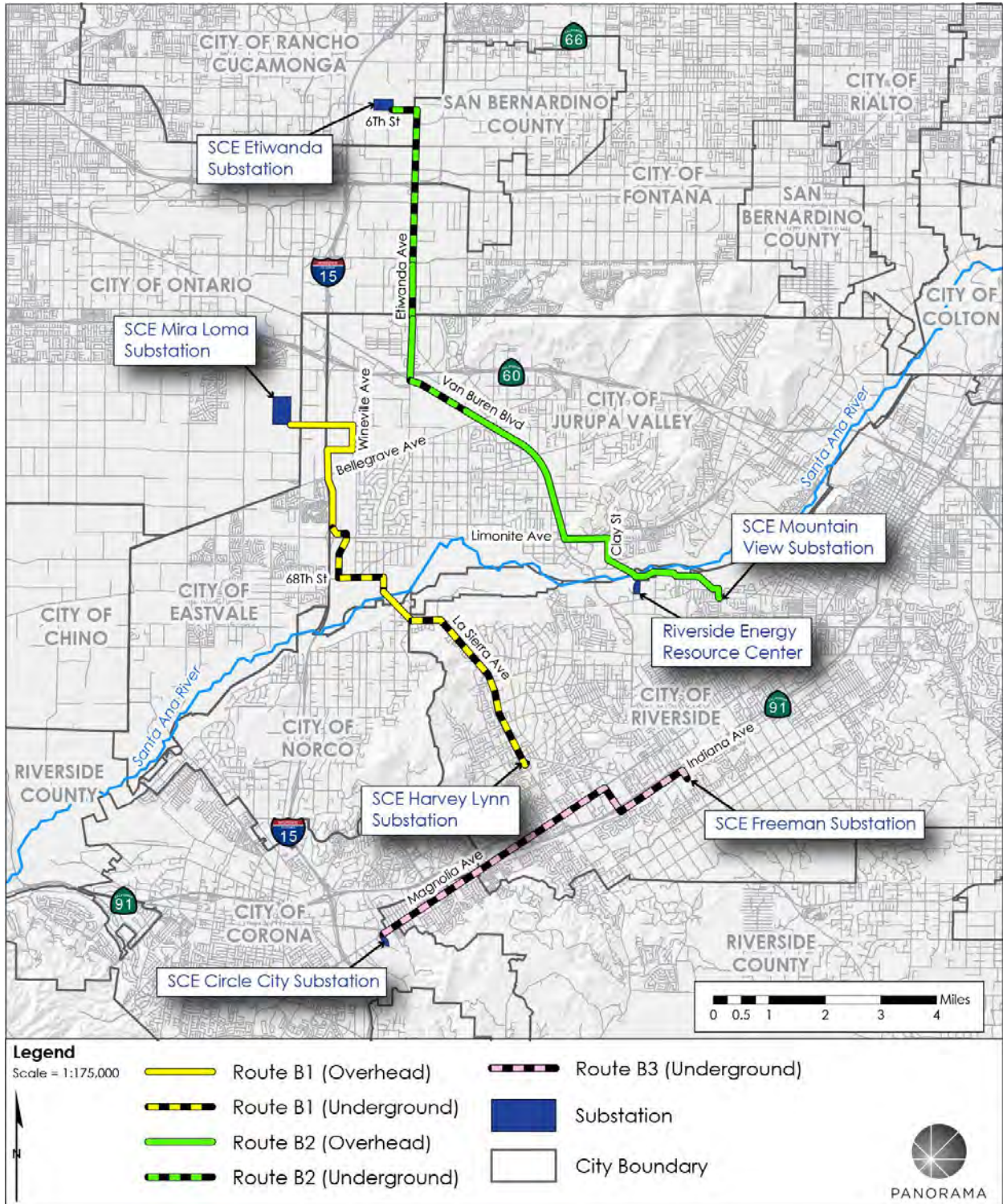
The location of the Alternative 29 additional power line segments is shown on Figure 3.7-4. Alternative 29 would require approximately 30 miles of new 66-kV power line and more than 11 miles of new 230-kV transmission line.

Rationale for Elimination

Alternative 29 does not meet technical or regulatory feasibility criteria and would be financially infeasible. The alternative would result in greater impacts than the Revised Project and would not meet the environmental screening criteria due to the installation of a longer 230-kV transmission line and approximately 30 miles of new power lines, which would result in greater environmental impacts than the Revised Project.

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Figure 3.7-4 Lower Voltage Alternative B



Source: (City of Riverside and Southern California Edison, 2018)

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3.7.26 Alternative 30: Lower Voltage Alternative C – Single Source with Solar PV and Battery Energy Storage

Description

Alternative 30 would provide electrical power from a single 230/69-kV substation (Mira Loma) source with two double-circuit 69-kV lines to Riverside in the same locations as routes A1 and A2 in Alternative 28, above. The locations of these two circuits are shown on Figure 3.8-1. Alternative 30 would include the installation of a total of 20.3 miles of new power lines. The total firm delivery capacity from SCE to Riverside under Alternative C would be 500 MW. Large-scale utility solar generation, including battery storage, would provide up to 60 MW of non-firm capacity. This would bring the total capacity of Alternative C to 560 MW, but the additional 60 MW would provide substantially less capacity than its rated capability for serving load and for peak shaving purposes.

Rationale for Elimination

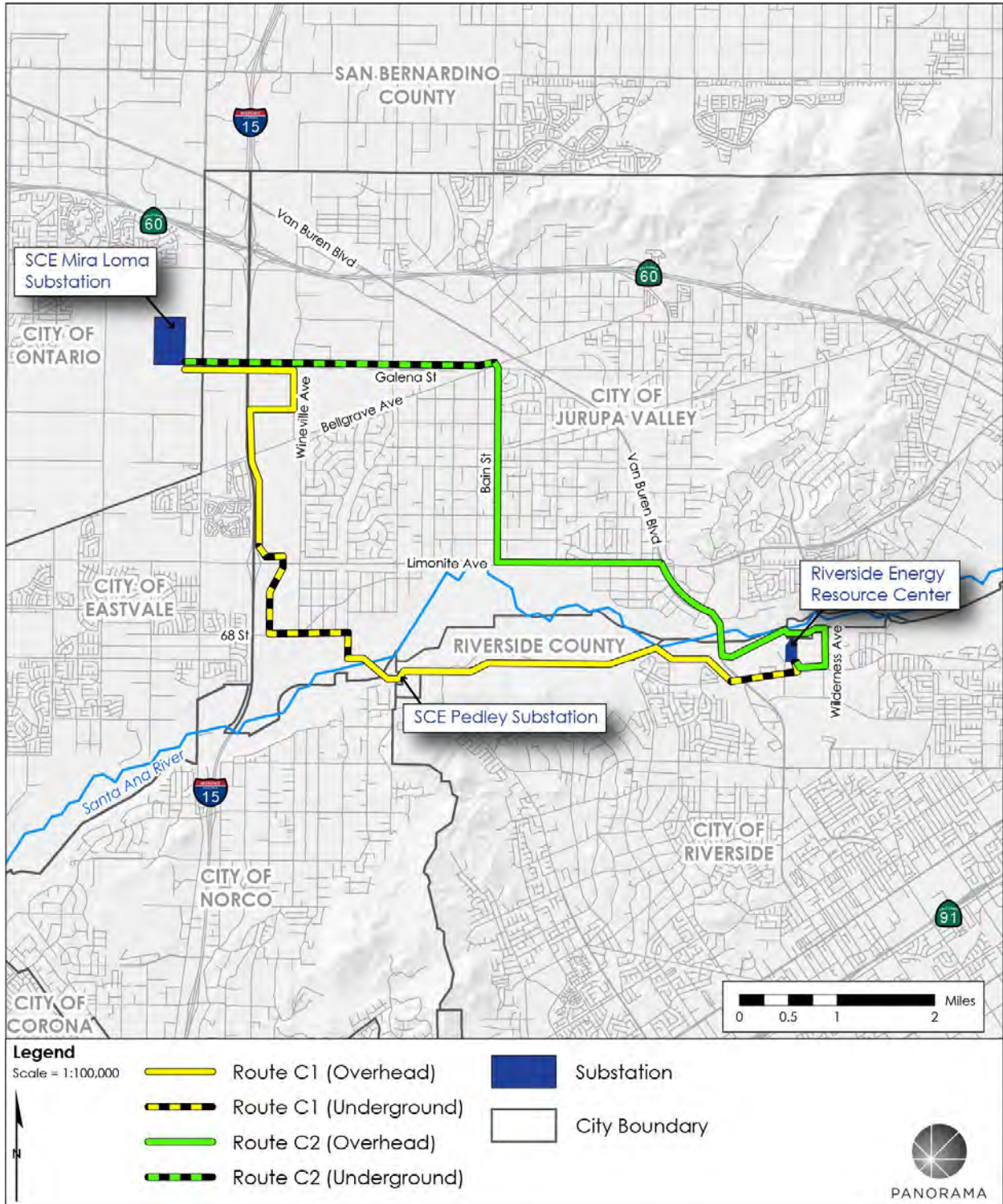
Alternative 30 does not meet the regulatory feasibility criteria because it would require substantial time to permit the additional power line segments, solar PV, and battery energy storage system. Alternative 30 would not meet the environmental screening criteria due to the increased length of required power lines and the need for a solar PV and battery energy storage system, which would result in greater environmental impacts than the Revised Project.

3.8 REFERENCES

- Caltrans. (2013). Encroachment Permits Manual. *Exceptions to Policy*. Retrieved from http://www.dot.ca.gov/trafficops/ep/docs/Chapter_3.pdf
- Citizens of Goleta Valley v. Board of Supervisors of Santa Barbara, 197 (California Court of Appeals 3d 1167 January 22, 1988).
- City of Riverside and Southern California Edison. (2018). *Riverside Transmission Reliability Project (A.15-04-013) Lower Voltage and Other Design Alternatives Report*. RPU and SCE.

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Figure 3.8-1 Lower Voltage Alternative C



Source: (City of Riverside and Southern California Edison, 2018)