June, 2010

RIVERSIDE TRANSMISSION RELIABILITY PROJECT

Traffic Technical Report

PROJECT NUMBER:
111728 / 111734

PROJECT CONTACT:
Mike Strand
EMAIL:
mstrand@powereng.com
PHONE:
(714) 507-2710

POWER ENGINEERS

Traffic Technical Report

PREPARED FOR:
RIVERSIDE PUBLIC UTILITIES
3901 ORANGE STREET
RIVERSIDE, CA 92501

PREPARED BY:
POWER ENGINEERS, INC.
731 EAST BALL ROAD, SUITE 100
ANAHEIM, CA 92805

KOA CORPORATION
3190 C SHELBY STREET
ONTARIO, CA 91764

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1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

In 2004, pursuant to Southern California Edison's (SCE) Federal Energy Regulatory Commission (FERC)-approved Transmission Owner (TO) Tariff, Riverside Public Utilities (RPU) submitted a request for SCE to provide additional transmission capacity to meet projected load growth and to provide for system reliability. SCE determined that in order to meet RPU's request, SCE should expand its regional electrical system to provide RPU a second source of transmission capacity to import bulk electric power. This would be accomplished by creation of a new SCE 230 kilovolts (kV) transmission interconnection, the construction of a new SCE substation, the construction of a new RPU substation, and the expansion of the RPU 69 kV subtransmission system. The proposed Project, called the Riverside Transmission Reliability Project (RTRP), would provide RPU with long-term system capacity for load growth, and needed system reliability and flexibility.

The additional transmission capacity to RPU would be available through the proposed SCE Wildlife Substation at 230 kV and then transformed to 69 kV for integration into the RPU electrical system serving the City of Riverside (City). The transformation or "stepping down" of power from 230 kV to 69 kV would take place at the proposed RPU Wilderness Substation. Wilderness and Wildlife Substations would be located adjacent to each other on property that is presently owned by and within the City.

In order to integrate the additional transmission capacity into RPU's electric system, RPU's 69 kV system would be expanded and divided into eastern and western systems. The existing source of energy from Vista Substation would continue to supply the eastern system, while the western system would be supplied through the proposed Wilderness Substation. Creating two separate 69 kV subsystems is necessary for prudent electric utility operation and would also help provide the required level of emergency back-up service, particularly in the event of an interruption to either 230/69 kV substation source.

Several new double-circuit 69 kV subtransmission lines would need to be constructed between 69 kV substations within the City. To accommodate these new subtransmission lines, upgrades would be required at four existing RPU 69 kV substations. The upgrades would take place within the existing boundaries of each substation.

New fiber optic communications would also be required for system control of Wilderness and Wildlife Substations and associated 69 kV and 230 kV transmission lines. The 69 kV communication facilities would be incorporated into the existing RPU fiber optic network. The 230 kV communications would meet SCE's reliability standards.

1.2 TRAFFIC AND TRANSPORTATION OVERVIEW

This report documents the traffic analysis prepared by KOA Corporation to assess the traffic impacts of the proposed RTRP, to be constructed along multiple candidate corridors within Riverside County. This technical report was developed as a supporting document to the Draft Environmental Impact Report (DEIR) required under the California Environmental Quality Act (CEQA) for the Proposed Project. It includes analysis of environmental impacts associated with both the Proposed Project (sometimes referred to as the I-15 Route or Build Option B) and the 230 kV Van Buren Offset Route alternative (sometimes referred to as Build Option A). The report was completed prior to refinement of the Proposed Project and may contain outdated component identification information (e.g., segment, line, link identifiers) that may differ in description in the DEIR. Although this document is a standalone report, it is intended to be included in the DEIR being prepared by POWER Engineers, Inc (POWER) for the City of Riverside.

The purpose of the traffic study is to inventory the local transportation network and to assess the potential traffic impacts associated with each of the proposed 230 kV transmission line routes, 69 kV subtransmission line, proposed substations, substation upgrades, and fiber optic communications. The analysis of traffic impacts summarized within this document will: 1) present the applicable agency guidelines and requirements, 2) provide an overview of the technical methodology used in collecting baseline characteristics of major roadways and evaluating impacts, 3) examine the affected environment within the study corridors and vicinity, where appropriate, 4) describe the potential impacts on transportation networks and modes from construction and operation of the project, 5) evaluate the level of potential impacts based upon local agency guidelines and policies and the general potential for impacts based on sensitivity ratings, and 6) present specific and general recommended mitigation measures for the reduction of potential impacts.

1.3 PROJECT LOCATION

The Project area is located in the western and northern sections of the City of Riverside and extends north into unincorporated areas of western Riverside County. The Project area is bordered to the north by State Highway 60 and the existing Mira Loma to Vista SCE Transmission Lines to the west by Interstate 15, and to the south and east by State Highway 91. The Santa Ana River roughly divides the Project area into northern and southern halves.

1.4 PROJECT COMPONENTS

The RTRP project components would be located within Riverside County. Overall, the proposed RTRP would require approximately one year (with workers working 10-hour days, five days a week) to construct. The proposed RTRP includes the following:

1. Construction of approximately 10 miles of new double-circuit 230 kV transmission line from the existing Mira Loma – Vista #1 Transmission Line to the proposed Wildlife Substation;
2. Construction of approximately 11 miles of new 69 kV subtransmission lines between 69 kV substations and other existing subtransmission lines within the City of Riverside:
   - Wilderness – Jurupa double-circuit subtransmission lines
   - RERC – Harvey Lynn/Freeman single- and double-circuit subtransmission lines
   - Wilderness – Mountain View double-circuit subtransmission line
3. Construction of two new substations (Wilderness and Wildlife);
4. Upgrade of two 230 kV substations to replace line protection relays (within existing control houses): Mira Loma and Vista;
5. Upgrade of four substations to conduct minor pole re-alignments: Harvey Lynn, Mountain View, Freeman, and RERC; and
6. New fiber optic communications for system control of Wildlife and Wilderness substations and associated 230 kV transmission and 69 kV subtransmission lines.

The Proposed Project adds a new source of transmission capacity to the City by construction of a new double-circuit 230 kV transmission line that would extend from the existing Mira Loma – Vista #1 230 kV Transmission Line to the proposed Wildlife Substation. This new double-circuit 230 kV transmission line would provide additional capacity to the City by interconnecting at the proposed Wildlife Substation, which would be constructed, owned and operated by SCE. To transfer increased capacity to the City, the proposed RPU-owned Wilderness Substation would be constructed immediately adjacent to Wildlife Substation and would transform or "step down" power from 230 kV to 69 kV.

With SCE providing a second point of delivery for bulk power to the City of Riverside's electrical system, RPU would split its 69 kV subtransmission system into an eastern system served from the

existing Vista Substation and a western system served from Wilderness Substation. To facilitate this, several 69 kV subtransmission lines would be constructed within the City by adding circuits to existing routes or through the construction of new lines. Upgrades would be made at various existing RPU substations, as well.

1.4.1. Construction of New 69 kV Subtransmission Line

The proposed Project would include construction of approximately 11 miles of 69 kV sub-transmission lines located in three discrete sections of RPU's subtransmission system. Within two of these system sections, new lines would consist of multiple subtransmission lines in some segments or would be installed on shared subtransmission poles in others. The proposed new lines include Wilderness – Jurupa Avenue (Segments A and B); RERC – Harvey Lynn/Freeman (Segments A, B, and C); and Wilderness – Mountain View. Construction of the 69 kV subtransmission line component of the Project would require the following tasks:

- Surveying;
- Setting up Marshalling Yards;
- Construction Inspection;
- Foundations;
- Steel (Hauling, Assembly, and Erection);
- Wreck-Out (Conductors and Structures);
- Guard Poles;
- Conductor Installation;
- Transfer Existing Facilities;
- Possible Underground Activities (RERC – Harvey Lynn/Freeman segment only);
- Transmission Pole Installation Activities;
- Conductor Installation; and
- Clean-Up

Most sections of the new 69kV subtransmission lines would be installed on existing ROW and would not require new access road construction, although many of the existing structures would be replaced as part of construction. Subtransmission line steel poles would be a mix of direct-embedded poles and poles requiring foundation construction.

Wilderness – Jurupa Avenue

Segments A and B

Segments A and B are proposed to consist of a double-circuit 69 kV subtransmission line constructed from the proposed Wilderness Substation to the existing double-circuit 69 kV subtransmission line located along Jurupa Ave. and originating from RERC Substation. The double-circuit lines would exit Wilderness Substation to the south and would be constructed along both sides of Wilderness Ave. within public rights-of-way. Segment A would be located on the west side of Wilderness Ave. to Jurupa Ave. and Segment B would be located on the east side of Wilderness Ave. to Jurupa Ave. Both lines would then interconnect to the existing 69 kV double-circuit line. Total length of Segment A would be 1,647 feet, and Segment B 1,588 feet.

RERC – Harvey Lynn/Freeman

Subtransmission lines would be needed as part of the Project to connect the RERC Substation to both Harvey Lynn and Freeman Substations. The subtransmission lines would be single-circuit connections

between the substations but would be constructed utilizing both double-circuit and single-circuit poles. The descriptions of these subtransmission lines are described below within Segments A, B, and C.

Segment A

Segment A would be constructed with double-circuit 69 kV poles that would carry both the RERC – Harvey Lynn and RERC – Freeman 69 kV subtransmission lines. From RERC Substation, Segment A would cross over the southern perimeter of the Riverside Water Quality Control Plant and then proceed south on Acorn Ave and west on Jurupa Ave. At the intersection of Jurupa Ave. and Van Buren Blvd., Segment A would continue south along Doolittle Ave. and then Van Buren Blvd. to Arlington Ave, where it would head west for approximately one mile. At the intersection of Arlington Ave. and Rutland Ave., Segment A would turn south and then west on Cypress Ave. to Crest Ave. continuing south along Crest Ave. At the intersection of Crest and Wells Avenues, the line would follow Wells to the intersection of Wells Ave. and Tomlinson Ave., following Tomlinson for a short distance before turning southwest onto Mull Ave. and continuing to the intersection with Tyler St. At this intersection, Segment A ends by "splitting" the circuits into two separate single-circuit subtransmission lines (Segments B and C as described below). The total length of the RERC-Harvey Lynn/Freeman Segment A would be 4.4 miles.

Segment B

Segment B consists of a single-circuit 69 kV subtransmission line beginning from the intersection of Mull Ave. and Tyler St. Segment B would continue southwest along Mull Ave., continue southwest along Mull Ave., then northwest on Mobley Ave., and then south along Jones Ave. At the intersection of Jones Ave. and Cook Ave., Segment B would join an existing single-circuit 69 kV subtransmission line and would be placed on double-circuit poles continuing to Hiers Ave., where it would leave the existing 69 kV line, and then rejoin it along Minnier Ave., continuing to Harvey Lynn Substation. This segment would have a length of 1.5 miles.

Segment C

Segment C would begin at the same intersection as Segment B (Mull Ave. and Tyler St.). The single-circuit subtransmission line would continue south along Tyler St. on single-circuit poles to the intersection of Tyler St. and Magnolia Ave. From this location, Segment C would join with an existing 69 kV subtransmission line onto new double-circuit poles. Segment C would then continue south along Tyler St. and then east along Indiana Ave. into Freeman Substation. To extend from the end of Segment A to Freeman Substation, Segment C would have a length of 3.2 miles.

Wilderness – Mountain View

One double-circuit 69 kV subtransmission line would be constructed from the proposed Wilderness Substation to an existing 69 kV line adjacent to Mountain View Substation. The new double-circuit line would exit Wilderness Substation and parallel the Santa Ana River eastward for approximately 1,000 feet, and then travel along Industrial Avenue to the west side of the Union Pacific railroad corridor and near Martha McLean Anza Narrows Park. The line would then head southeast, parallel to but outside of the railroad right-of-way, and then east parallel to Jurupa Ave., to the connection point with the existing 69 kV subtransmission line near Mountain View Substation. This new 69 kV subtransmission line would have a length of 1.4 miles.

1.4.2. Construction of New 230 kV Double-Circuit Transmission Line

The proposed Project would include construction of approximately 10 miles of 230 kV transmission line. The 230 kV transmission line component of the Project would require the following construction tasks:

- Surveying;
- Setting up Marshalling Yards;
- Right-of-Way Clearing;
- Road and Landing Work;
- Guard Structure Installation;
- Install Tubular Steel Pole (TSPs) Foundations;
- TSP - Hauling, Assembly, and Erection;
- Install Lattice Steel Towers (LSTs);
- LST - Hauling, Assembly, and Erection;
- Conductor Installation;
- Guard Structure Removal; and
- Restoration

Under the Proposed Project, new double-circuit 230 kV transmission line would be constructed that would "loop" the existing Mira Loma – Vista #1 230 kV Transmission Line into the proposed Wildlife Substation. The "loop" would be created by connecting each of the new circuits into the existing single-circuit line between Mira Loma and Vista Substations. The interconnection would occur at approximately the point where the Mira Loma – Vista #1 Transmission Line crosses Wineville Avenue, east of Interstate 15. From here, the new double-circuit line would run south and then west to roughly follow I-15 south, cutting east at 68th Street to a Santa Ana River crossing point within Goose Creek Golf Course. It would then continue east, mostly within the City of Riverside and parallel to the Santa Ana River. In some locations, the line would cross into the Hidden Valley Wildlife Area. Eventually the line crosses over Van Buren Boulevard, and then through the City of Riverside Water Quality Control Plant, before reaching the proposed Wildlife Substation on the south side of the Santa Ana River, east of Wilderness Avenue.

Temporary marshalling yards would be needed along or near the proposed transmission lines for construction crews to store materials and vehicles. Access to structure sites for construction and maintenance would be required at several locations along the corridors. Access work, which would take place primarily within the ROW, would consist of making improvements to existing roads, constructing new roads, and constructing spurs to individual structure sites.

Most new permanent access roads are proposed for construction on previously disturbed areas. Any temporary roads constructed would be removed, and the ground would be restored to its original contour when the line is completed. Land rights, usually easements, for access roads would be acquired from property owners as necessary. After the line is built, access roads would also be used for line maintenance. Subtransmission lines are located along or within existing public road ROWs and would not require new access road construction.

The ROW would not be de-vegetated; however, limited cutting of trees and tall brush in the ROW may occur if they interfere with the construction, operation, and maintenance of the transmission line. Trees would be cut outside the ROW only if, due to their height and condition, they may pose a threat to the transmission line. All potential tree cutting within the City of Riverside would require approval by the City's Public Works Department.

Steel structures for the 230 kV transmission lines would be anchored to the ground with concrete footings. Typically, the footing site is excavated, a steel cage and anchor plates or bolts are positioned, and the excavated site is filled with formed concrete. Structures are assembled at the site and lifted into place by a large crane. Drilling mud will be used for wet holes. The structures are bolted to the footings after they are set in place. After transmission structures are in place, conductors are strung from structure to structure through pulleys. Subtransmission line wood poles would be direct-embedded and would not

require foundation construction. Subtransmission line steel poles would be a mix of direct-embedded poles and poles requiring foundation construction.

1.4.3. Construction of New Substations

The proposed Project would also include construction of one 230/69 kV substation (Wilderness Substation) and one 230 kV switching station (Wildlife Substation). The proposed substations would require the following construction tasks:

- Surveying;
- Setting up Marshalling Yards;
- Grading;
- Civil Engineering Activities;
- Electrical Engineering Activities;
- Transformer Activities (69 kV only);
- Paving Activities;
- Fencing Activities; and
- Testing Activities

Wilderness Substation

The new RPU 230/69 kV Wilderness Substation would be located on 6.4 acres adjacent to the southern end of SCE's Wildlife Substation. Wilderness Substation would be connected to the SCE Wildlife Substation via two short 230 kV transmission line spans over a separating fence between the two substations. The voltage would be transformed to 69 kV through two transformers located within the Wilderness Substation. Electricity would be delivered to the RPU electrical system and ultimately City customers via 69 kV subtransmission lines exiting the substation. As described above, Wilderness Substation would be separated from the Wildlife Substation by a chain link fence. The outside perimeter of the substation would be built with a 10-foot block wall. The anticipated construction duration for the 230/69 kV Wilderness Substation is approximately 125 working days (6.3 months).

Wildlife Substation

The SCE Wildlife Substation would be constructed on three acres of land currently owned by RPU and located near the northeast corner of Wilderness Avenue and Ed Perkic Street. This area is within the City limits. If the Project is approved, SCE would purchase property from RPU to accommodate the new Wildlife Substation. The proposed substation would connect to the SCE system via the proposed double-circuit 230 kV transmission line described above, and would also connect into RPU's proposed adjacent Wilderness Substation. The proposed substation would be enclosed on three sides by a ten-foot high perimeter wall typically constructed of light-colored decorative blocks, with the fourth side being the shared chain-link fence separating Wildlife Substation from Wilderness Substation.

1.4.4. 69 kV Substation Upgrades

To accommodate the new subtransmission lines to be added to the RPU 69 kV system, upgrades would be required at four existing RPU 69 kV substations. Upgrades would include minor structure (pole) re-alignments outside of substations to accommodate modifications of substation layout. All other upgrades would take place within the existing boundaries of each substation.

The four existing 69 kV substations within the City that would require upgrades are Harvey Lynn, Mountain View, Freeman, and RERC. The upgrades consist of the addition of new 69 kV power circuit breakers and associated disconnect switches and busing at RERC and Harvey Lynn Substations, as well

as protective relay and control modifications to all four substations. All substation upgrades and equipment installations would occur within the existing footprint.

- **Harvey Lynn Substation.** The substation would be upgraded to include a new 69 kV circuit breaker and associated equipment to form a new line position for relocation of the existing Freeman line. The existing Freeman line position would be reconfigured to terminate a new line to RERC Substation. New line protection would be installed for both the new and reconfigured lines. A new Substation Automation System (SAS) and digital fault recorder would be integrated into the new and existing equipment.

- **Mountain View Substation**. The substation would be reconfigured to add two new lines to Wilderness Substation. One line would terminate in the existing Riverside line position and the other in the existing Freeman line position. New line protective relaying would be included for the two new Wilderness lines.

- **Freeman Substation.** The substation modifications would include changing the existing Mountain View line into the new Wilderness line and adding a new line to the RERC switchyard. A line bypass switch would be installed to directly connect the Orangecrest and Riverside lines and bypass the Freeman Substation. The Orangecrest line termination would be disconnected and the new RERC line would be terminated in its place. New line protection would be added for the relocated line and the one new line. A new SAS and digital fault recorder would be integrated into the new and existing equipment.

- **RERC Substation.** Two new lines would be installed and connected to Harvey Lynn Substation and Freeman Substation. The two existing lines connected to Mountain View and Riverside Substations would be reconnected to Wilderness Substation.

1.4.5. 230 kV Substation Upgrades

Line protection relays would be replaced at both Mira Loma and Vista Substations as part of the Proposed Project. The relay replacements would be placed within existing control houses within each substation.

1.4.6. New Telecommunication Facilities

New fiber optic communications would be required for system control of Wildlife and Wilderness Substations and associated 230 kV transmission and 69 kV subtransmission lines. Communication facilities supporting RTRP 69 kV subtransmission components would be incorporated into the existing RPU fiber optic network. The communications facilities that would support the 230 kV transmission line would meet SCE's reliability standards and connect to the existing SCE network at multiple locations. The 230 kV communication facilities would require construction of diverse communication paths for operation and monitoring of the substation and transmission line equipment. The diverse paths would connect Wildlife Substation to Mira Loma Substation, and Wildlife Substation to Vista Substation. New telecommunication infrastructure would be installed to provide protective relay circuit, Supervisory Control and Data Acquisition (SCADA) circuit, data, and telephone services to Wildlife Substation. For the 69 kV portion of the Proposed Project, telecommunications lines would be installed on new or existing 69 kV subtransmission poles.

SCE Fiber Optic Lines

The Proposed Project would include three diverse fiber optic communication paths to connect to the existing SCE fiber optic network. These three paths would be required for the protective relay circuit between the proposed Wildlife Substation and Mira Loma Substation, for the protective relay circuit

between the proposed Wildlife Substation and Vista Substation, and the fiber optic communication path that would provide the SCADA circuit, data, and telephone services to the proposed Wildlife Substation. Approximately 3,900 total feet of telecommunications line would be installed in underground conduit.

Path 1: The first fiber optic path is OPGW (Optical Ground Wire) that is proposed for installation on the new 230 kV transmission line towers proposed for the Project and described above. This OPGW line would intercept and connect to the existing fiber wrap cable on OHGW (Over Head Ground Wire) on the Mira Loma – Vista 230 kV Transmission Line tower.

Path 2: A new ADSS (All Dielectric Self Supporting) fiber optic communication cable is proposed for installation on the existing SCE distribution structures between the existing Pedley Substation and the new Wildlife Substation, with a path length of approximately six miles. This new line would tie into the existing Mira Loma to Corona fiber optic communication line. A preliminary survey conducted in 2006 of the approximate 100 distribution poles in the existing ADSS fiber route between Pedley substation and the Wildlife site determined that no new poles would need to be added, and that no existing poles would need to be replaced. However, a final determination of the need for pole replacement will not be made until final engineering is completed. The fiber optic cable would enter into the Pedley and Wildlife Substations in an underground conduit that would be installed to the fence line of the substations for fiber optic cable entry. This construction method allows ADSS cables on the distribution line poles to be brought into the substations. The approximate length of the underground conduit would be 200 feet at Pedley Substation and 500 feet at Wildlife Substation. In addition, because of the proximity of the proposed new 230 kV transmission line to the existing SCE distribution line, three fiber optic cable path intersection locations would need to be placed underground for cable path reliability.

- The first proposed fiber cable crossing location would be located approximately 0.25 miles west of the Harrell Street and Etiwanda Avenue intersection under the existing Mira Loma – Vista 230 kV transmission line. The two cables at the crossing location would be: 1) the existing ADSS cable on the distribution line poles, and 2) the existing fiber wrap cable on Mira Loma – Vista 230 kV transmission line OHGW. An approximately 900-foot section of the existing ADSS fiber cable needs to be placed underground. For this diverse path, both (crossed) fiber cables would carry protection circuit to protect against the unlikely event that the circuit would fail as a result of the crossed fiber cables failing concurrently.

- The second proposed fiber cable crossing location would be located in an area south of the Santa Ana Regional Park, adjacent to residential areas along the proposed 230 kV transmission line route. The two intersecting fiber cables would be: 1) the proposed new Path 2 ADSS fiber route between Pedley Substation and new Wildlife substation, and 2) the Path 1 OPGW on the proposed 230 kV transmission line. An approximately 1,000-foot section of the proposed ADSS fiber cable would need to be placed underground in order to prevent single point failure for the circuit as a result of the crossing fiber cables.

- The third proposed fiber cable crossing location would be located in an area west of the proposed Wildlife Substation between Wilderness Avenue and Payton Avenue along the existing distribution line north of Jurupa Avenue. The two intersecting fiber cables would be: 1) the proposed new Path 2 ADSS fiber route between Pedley Substation and the new Wildlife substation, and 2) the Path 1 OPGW on the proposed 230 kV transmission line. An approximately 600-foot section of the proposed ADSS fiber cable would need to be placed underground in order to prevent single point failure for the circuit as a result of the crossing fiber cables.

- The fourth proposed fiber cable crossing location would be located approximately 500 feet southwest of Pedley Substation, close to Pedley Substation Rd. The two cables at the crossing

location would be: 1) the existing ADSS cable on the 12 kV pole line, and 2) the Path 1 OPGW on the proposed 230 kV transmission line. An approximately 400-foot section of the proposed ADSS fiber cable would need to be placed underground in order to prevent single point failure.

- The fifth proposed fiber cable crossing location would be located approximately 1000 feet west of Pedley Substation on the Lab 12 kV distribution pole line. The two cables at the crossing location would be: 1) the existing ADSS cable on the 12 kV pole line, and 2) the Path 1 OPGW on the proposed 230 kV transmission line. An approximately 300-foot section of the proposed ADSS fiber cable would need to be placed underground in order to prevent single point failure.

Path 3: The third SCE fiber optic line associated with the 230 kV portion of the Proposed Project would connect the new Wildlife Substation and a fiber demarcation point to the Vista Substation to meet the telecommunication diverse path requirements. SCE would lease fiber strands within the RPU fiber optic network to create this third telecommunication path. Existing and available fiber is in place for most of this pathway between Wildlife and Vista Substations. The new portion of this path would utilize planned RPU telecommunication fiber to be installed along proposed 69 kV subtransmission lines as described below.

RPU Fiber Optic Lines

As part of the proposed Project, the existing RPU fiber optic network would be extended approximately 2,000 feet from the intersection of Jurupa Avenue and Wilderness Avenue to the proposed Wilderness Substation. The new fiber optic cable would be installed on the new 69 kV subtransmission line poles described above that would be constructed along both sides of Wilderness Avenue (Wilderness – Jurupa Ave., Segments A and B). This new fiber optic line would connect the proposed Wilderness Substation to RPU's existing communication system. Additionally, a new fiber optic line would be included as part of the new Wilderness – Mountain View subtransmission line construction.

1.4.7. Construction Work Force and Schedule

Construction of the 230 kV components of the Project is scheduled to begin after the issuance to SCE of a Certificate of Public Convenience and Necessity (CPCN) by the California Public Utilities Commission (CPUC). The CPUC review of SCE's CPCN application, which would include the Final EIR, is expected to be completed within 12 months following the City of Riverside's CEQA Lead Agency determination for the Project. Construction activities associated with the Proposed Project consist of new 230 kV transmission line and 69 kV subtransmission line construction, building two new substations (Wildlife and Wilderness), and upgrading four existing 69 kV substations.

The estimated elements, number of personnel, and equipment required for construction of the proposed Western I-15 project (Build Option A) are summarized in Table 1: Construction Workforce Estimates. The estimated elements, number of personnel, and equipment required for construction of the proposed Van Buren project (Build Option B) are summarized in Table 2: Construction Workforce Estimates. Estimates for other project elements (69 kV subtransmission line and substation activities) are provided in Table 3. Because equipment and personnel estimates were provided at the route-level by SCE (rather than link-level), analysis was performed at this level as well. Link-level information is included wherever possible.

Project components would likely be constructed using a variety of construction crews. These would consist of successful competitively bid contractor(s) and subcontractors, SCE crews (230 kV transmission line, telecommunications, and Wildlife Substation only) or RPU crews (69 kV subtransmission lines, telecommunications, Wilderness Substation, 69 kV substation upgrades). RPU and SCE would be

responsible to provide quality assurance, environmental protection oversight, and final design approval. All construction work would be performed with conventional construction techniques in accordance with SCE and RPU construction specifications and other industry-specific standards. Construction crews would be required to work within the stipulations of documents governing compliance with regional environmental, storm water pollution prevention, and fire prevention criteria, as well as owner/operator best management practices, standardized environmental protection elements, and those additional mitigation measures identified within the DEIR.

1.5 CONSTRUCTION SCHEDULE

In general, construction efforts would occur in accordance with accepted construction industry and RPU and SCE standards. Construction activities would generally be scheduled during daylight hours, more specifically 6:00 a.m. to 6:00 p.m. (June to September) and 7:00 a.m. to 6:00 p.m. (October to May), Monday through Friday. In the event construction activities need to occur outside the local noise ordinance, SCE would obtain any variance as necessary from appropriate jurisdictions. All materials associated with construction efforts would be delivered by truck to established marshalling yards. Delivery activities requiring major street use would be scheduled to occur during off-peak traffic hours.

230 kV Components (SCE)

SCE anticipates that construction of the proposed 230 kV portion of the Proposed Project (which includes the transmission line, Wildlife Substation, and associated telecommunications work) would take approximately 370 working days. Construction would commence following CPUC and regulatory agency approval, final engineering, and procurement activities.

69 kV Components (RPU)

RPU anticipates that construction of components of the proposed 69 kV portion of the Proposed Project (which includes the subtransmission lines, Wilderness Substation, substation upgrades, and associated telecommunications work) could begin following publication of the Notice of Determination on the Final EIR by the RPU Board and Riverside City Council, including any conditions of approval and statements of overriding considerations (anticipated early 2012). Completion would be timed to synchronize completion date with the 230 kV portion of the Proposed Project, anticipated to be May 2015.

TABLE 1: CONSTRUCTION WORKFORCE ESTIMATES BY ACTIVITY—CONSTRUCT 230 KV T/L, BUILD OPTION A - WESTERN I-15 ROUTE

Work Activity		Activity Production	
Primary Equipment Description	**Estimated Workforce**	**Estimated Schedule (Days)**	**Estimated Production Per Day**
Survey (1)	4	10.5	**10.5 Miles**
Marshalling Yard (2)	4	Duration of Project	**Duration of Project**
R/W Clearing (3)	5	42	0.25 Mile/Day
Roads & Landing Work (4)	5	14	0.5 Miles/Day & 6 Structure Pads/Day **83 Pads**
Guard Structure Installation (5)	6	4	4 Structures/Day **16 Structures**
Install Tubular Steel Pole Foundations (6)	7	114	0.5 TSPs/Day **57 TSPs**
Steel Pole Haul (7)	4	15	4 Steel Poles/Day **57 TSPs**
Steel Pole Assembly (8)	8	30	2 Steel Poles/Day **57 TSPs**
Steel Pole Erection (9)	8	30	2 Steel Poles/Day **57 TSPs**
Install LST Foundations	9	48	0.50 LST/Day **24 LSTs**
LST Steel Haul	6	24	1 LST/Day **24 LSTs**
LST Steel Assembly	14	48	0.5 LST/Day **24 LSTs**
LST Erection	8	24	1 LST/Day **24 LSTs**
Install Conductor & OHGW/OPGW (10)	16	30	0.35 miles/day **10.5 Circuit Miles**
Guard Structure Removal (11)	6	3	6 Structures/Day **16 Structures**
Restoration (12)	7	11	1 Mile/Day **10.5 Miles**
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TABLE 2: CONSTRUCTION WORKFORCE ESTIMATES BY ACTIVITY—CONSTRUCT 230 KV T/L, BUILD OPTION B – VAN BUREN ROUTE

Work Activity		Activity Production	
Primary Activity Description	**Estimated Workforce**	**Estimated Schedule (Days)**	**Estimated Production Per Day**
Survey (1)	4	4	**7.5 Miles**
Marshalling Yard (2)	4	Duration of Project	Duration of Project
R/W Clearing (3)	5	30	0.25 Mile/Day
Roads & Landing Work (4)	5	11	0.5 Miles/Day & 6 Structure Pads/Day **61 Pads**
Guard Structure Installation (5)	6	8	4 Structures/Day **32 Structures**
Install Tubular Steel Pole Foundations (6)	7	86	0.5 TSPs/Day **43 TSPs**
Steel Pole Haul (7)	4	11	4 Steel Poles/Day **43 TSPs**
Steel Pole Assembly (8)	8	22	2 Steel Poles/Day **43 TSPs**
Steel Pole Erection (9)	8	22	2 Steel Poles/Day **43 TSPs**
Install LST Foundations	9	34	0.50 LST/Day **17 LSTs**
LST Steel Haul	6	17	1 LST/Day **17 LSTs**
LST Steel Assembly	14	34	0.5 LST/Day **17 LSTs**
LST Erection	8	17	1 LST/Day **17 LSTs**
Install Conductor & OHGW/OPGW (10)	16	22	0.35 miles/day **7.5 Circuit Miles**
Guard Structure Removal (11)	6	6	6 Structures/Day **32 Structures**
Restoration (12)	7	8	1 Mile/Day **7.5 Miles**
Total	**117**		

TABLE 3: CONSTRUCTION WORKFORCE ESTIMATES BY ELEMENT—CONSTRUCT 69 KV SUBTRANSMISSION LINE AND SUBSTATIONS

Construction Element	No. of Crews	No. of Persons/Crew
69 kV Subtransmission Line Construction		
Survey	1	3
Marshalling Yards	1	4-6*
Road Improvements	1	5
Foundations	1	6-8*
Wood and Steel Poles (Hauling, Assembly, Erection) each	3	3-5*
Cleanup	1	10
Wreck-Out (Remove Conductors, Structures, Foundations)	2	8
Total		63
230 kV Wildlife Substation		
Grading and site preparation	1	4-6*
Foundation installation	2	6-8*
Below grade electrical installation	2	6-8*
Above grade electrical installation	2	8-10*
Civil	1	12-14*
Engineering	1	12-14*
Total		86
230 kV / 69 kV Wilderness Substation		
Grading and site preparation	1	4-6*
Foundation installation	2	6-8*
Below grade electrical installation	2	6-8*
Above grade electrical installation	2	8-10*
Civil	1	12-14*
Engineering	1	12-14*
Total		86
69 kV Substation Upgrades (4 sites)		
Foundation installation	3	4-6*
Below grade electrical installation	3	6-8*
Above grade electrical installation	3	8-10*
Total		72
Fiber Optic Communications	1	4
Electrical	1	3
Electrical	1	4
Total		11

*worst case was assumed for the number of persons/crew

1.6 STUDY PERSONNEL

This traffic study was prepared by KOA Corporation under direction for POWER Engineers, Inc. Primary technical staff members assigned to this project analysis included:

Mujib Ahmed – Principal in Charge
George Ghossain – Senior Transportation Engineer
Rogelio Pelayo – Assistant Transportation Planner

2.0 REGULATORY FRAMEWORK

Traffic study details are defined by guidelines and requirements published by the federal, state, and local reviewing agencies. Typical traffic studies are based on specific proposed project locations that would generate a specific number of trips to and from a site within a defined time period.

In addition, construction and operating plans will need to be developed in accordance with federal, state, and local regulations and standards that promote safety and efficient use of public roadways.

2.1 FEDERAL

The Code of Federal Regulations (CFR) provides guidelines for regulations as it relates to the movement of hazardous materials via the Federal Motor Carrier Safety Administration. Under the Federal Aviation Administration guidelines, regulations are provided for aviation activities during the construction and post-construction periods.

2.2 STATE

The California Vehicle Code (CVC) along with the California Streets and Highway Code outline regulations as pertains to the transportation of hazardous waste within the state.

2.3 LOCAL

Separate traffic study guidelines are published by the City of Riverside (via the Department of Public Works) and the County of Riverside (via the Transportation Department).

Encroachment permits may be required by all local jurisdictions that lie within the project study area for the construction activities associated with the project.

The application of local agency guidelines for traffic impact determinations is discussed further in the Impact Assessment section (Section 6.0) of this report.

Table 4 provides a specific codes and a general description of adopted federal, state, and local laws, ordinances, regulations and standards (LORS) pertaining to general traffic and transportation safety and operational issues that would relate to construction and operations of the proposed project.

TABLE 4: TRAFFIC AND TRANSPORTATION LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Applicable Law	Description
Federal	
CFR Title 14 Aeronautics and Space, Part 77 Objects Affecting Navigable Airspace (14 CFT 77)	This regulation establishes standards for determining physical obstructions to navigable airspace; sets noticing and hearing requirements; and provides for aeronautical studies to determine the effect of physical obstructions to the safe and efficient use of airspace
CFR, Title 49, Subtitle B	Includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.
State	
CVC, Div 2, Chapter 2.5; Div 6; Chap. 7; Div 13; Chap. 5; Div. 14.1; Chap 1 & 2; Div. 14.8; Div. 15	Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials
California Streets and Highway Code, Div 1, Chap 3; Div 2 Chap 5.5	Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits
Local	
Riverside County Encroachment Permits	Encroachment permits are required to excavate, construct and otherwise encroach on Riverside County road ROW. Notification to the Director of Transportation shall be made in writing at least 48 hours in advance of the time when work will be started, and upon completion of the work. Immediate written notification to the Director of Transportation shall be made of such completion.
Riverside County Traffic and Transportation	The County of Riverside has identified a Level of Service (LOS) "C" along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections.
City of Riverside Encroachment Permits	No facilities or structures shall be constructed or placed upon a street ROW or upon any City-owned easement except upon issuance of an encroachment permit by the City, or except for facilities or structures installed or constructed by public utilities in accordance with any franchise or right previously granted. A processing fee for any permit issued for encroachments into the street rights-of-way or upon City easements shall be paid to the Public Works Department at the time of application for such permit, which fee shall be in an amount as established by resolution of the City Council (Ord. 4822 § 3, 1980). **Note**: As a City of Riverside Department, RPU would not be subject to obtaining this permit.
City of Riverside Traffic and Transportation and unincorporated communities of Riverside County	The communities and the City of Riverside do not have any guidelines but follow Riverside County level of service standards.

3.0 PROJECT AREA OVERVIEW

3.1 LOCATION AND STUDY AREA

The Project area is located in the western and northern sections of the City of Riverside and extends north into unincorporated areas of western Riverside County. The Project area is bordered to the north by State Highway 60 and the existing Mira Loma to Vista SCE Transmission Lines to the west by Interstate 15, and to the south and east by State Highway 91. The Santa Ana River roughly divides the Project area into northern and southern halves. Communities in Riverside County within the northern and western areas of the regional setting include Norco, Eastvale, Jurupa and Mira Loma in addition to the City of Riverside. Transmission elements of the proposed project would be roughly split between the City and County of Riverside; subtransmission and substation elements would be located entirely within Riverside city limits. The regional setting of the project is consistent with the area identified for considering potential cumulative impacts from the project, which are described in Chapter 5 of the DEIR.

The natural topography of the Project area is valley lowland intersected by a sinuous river corridor, isolated bluffs, and rolling hills, and surrounded by mountain ranges. Elevations within the Project area range from 680 to above 1900 feet above mean sea level (MSL); however, Project components would be located in relatively level portions within this area. The Project area is almost entirely developed; the only remaining large areas of native habitats occur along the Santa Ana River and in the nearby Jurupa Mountains.

The Project area is characterized by rural, urban, and suburban development intermixed with agriculture and undeveloped lands. Extensive areas in the central portion of the Project area (Santa Ana River floodplain) are preserved open space, set aside for recreation, wildlife, and protected species. Rapid population growth in the Project area has resulted in increased development with accompanying changes in land use.

3.2 STUDY AREA ROADWAY NETWORK

The project study area includes several local and major regional transportation facilities that traverse the City of Riverside and Riverside County. These facilities are described below.

3.2.1. Local Roadway Facilities

Columbus Street is a two-lane roadway running on an east/west alignment. The roadway is undivided and provides one travel lane in each direction. Columbus Street begins at Jurupa Avenue and continues east where it ends at Jurupa Avenue. The speed limit is posted at 35 miles per hour (mph) and parking is generally permitted along most of the roadway. Land uses along the roadway include commercial and industrial. Columbus Street is generally controlled by stop signs, but also has a traffic signal at Jurupa Avenue.

Mountain View Avenue is a two-lane residential roadway running on an east/west alignment. The roadway is undivided and provides one travel lane in each direction. Mountain View Avenue begins at Jurupa Ave and continues east where it ends at Streeter Avenue. The speed limit is posted at 35 mph and parking is generally permitted along most of the roadway. Land uses along Mountain View Avenue are residential. The roadway is generally controlled by stop signs.

Crest Avenue is a two-lane residential roadway running on a north/south alignment. The roadway is divided by a double yellow centerline and provides one travel lane in each direction. Crest Avenue begins at Julian Drive and continues south where it ends at Flagstone Avenue. The speed limit is posted at 35 mph and parking is generally permitted along most of the roadway. Land uses along the roadway include residential, institutional, and commercial. Crest Avenue is generally controlled by stop signs, but also has traffic signals at major intersections, such as Arlington Avenue.

Cypress Avenue is a two-lane residential roadway running on an east/west alignment. The roadway is divided by a broken yellow centerline and provides one travel lane in each direction. Cypress Avenue begins at Van Buren Boulevard and continues west where it ends at Golden Avenue. The speed limit is posted at 35 mph and parking is generally permitted along most of the roadway. Land uses along the roadway include mostly residential with commercial uses. Cypress Avenue is generally controlled by stop signs, but also has traffic signals at major intersections, such as Tyler Street, La Sierra Avenue, and Van Buren Boulevard.

Tomlinson Avenue is a two-lane residential roadway running on a north/south alignment. The roadway is undivided and provides one travel lane in each direction. Tomlinson Avenue begins at Wells Ave and continues south where it ends at Cook Avenue. The speed limit is posted at 25 mph and parking is generally permitted along most of the roadway. Land uses along Tomlinson Avenue are residential. The roadway is generally controlled by stop signs.

Cook Avenue and Mull Avenue are two-lane residential roadways running on an east/west alignment. The roadways are undivided and provide one travel lane in each direction. Mull Avenue begins at Tomlinson Avenue and continues west where it ends at Jones Avenue. Cook Avenue begins at Bolton Avenue and continues west where it ends at Jones Avenue. The speed limit is posted at 35 mph and parking is generally permitted along the roadway. Land uses along the roadways are residential. The roadways are controlled by stop signs.

Jones Avenue is a two-lane residential roadway running on a north/south alignment. The roadway is divided by a broken yellow centerline and provides one travel lane in each direction. Jones Avenue begins at Arlington Avenue and continues south where it ends at Hole Avenue. The speed limit is posted at 35

mph and parking is generally permitted along most of the roadway. Land uses along Jones Avenue are residential. The roadway is generally controlled by stop signs.

Hole Avenue is a four-lane roadway running on an east/west alignment located along the 69 kV line. The roadway is divided by a two-way left turn lane and provides two travel lanes in each direction. Hole Avenue begins at La Sierra Avenue and continues east where it ends at Magnolia Avenue. The speed limit is posted at 40 mph and parking is generally not permitted along most of the roadway. Land uses along Hole Avenue are residential and commercial. The roadway is controlled by traffic signals at all major intersections, including at La Sierra Avenue, Jones Avenue, Collette Avenue Tyler Avenue and Magnolia Avenue.

La Sierra Avenue is a four-lane roadway running on a north/south alignment located along the 69 kV line. The roadway is divided by a center median and provides two travel lanes in each direction. La Sierra Avenue begins at Arlington Avenue and continues south where it ends at Cajalco Road. The speed limit is posted at 45 mph and parking is generally not permitted along most of the roadway. Land uses along La Sierra Avenue are residential and commercial. The roadway is controlled by traffic signals at all major intersections.

Indiana Avenue is a four-lane roadway running on a east/west alignment located along the 69 kV line. The roadway is divided by a two-way left turn lane and provides two travel lanes in each direction. Indiana Avenue begins at Tyler Avenue and continues east where it ends at Arlington Avenue. The speed limit is posted at 40 mph and parking is generally not permitted along most of the roadway. Land uses along Indiana Avenue are residential and commercial. The roadway is controlled by traffic signals at all major intersections, including at Tyler Avenue, Van Buren Boulevard, Jackson Street, Monroe Street, Adams Street and Magnolia Avenue.

Diana Avenue is a two-lane residential roadway running on a east/west alignment. The roadway is divided by a broken yellow centerline and provides one travel lane in each direction. Diana Avenue begins at La Sierra Avenue and continues east where it ends at Myers Street. The speed limit is posted at 40 mph and parking is generally permitted along most of the roadway. Land uses along Diana Avenue are residential and commercial. The roadway is generally controlled by stop signs and traffic signals at all major intersections.

Harrison Street is a two-lane roadway running on a north/south alignment. The roadway is divided by a double yellow centerline and provides one travel lane in each direction. Harrison Street begins at Indiana Avenue and continues south where it ends at Canal Street. The speed limit is posted at 35 mph and parking is generally permitted along most of the roadway. Land uses along Harrison Street are residential and commercial. The roadway is generally controlled by stop signs.

Hughes Alley is a two-lane roadway running on a north/south alignment. The roadway is divided by a double yellow centerline and provides one travel lane in each direction. Hughes Alley begins at Magnolia Avenue and continues south where it ends at Diana Avenue. The speed limit is not posted and parking is generally permitted along the Westside of the roadway. Land uses along the roadway include residential and commercial. Rutland Avenue is generally controlled by stop signs, but also has a traffic signal at Magnolia Avenue.

Rutland Avenue is a two-lane roadway running on a north/south alignment. The roadway is divided by a broken yellow centerline and provides one travel lane in each direction. Rutland Avenue begins at Bredford Street and continues south where it ends at Wells Avenue. The speed limit is posted at 35 mph and parking is generally permitted along most of the roadway. Land uses along the roadway include

residential, institutional, and commercial. Rutland Avenue is generally controlled by stop signs, but also has traffic signals at major intersections, such as Arlington Avenue.

Doolittle Avenue is a two-lane roadway running on a north/south alignment. The roadway is divided by a broken yellow centerline and provides one travel lane in each direction. Doolittle Avenue begins at Jurupa Avenue and continues south where it ends at Jurupa Avenue. The speed limit is not posted and parking is generally permitted along most of the roadway. Land uses along the roadway include mostly commercial uses with some residential. Doolittle Avenue is generally controlled by stop signs.

Tyler Street is a four-lane roadway running on a north/south alignment located north of the project site. The roadway is divided by a double yellow line and provides one travel lane in each direction north of Wells Ave and south of the 91 Freeway; two travel lanes in each direction become apparent between Wells Ave and the 91 Freeway. Tyler Street begins at Jurupa Ave and continues south where it ends at Victoria Ave. The speed limit is posted at 40 mph and parking is generally not permitted along most of the roadway. Land uses along Tyler Street are residential and commercial. The roadway is controlled by traffic signals at all major intersections, including at Wells Ave.

Wells Avenue is a two-lane residential roadway running on an east/west alignment. The roadway is divided by a double yellow line and provides one travel lane in each direction. Wells Avenue begins at Van Buren Blvd and continues south where it ends at Hole Avenue. The speed limit is posted at 35 mph and parking is generally not permitted along most of the roadway. Land uses along the roadway include residential, institutional, and commercial. Wells Avenue is generally controlled by stop signs, but also has traffic signals at major intersections, such as Tyler Street.

Van Buren Boulevard is a four-lane major arterial roadway running on a north/south alignment. The roadway is divided by a landscaped medium and provides two travel lanes in each direction. Van Buren Blvd begins just below the 60 Freeway in the City of Mira Loma and continues south where it ends at 215 Freeway in the City of Alessandro. The speed limit is posted at 55 mph and parking is generally not permitted along most of the roadway. Land uses along the roadway include residential, vacant lots, agriculture, and industrial. Van Buren Blvd is generally controlled by traffic signals at all major intersections.

Jurupa Avenue is a four-lane arterial roadway running on an east/west alignment. The roadway is divided by a two-way left turn lane and provides two travel lanes in each direction. Jurupa Ave begins at Pechappa Dr and continues west where it ends at Van Buren Blvd. The speed limit is posted at 50 mph and parking is generally not permitted along most of the roadway. Land uses along the roadway include residential, commercial, and industrial. Jurupa Ave is generally controlled by stop signs, but does have traffic signals at all major intersections, including at Bellegrave Ave.

Arlington Avenue is a four-lane arterial roadway running on an east/west alignment. The roadway is divided by a double yellow line and provides two travel lanes in each direction. A landscaped medium forms near the intersection of Van Buren Blvd. Arlington Avenue begins at Alessandro Blvd and continues west where it ends at Crestview Dr in the City of Norco. The speed limit is not posted within the site vicinity and parking is generally not permitted along most of the roadway. Land uses along the roadway include residential, commercial, industrial, and vacant lot. Arlington Ave is controlled by traffic signals at all major intersections, including Van Buren Blvd.

Limonite Avenue is a two-lane arterial roadway running on an east/west alignment. The roadway is divided by a double yellow line and provides two travel lanes in each direction. Limonite Avenue begins at Mission Boulevard and continues west where turns into Cloverdale Road and ends at Archibald Street in the City of Chino. The speed limit is posted at 55 mph within the site vicinity and parking is generally

not permitted along most of the roadway. Land uses along the roadway include residential, commercial, industrial, and vacant lot. Limonite Avenue is controlled by traffic signals at all major intersections, including Van Buren Blvd.

3.2.2. Regional Roadway Facilities

Interstate 15 **(I-15)** is the nearest freeway to the project site. A portion of the transmission line runs parallel along the freeway. It provides regional northeast/southwest throughout the State, beginning in San Diego and continuing north past the California state border to Las Vegas and beyond. In the project area, it has three to four lanes per direction.

State Route 91 (SR-91) is located approximately four miles to the south of the project site. It provides regional east/west throughout the region, beginning in Los Angeles and continuing east to Riverside where it ends at Interstate 215 (I-215). In the project area, it has three to four lanes per direction. Van Buren Boulevard provides a full interchange with this freeway.

State Route 60 (SR-60) is also near the project site. It is located in western Riverside County approximately one mile north of the northern terminus of the proposed I-15 230 kV transmission line option. It provides regional east/west travel throughout the region, beginning in Los Angeles and continuing east to Beaumont where it ends at Interstate 10. In the project area, it has three to four lanes per direction. Interchanges with SR-60 are located at Van Buren/Mission Boulevard, La Sierra Avenue, Tyler Street, and Arlington Avenue.

3.3 TRANSIT AND RAIL SERVICES

Transit service is limited to the more populous regions of the project study area. Bus services are provided by the Riverside Transportation Authority (RTA) and Omnitrans.

3.3.1. Bus Service

Fixed-route transit services and demand response (dial-a-ride) transit services are provided by RTA for the western portion of Riverside County. Currently, RTA operates 44 bus routes and demand-responsive services within a 2,500-square mile area of western Riverside County. RTA's fixed routes have been designed to establish transportation connections between all the cities and unincorporated communities in western Riverside County. RTA's main terminal in Riverside is located between University Avenue and Mission Inn Avenue, one block west of Market Avenue. RTA also provides connections to selected Metrolink stations for both inbound and outbound trains. RTA also participates with Omnitrans in San Bernardino County to provide express bus service between downtown Riverside and downtown San Bernardino, connecting with express service to Ontario. Omnitrans is the public transit agency serving the San Bernardino Valley. RTA and Omnitrans vehicles are wheelchair-accessible with full-size buses equipped with bike racks.

In addition to fixed route and demand-responsive services, specialized public transportation services are also available through services operated by the City of Riverside. Additionally, the Riverside County Transportation Commission (RCTC) supports a number of specialized transportation programs including shared ride and vanpool services, social service dial-a-ride, and specialized services for seniors and persons with disabilities.

Greyhound Bus Lines provide private transportation services that link the principal population centers of Riverside County with other regions. This includes east-west service connecting Blythe, Indio, Palm Springs, Banning/Beaumont, and San Bernardino. Service continues westward to downtown Los Angeles and intermediate stops. North-south service connects Riverside with Temecula, continuing southward to San Diego.

Table 5 presents bus routes in the project vicinity.

TABLE 5: RIVERSIDE TRANSIT AGENCY BUS ROUTES IN THE PROJECT VICINITY

Route Schedules (By Route Number)	
Jurupa Shuttle	Jurupa, Norco, Rubidoux
Route 1	UCR/Downtown Terminal to W. Corona Metrolink
Route 3	Arlington & La Sierra to Magnolia & Fullerton - Norco, Corona
Route 10	Main & Russell to Pierce & Sterling - Riverside
Route 12	Stephens & Center to Pierce & Sterling - Riverside
Route 13	Chicago & Marlborough to Galleria at Tyler - Riverside
Route 14	Blaine & Canyon Crest to Galleria at Tyler - Riverside
Route 15	Downtown Terminal to Galleria at Tyler - Riverside
Route 16	Main & Russell to March Air Reserve Base
Route 16E	Main & Russell to March Air Reserve Base
Route 20	Magnolia Center, RCR Med Cntr, MoVal Comm Hosp, RCC, Moreno Valley
Route 21	Galleria at Tyler to Country Village
Route 22	Downtown Terminal to Lake Elsinore Outlet Center
Route 25	Downtown Terminal to VA Hospital, Loma Linda Medical Center - Highgrove, Loma Linda
Route 27	Galleria at Tyler to Florida & Lincoln, Hemet - Riverside/Perris/Sun City/Hemet
Route 29	Downtown Terminal to Etiwanda & Bellegrave - Rubidoux
Route 38	Pedley Metrolink to RCC Norco
Route 49	Downtown Terminal to Country Village
Route 50 **The Trolley Red Line**	Eden Lutheran Church, Riverside County Courthouse
Route 51	Weekdays | UCR to Canyon Crest - Crest Cruiser
Route 52 **The Trolley Green Line**	Downtown Riverside
Route 149	Downtown Terminal to Village at Orange - Riverside, Corona, Orange Co., Anaheim
Route 204	Riverside to Montclair Transcenter
Route 208	Temecula, Menifee, Sun City, Perris, Moreno Valley, Riverside Metrolink
Route 794	Express

Source: Riverside Transit Agency 2007

3.3.2. Rail Service

Metrolink commuter rail service in Riverside extends into downtown Los Angeles and Orange County. Metrolink is operated by the Southern California Regional Rail Authority. Lines serving downtown Los Angeles are Metrolink 91 and the Riverside Line. Service to Orange County is via the Inland Empire-Orange County line. All lines stop at the two Metrolink stations in the City of Riverside: one just east of downtown, and one in the La Sierra community. Metrolink owns rights to operate on Union Pacific and Burlington Northern Santa Fe rail lines.

Three Metrolink commuter rail lines serve western Riverside County and provide connections to destinations in Los Angeles, Orange, San Bernardino, and Ventura Counties. Service is available seven days a week. There are currently five commuter rail stations serving Riverside County: Riverside - Downtown, Pedley, Riverside - La Sierra, West Corona, and North Main Corona Stations.

RCTC plans to request Federal Transit Administration (FTA) New Starts funds to extend the Metrolink 91 Line to South Perris in Riverside County. The Metrolink 91 Line currently operates between downtown Los Angeles and downtown Riverside via Fullerton and Corona. The extension would add approximately 21.3 miles to the route of the 91 Line and serve the University of California at Riverside, Moreno Valley, and the Perris area.

In addition to Metrolink, the California High Speed Rail Authority proposes a high-speed train (HST) system for intercity travel in California between the major metropolitan centers of Sacramento and the San Francisco Bay Area in the north, through the Central Valley to Los Angeles, Riverside, and San Diego in the south. The HST would carry passengers at speeds in excess of 200 mph on a fully grade-separated track, with state-of-the-art safety, signaling, and automated control systems.

The Southern California Association of Governments (SCAG) has been studying the feasibility of constructing four magnetic levitation (Maglev) high-speed transportation system corridors within the region. The intent of this project would be to create an integrated regional airport system by connecting all significant airport facilities as well as major activity centers and multi-modal transportation centers using a high-speed transportation system. After this initial network is constructed and shown to be a feasible alternative to the automobile, further expansion could include travel between such destinations as Los Angeles and San Diego, San Bernardino and Palmdale, and possibly Los Angeles and Las Vegas.

Union Pacific Railroad Company (UP) and Burlington Northern Santa Fe Railway Company (BNSF) Railroads, both Class I Freight Railroads, provide freight service in Riverside County, connecting the County with major markets in California and the nation. Primary commodities include bulk shipments of chemicals, petroleum, food products, farm products, primary metals, paper products, and lumber. Freight terminals and service to specific industries are located throughout Riverside County. The SCAG Regional Transportation Plan estimates train volume on the UP line between Colton and Indio to be 26 trains daily. An estimated 28 to 50 daily trains move on the Riverside to Atwood portion of the BNSF line.

Both UP and BNSF operate railway lines within the study corridors. UP requires that a Right-of-Entry (ROE) permit is issued prior to construction within the ROW. BNSF requires that an application for a permit to access BNSF's property be submitted.

Although the railroads are reluctant to provide information on the amount of freight originating in the County, it is likely that the predominant mode for freight movements in the County will continue to be by truck in the foreseeable future. This is certainly the trend expected for raw agricultural commodities moving to packing and processing facilities. For long-distance trips (i.e., outside the 800-mile threshold), SCAG has estimated that trains will carry approximately 50 percent of the freight into the region, by tonnage. AMTRAK currently serves Riverside County at two locations. AMTRAK's Southwest Chief Service recently began stopping at the Downtown Riverside Metrolink Station and provides connections to Los Angeles and points east including Flagstaff, Albuquerque, St. Louis, and Chicago.

It should also be mentioned that freight railroads and various public agencies have entered into negotiations for the use of freight rail lines for commuter and intercity passenger services, such as the Metrolink commuter rail system.

3.4 SCHOOL BUS SERVICE

The California Energy Commission has requested traffic information related to schools on similar projects. It is understood that the potential impacts of traffic, namely construction truck traffic, may have some effect on school children in the area (children being picked up or dropped off on local roads near the proposed project site). The following table indicates schools, their locations, distance from the project site, and bus routes designated by the school district.

TABLE 6: SCHOOL BUS CHARACTERISTICS IN THE PROJECT VICINITY

School Name	Distance From Project Site	School Designated Bus Routes
Alvord Unified School District		
Arlanza Elementary School	3.1 miles south of the project site	No bus service for this location
Rosemary Kennedy Elementary School	4.2 miles southwest of the project site	Bus Route 3
Terrace Elementary School	2.9 miles southwest of the project site	Bus Route 1 (Kindergarten only)
Loma Vista Middle School	4.6 miles southwest of the project site	Bus Routes 1,2,3,15 and 16
Norte Vista High School	3.9 miles southwest of the project site	No bus service for this location
Corona Norco Unified School District		
Eastvale Elementary School	9.0 miles west of the project site	Bus Routes 67 and 68
Harada Elementary School	8.0 miles west of the project site	Bus Routes 62, 63 and 64
Riverview Elementary School	7.1 miles west of the project site	Bus Routes 571, 572, 573, 574 and 575
River Heights Intermediate School	9.1 miles west of the project site	Bus Routes 561, 562, 563, 564 and 565
Roosevelt High School	9.6 miles west of the project site	Bus Routes 561, 562, 563, 564, 565, 566, 567 and 568
Jurupa Unified School District		
Glen Avon Elementary School	6.1 miles north of the project site	Bus Routes 1, 15, 30, 33, 36 and 123
Granite Hills Elementary School	6.6 miles north of the project site	Bus Routes 2, 5, 8, 9, 10, 16, 21, 22, 24, 36 and 37
Indian Hills Elementary School	3.1 miles north of the project site	Bus Route 118
Mission Bell Elementary School	6.3 miles north of the project site	Bus Routes 5, 12, 15, 31 and 36
Pedley Elementary School	3.2 miles north of the project site	Bus Routes 2, 5, 9,13, 16, 22, 23, 24, 26, 27 and 29
Peralta Elementry School	4.7 miles northeast of the project site	Bus Routes 2, 4, 6, 8, 10, 11, 12, 14, 19, 20, 33 and 110
Sky Country Elementary School	6.8 miles northwest of the project site	Bus Routes 5, 9, 13, 16 and 37
Stone Avenue Elementary School	5.9 miles north of the project site	Bus Routes 1, 4, 7, 13, 14, 15, 25, 27, 28, 33 and 111
Troth Street Elementary School	5.8 miles northwest of the project site	Bus Routes 4, 7, 9, 16, 23 and 37
Van Buren Elementary School	4.6 miles north of the project site	Bus Routes 30, 119 and 141
Jurupa Middle School	5.4 miles north of the project site	Bus Routes 1, 4, 6, 7, 8, 10, 12, 13, 14, 15, 23, 24, 25, 27, 26, 28, 30, 33, 36 and 40
Mira Loma Middle School	5.4 miles northwest of the project site	Bus Routes 1, 5, 9, 12, 16, 22, 29, 31 and 37
Jurupa Valley High School	6.5 miles northwest of the project site	Bus Routes 2, 4, 7, 9, 16, 22, 24, 26, 29, 36 and 37

The project encompasses areas in three school districts; Alvord Unified School District, Corona-Norco Unified School District, and Jurupa Unified School District. Of the 23 schools determined to be within the immediate project vicinity, none of these schools or their students will experience significant traffic changes because increases in traffic resulting from this project are temporary construction trips. Once project construction is completed, construction-related trips will cease to exist.

3.5 BICYCLE FACILITIES

Bicycling occurs throughout the County, but is more concentrated in the cities and urbanized portions of unincorporated areas, and is more recreational than commute-oriented. Although the County's current

bicycle plan provides for connections between major urban and recreational facilities within the County, implementation of the plan has occurred only to a limited extent. There are bicycle lanes, bicycle routes, and bikeways on the roadways throughout the study corridors; bicyclists are allowed to use public roadways within the city limits of Riverside. One major facility, the Santa Ana River Bikeway, is proposed to extend along the Santa Ana River from the foothills of the San Bernardino Mountains to the Pacific Ocean. The Santa Ana Bikeway is currently paved with the exception of a small portion which crosses a drainage in the Hidden Valley Wildlife Area. That drainage on the bikeway is planned to be crossed by a recently funded bridge project. A major coordination project for Orange and Riverside County planners (in concert with the Wildlands Conservancy) is the closure of the gap between the existing bikeway segment in the City of Riverside and the boundary with Orange County.

3.6 AIRPORT FACILITIES

Two airports, Riverside Municipal Airport and Flabob, are located within or in the immediate vicinity of the study corridors.

Riverside Airport - is owned and operated by the City. Riverside Airport is situated on 441 acres in the northwest portion of the City, bordered by Central Avenue to the north, Arlington Avenue to the south, Hillside Avenue to the east, and Van Buren Boulevard to the west. A full range of aviation services is available at the airport. This includes aircraft rental, flight training, aircraft maintenance, aircraft charter, aircraft fueling, and many other services. Existing runway configuration at Riverside Airport includes three runways. Runway 9-27, which serves as the primary runway, is 5,400 feet long, 100 feet wide, and oriented in an east-west direction. Runway 16-34 is 2,851 feet long, 45 feet wide, and oriented in a north-south direction. Runway 16-34 serves as the crosswind runway. In this manner, Runway 16-34 provides an alternate landing direction for small aircraft during periods when wind flow is not closely aligned with Runway 9-27. A precision instrument approach procedure is established from the west, although most of the aircraft operations are in the opposite direction. An air traffic control tower serves the airport. From a land use compatibility standpoint, the most significant improvement planned for the airport is a 750-foot easterly extension of the runway. Establishment of a non-precision instrument approach procedure from the east also is planned.

Flabob Airport - is situated along the edge of the Santa Ana River just west of downtown Riverside. The airport is home to some 200 aircraft, many of them vintage or experimental airplanes. The airport also provides educational programs for local schoolchildren. Facility improvement plans include a school (aviation-based public charter high school), a museum and educational center, a 12.5-acre business park with space for 10 to 29 aviation-based businesses, and 85 new hangars for individual airplane owners. The hangars would be constructed in conjunction with an 85-home housing tract (Masterpiece Skyport at Flabob Airport) to be built next to Flabob by a private developer. A corresponding increase in aircraft operations can be anticipated; however, the limited land area prevents expansion of the single 3,190-foot runway.

3.7 PEDESTRIAN FACILITIES

Pedestrian facilities include hiking and walking trails. One major facility, the Santa Ana River Trail, is proposed to extend along the Santa Ana River from the foothills of the San Bernardino Mountains to the Pacific Ocean. The Santa Ana River Trail is surfaced with decomposed granite, and is used by equestrians, mountain bicyclists, hikers, and joggers.

4.0 INVENTORY METHODS

In order to complete the traffic impact sensitivity analysis, a field survey was conducted to collect data on the characteristics (e.g., number of lanes) of major area roadways that would be crossed by the project links (defined as orientation to route).

4.1 DATA COLLECTION DETAILS

Fieldwork related to the project routes was conducted within the City of Riverside and the County of Riverside for the sensitivity portion of this report. Intersection count volumes were collected for two intersections related to the new substations located within the City of Riverside.

In order to incorporate information into the analysis from planned area roadway projects, information was compiled from Transportation Improvement Plans (TIPs) from the County of Riverside and the City of Riverside as well as the Regional Transportation Plan developed by SCAG. The SCAG Regional Transportation Plan (RTP) is a long-term vision document that outlines transportation goals, objectives, and policies for the SCAG region. The RTP is a multi-modal, long-range planning document prepared in coordination with federal, state, and other regional, sub-regional, and local agencies in southern California. The RTP includes programs and policies for congestion management, transit, bicycles and pedestrians, roadways, freight, and finances. The RTP is prepared every three years and reflects the current future horizon based on a 20-year projection of needs.

The RTP's primary use is as a regional long-range plan for federally funded transportation projects. It also serves as a comprehensive, coordinated transportation plan for all governmental jurisdictions within the region. Each agency responsible for transportation, such as local cities, the County, and the California Department of Transportation (Caltrans), has different transportation implementation responsibilities under the RTP. The RTP relies on the plans and policies governing circulation and transportation in each County to identify the region's future multi-modal transportation system. The State Transportation Improvement Plan (STIP), maintained by the Caltrans, was also reviewed. These projects were included in the overall Project impact analysis, as they have the potential to overlap with the project construction period and the post-construction operations period.

4.2 DATA CATEGORIES

Data used for the traffic impact sensitivity analysis was collected in detail during fieldwork efforts for routes. Project study area data was collected from existing agency information (such as bikeway maps and transit line information) and roadway maps.

The results of these inventory efforts were combined and served as the primary inputs to the impact sensitivity analysis.

5.0 AFFECTED ENVIRONMENT

5.1 STUDY COMPONENTS

This report section summarizes the characteristics of transportation facilities and resources that would potentially be impacted by project construction and/or maintenance and operations activity within the project 230 kV transmission and 69 kV subtransmission component areas. This discussion includes, in order, the study roadway segment points, planned roadway projects, and access roadways to the switching station sites.

5.1.1. 230 kV Project Route Summary

Tables 7 and 8 summarize link characteristics organized by 230 kV Build Option. Table 7 provides a summary of the Build Option A route as it relates to the public roadway facilities. Table 8 provides a summary of the Build Option B route as it relates to the public roadway facilities. These characteristics were compiled as part of the fieldwork effort. These analysis locations represent points on the roadway network. The naming of the analysis links includes "to" and "from" extents. There are limited cross-street locations along many of the remote study roadways; therefore, defining start and end points of the analysis locations would be problematic.

TABLE 7: SUMMARY OF LINK CHARACTERISTICS AT BUILD OPTION A ROUTE CROSSING POINTS ON MAJOR ROADWAYS

Link Number	Mile From	Mile To	Roadway	Jurisdiction	Description (lanes)	Orientation to Route
Build Option A - West I-15 Route						
Link Ax						
Link D	0.00	0.10	Santa Ana Bike Trail	City of Riverside	Paved Trail	Parallel
	0.10	0.20	Santa Ana Bike Trail		Paved Trail	Crossing
	0.20	0.40	Santa Ana Bike Trail		Paved Trail	Parallel
	0.40	0.50	Santa Ana Bike Trail		Paved Trail	Crossing
	0.50	2.15	Santa Ana Bike Trail		Paved Trail	Parallel
Link H	0.00	0.30	Santa Ana Regional Park Rd	City of Riverside	2/Dirt Road	Parallel
	0.30	0.50	Arlington Ave/Santa Ana Regional Park Rd		2/Dirt Road	Parallel/Crossing
	0.50	0.70	Arlington Ave		2	Parallel
	0.70	1.00	N/A		N/A	N/A
	1.00	1.17	Pedley Substation Rd		2 unmarked paved road	Crossing
Link Ja	0.00	0.47	Santa Ana River	City of Riverside	N/A	Crossing
Link Jb	0.00	0.98	68th Street	City of Riverside	2	Parallel
Link Jd	0.10	0.50	I-15 Fwy	City of Riverside	6	Parallel
	0.50	0.80	private road/parking area	City of Riverside	N/A	Crossing
	0.80	0.90	Limonite Ave	County of Riverside	4	Crossing
	0.90	1.20	I-15 Fwy/Limonite Ave Onramp		6	Parallel
	1.20	2.00	1-15 Fwy		6	Parallel
	2.00	2.10	Bellegrave Ave		2	Crossing
	2.10	2.50	I-15 Fwy		6	Parallel
	2.50	2.90	Privete Driveway		2	Parallel
	2.90	3.00	Wineville Rd		2	Crossing
	3.00	3.40	Wineville Rd		2	Parallel
	3.40	3.49	Wineville Rd		2	Crossing

TABLE 8: SUMMARY OF LINK CHARACTERISTICS AT BUILD OPTION B ROUTE CROSSING POINTS ON MAJOR ROADWAYS

Link Number	Mile From	Mile To	Roadway	Jurisdiction	Description (lanes)	Orientation to Route
Build Option B - Van Buren Route						
Link Bx	0.00	0.10	N/A	City of Riverside	N/A	N/A
	0.10	0.30	Santa Ana River		N/A	Crossing
	0.30	1.40	Santa Ana River		N/A	Parallel
	1.40	1.50	Van Buren Blvd		4	Crossing
	1.50	1.70	Lakeview Ave		Dirt	Parallel/Crossing
Link L	0.00	0.10	N/A	County of Riverside	N/A	N/A
	0.10	0.22	Van Buren Blvd/Railroad Crossing		4	Crossing
Link N	0.00	0.40	Pedley/Baldwin Ave	County of Riverside	2	Parallel
	0.40	0.50	Limonite Ave		5	Crossing
	0.50	0.70	Limonite Ave		4	Parallel
Link Q	0.00	0.50	N/A	County of Riverside	N/A	N/A
	0.50	0.64	Pedley Rd		2	Crossing
Link R	0.00	0.40	Van Buren Blvd	County of Riverside	4	Parallel
	0.40	0.50	56th St		2	Crossing
	0.50	1.20	Van Buren Blvd		4	Parallel
	1.20	1.30	Jurupa Rd/ Felspar St		2 and 2	Crossing
	1.30	1.40	Van Buren Blvd		4	Crossing
	1.40	1.50	Van Buren Blvd		4	Parallel
	1.50	1.60	Van Buren Blvd		4	Crossing
	1.60	1.90	Brookhollow Circle		2	Parallel
	1.90	1.95	Galena St		2	Crossing
	1.95	2.00	Galena St		2	Parallel
	2.00	2.05	Muth Way		2	Crossing
	2.05	2.40	Galena St		2	Parallel
	2.40	2.45	Rutile St		2	Crossing
	2.45	2.65	Rutile St		2	Parallel
	2.65	2.85	Bellegrave St		2	Parallel
	2.85	2.90	Van Buren Blvd		4	Crossing
	2.90	3.29	Van Buren Blvd		4	Parallel
Link S	0.00	0.40	Flood Control Channel	County of Riverside	channel	Parallel/Crossing
	0.40	0.50	San Sevaine Way		2	Crossing
	0.50	0.70	Flood Control Channel		channel	Parallel/Crossing
	0.70	0.80	I-60 Fwy		6	Crossing
	0.80	0.90	Flood Control Channel		channel	Parallel

There is a potential for traffic impacts to occur on these study links for direct construction adjacent to or over the affected roadways and for access to the transmission lines and towers during the operations/maintenance period. During construction, temporary lane closures would likely occur to allow for installation of transmission lines and other activities.

During the operations and maintenance period, equipment movement to and from primary roadways to the transmission line and tower access roadways could necessitate lane closures. Any impacts to area transportation facilities or resources during the operations and maintenance period, however, are expected to be short-term in nature and therefore insignificant in terms of transportation network operations.

The potential impacts during construction and maintenance of the project are further discussed in Sections 6.0 and 7.0 of this report.

5.1.2. 69 kV Project Route Summary

Several new double-circuit 69 kV subtransmission lines would need to be constructed between 69 kV substations within the City.

The various new 69 kV subtransmission lines have been divided into the following two general construction areas:

- Wilderness-RERC – Harvey Lynn/Freeman
- Wilderness – Jurupa Avenue /Mountain View

Table 9 provides a summary of the RERC to Freeman and RERC to Harvey Lynn Preferred Route. Table 10 provides a summary of the Wilderness to RERC and Wilderness to Mountain View as they relate to the public roadway facilities.

These characteristics were compiled as part of the fieldwork effort. These analysis locations represent points on the roadway network. The naming of the analysis locations includes "to" and "from" extent points.

TABLE 9: SUMMARY OF LINK CHARACTERISTICS AT RERC TO FREEMAN AND RERC TO HARVEY LYNN CROSSING POINTS ON MAJOR ROADWAYS

Link Number	Mile From	Mile To	Roadway	Jurisdiction	Description (lanes)	Orientation to Route
69 kV Transmission Line - RERC to Freeman Preferred						
1	0.0	0.15	N/A	City of Riverside	N/A	N/A
3	0.0	0.60	Wastewater Facilities Road	City of Riverside	N/A	N/A
	0.6	0.70	Van Buren Blvd	City of Riverside	2	Crossing
	0.7	0.90	N/A	City of Riverside	N/A	N/A
4	0.0	0.85	Doolittle Ave	City of Riverside	2	Parallel
10	0.0	0.25	N/A	City of Riverside	N/A	N/A
11	0.0	0.70	Arlington Ave	City of Riverside	4	Parallel
12	0.0	0.20	Rutland Ave	City of Riverside	2	Parallel
	0.2	0.40	Cypress Ave		2	Parallel
15a	0.0	0.01	Cypress Ave	City of Riverside	2	Crossing
	0.0	0.90	Crest Ave		2	Parallel/Crossing
	0.9	1.00	Wells Ave		2	Parallel/Crossing
N1	0.0	0.10	Tomilson Ave	City of Riverside	2	Parallel
N2	0.0	0.20	Mull Ave	City of Riverside	2	Parallel/Crossing
17b	0.0	0.10	Tyler St	City of Riverside	2	Parallel
	0.1	0.15	Cook		2	Crossing
19	0.0	0.70	Tyler St	City of Riverside	2	Parallel
32	0.0	0.20	Tyler St	City of Riverside	2	Parallel/Crossing
33	0.0	0.50	Tyler St	City of Riverside	6	Parallel/Crossing
	0.5	0.80	Hwy 91/Indiana Ave		4	Crossing/Parallel
36	0.0	0.20	Indiana Ave	City of Riverside	4	Parallel/Crossing
38	0.0	0.70	Indiana Ave	City of Riverside	4	Parallel/Crossing
41	0.0	0.10	Gibson St	City of Riverside	2	Parallel/Crossing
42	0.0	0.10	N/A	City of Riverside	N/A	N/A
69 kV Transmission Line - RERC to Harvey Lynn Preferred						
1	0.0	0.15	N/A	City of Riverside	N/A	N/A
3	0.0	0.60	Wastewater Facilities Road	City of Riverside	N/A	N/A
	0.6	0.70	Van Buren Blvd	City of Riverside	2	Crossing
	0.7	0.90	N/A	City of Riverside	N/A	N/A
4	0.0	0.85	Doolittle Ave	City of Riverside	2	Parallel
10	0.0	0.25	N/A	City of Riverside	N/A	N/A
11	0.0	0.70	Arlington Ave	City of Riverside	4	Parallel
12	0.0	0.20	Rutland Ave	City of Riverside	2	Parallel
	0.2	0.40	Cypress Ave		2	Parallel
15a	0.0	0.01	Cypress Ave	City of Riverside	2	Crossing
	0.0	0.90	Crest Ave		2	Parallel/Crossing
	0.9	1.00	Wells Ave		2	Parallel/Crossing
N1	0.0	0.10	Tomilson Ave	City of Riverside	2	Parallel
N2	0.0	0.20	Mull Ave	City of Riverside	2	Parallel/Crossing
N3	0.0	0.30	Mull Ave	City of Riverside	2	Parallel/Crossing
	0.3	0.40	Mobbley Ave		2	Parallel/Crossing
	0.4	0.50	Jones Ave		2	Parallel/Crossing
20	0.0	0.40	Cook Ave	City of Riverside	2	Parallel
	0.4	0.60	Jones Ave		2	Parallel
26	0.0	0.30	Hole Ave	City of Riverside	4	Parallel/Crossing
27	0.0	0.10	Hole Ave	City of Riverside	4	Parallel/Crossing
28	0.0	0.20	Minnier Ave	City of Riverside	2	Parallel/Crossing
29	0.0	0.05	Minnier Ave	City of Riverside	2	Parallel/Crossing
30	0.0	0.50	Schuyler Ave	City of Riverside	2	Parallel/Crossing

TABLE 10: SUMMARY OF LINK CHARACTERISTICS AT WILDERNESS TO RERC AND WILDERNESS TO MOUNTAIN VIEW CROSSING POINTS ON MAJOR ROADWAYS

Link Number	Mile From	Mile To	Roadway	Jurisdiction	Description (lanes)	Orientation to Route
69 kV Transmission Line - Wilderness to RERC Preferred						
1	0.0	0.10	Wilderness Ave	City of Riverside	2	Crossing
69 kV Transmission Line - Wilderness to Mountain Preferred						
2	0.0	0.08	N/A	City of Riverside	N/A	N/A
3	0.0	0.40	N/A	City of Riverside	N/A	N/A
	0.4	0.70	Industrial Ave	City of Riverside	2	Parallel
	0.7	0.80	N/A	City of Riverside	N/A	N/A
9	0.0	0.10	Railroad Tracks/Jurupa Ave	City of Riverside	2	Crossing/Parallel

5.1.3. Service Access Roads

In order to construct and maintain the project utility towers and overhead lines, use of a ground access road network will be necessary. Existing paved and unpaved highways and roads would be used where possible. Where new access roads are required, they would be constructed to support the weight of construction and maintenance vehicles and would typically be 16 feet wide. Permanent roads would be constructed where necessary for operation or maintenance. Some temporary access roads maybe constructed as part of the project.

The establishment, modification, and use of the access road network would not create traditional significant traffic impacts, as the establishment and use of these minor roadways would not affect the operation of area public roadways and roadway intersections.

5.1.4. Planned Roadway Projects

Table 11 provides a summary of planned roadway projects that would overlap with the project study area.

As project design and construction plans move forward, coordination will be necessary with the lead agencies on these projects in order to determine if special considerations need to be made for wider roadway crossings and project timing.

TABLE 11: SUMMARY OF MAJOR PLANNED ROADWAY PROJECTS WITHIN STUDY AREA

RTP ID	Route	Description	Project Completion
RIV011233	I-15 / Limonite Ave IC	Widen IC 4-6 lanes, Ramps 1-2 lanes, & widen Limonite Ave from Hamner to Wineville 4-6 lanes (approx 1 mile	N/A
RIV050532	I-15	On I-15 near the City of Norco - Construct new Schleisman Rd IC (6 lanes) and ramps (1 lane)	N/A
RIV011208	Van Buren Blvd	Widen Van Buren Blvd from 4-6 lanes from Jackson St to the Santa Ana River and add dedicated right-turn lanes at major intersections	N/A
RIV060123	Clay St	On Clay St approx 0.5 miles e/o Van Buren Blvd and n/o the Santa Ana River construct Clay St undercrossing under the UP RR	N/A
RIV990703	Jurupa Ave	At Jurupa Ave and UP RR - Construct and close down Mountain View Ave at UP RR tracks	N/A
3A04A26	I-15	At Bellgrave Ave btwn Hamner Ave and Wineville Rd add signals and ramps 0.1 MI	N/A
3A01WT163	Limonite Ave	From Etiwanda Ave to Van Buren Blvd widen from 2 to 4 lanes	2012
3A01WT164	Limonite Ave	From Van Buren Blvd to Clay St widen from 4 to 6 lanes	2030
3A07016	Limonite Ave	From Hamner Ave to Etiwanda Ave widen from 2 to 4 lanes	2020
3A04WT189	Schleisman Rd	From 68th St to I-15 construct 6 lane arterial	2018
3A07014	Schleisman Rd	From I-15 to Arlington Ave construct 4 lane arterial	2030
3A01WT201	Van Buren Blvd	From SR-60 to Santa Ana River widen from 4 to 6 lanes	2030
3G01G40	Bellgrave Ave	From Bain St to Rutile St grade seperation - 2 lanes over UP RR tracks	2018

5.1.5. Access Roadways to Existing 69 kV Substations

The four existing 69 kV substations within the City that would require upgrades include: Harvey Lynn, Mountain View, Freeman, and RERC. The upgrades consist of the addition of new 69 kV power circuit breakers and associated disconnect switches and busing at RERC, Harvey Lynn, and Riverside Substations, as well as protective relay and control modifications to all four stations. Modifications to existing electrical connections would also be necessary within the substations. Upgrades would include minor structure (pole) re-alignments outside of substations to accommodate modifications of substation layout.

The 69 kV substation upgrades would not create significant impacts along the roadways and intersections that construction employees and equipment/haul trucks would use to access the sites. All substation upgrades and equipment installations would occur within the existing footprint.

5.1.6. Access Roadway to Proposed 230 kV / 69 kV Subtation

Wildlife Substation would be located on land currently owned by RPU near the northeast corner of Wilderness Avenue and Ed Perkic Street within the City. Following project approval, SCE would purchase property from RPU to accommodate the approximately three-acre Wildlife Substation. The proposed substation would connect to the SCE system via the proposed double-circuit 230 kV transmission line and to RPU's proposed Wilderness Substation via two short 230 kV spans.

Wilderness Substation (new RPU 230/69 kV) would be located on 6.4 acres adjacent to SCE's Wildlife Substation at the southern end of Wildlife Substation. The Wilderness Substation would be connected to the SCE Wildlife Substation via two short 230 kV transmission spans where the voltage would be transformed to 69 kV through two transformers located within the Wilderness Substation. Electricity would be delivered to the RPU electrical system and ultimately City customers via 69 kV subtransmission lines exiting the substation.

The new substation will not create significant impacts at intersections that construction employees and equipment/haul trucks would use to access the sites.

6.0 IMPACT ASSESSMENT—LINKS

This section provides an overview of the methodology used and the determinations made for traffic impacts along the project links, in terms of both construction and post-construction (maintenance) periods. The discussion covers the sensitivity ratings along the project links, which were the basis for determining impacts along specific lengths of the links.

6.1 METHOD – SPECIFIC ANALYSIS LOCATIONS

6.1.1. Impact Analysis for Transmission Line Corridors

Project construction within the defined links along transmission line corridors has been analyzed for traffic impacts within this document.

A new double-circuit 230 kV transmission line of approximately 7-10 miles would be placed from the proposed 230 kV / 69 kV substation and would require approximately 12 months and 117 workers.

Construction manpower and on-site equipment estimates have been prepared by Southern California Edison as part of project planning. .The focus of the analysis is based on the sensitivity rating that took into account the potential closure of travel lanes and the direct effects of closures/blockages on other facilities and resources (rail, transit systems, fire department locations and likely access routes, etc.).

6.1.2. Impact Analysis for Switching Station Sites

Impacts associated with the proposed switching station in Wildlife and the expansion of the existing substations have been analyzed for potential impacts during construction. The determination of potential traffic impacts is discussed within this report section. Recommended mitigation measures are discussed within Section 7.0 of this report.

Employee trips were established from construction manpower and equipment estimates. Construction vehicle usage has been defined by Southern California Edison for construction/upgrades at the switching station sites, but construction haul/delivery truck needs and routing between the sites and regional truck routes will be finalized when construction plans are completed.

6.1.3. Significance Criteria

The following overarching list of traffic-related significance criteria is based on state and local requirements. Quantifiable impacts for this traffic study were based on City and County traffic impact standards.

State

The CEQA Environmental Checklist Form has the following criteria in section 15 as it relates to transportation and traffic elements:

XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
e) Result in inadequate emergency access?

f) Result in inadequate parking capacity?
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Local

Level of Service (LOS) is a qualitative measure of traffic operating conditions, whereby the letter grades of "A" through "F" are assigned to a roadway facility based on volumes over a specific time period and the design capacity of that facility over the same period.

As the LOS values descend from "A" to "F," they represent progressively worsening traffic flow conditions. Table 12 shows the relationship between level of service and the performance measures for signalized and unsignalized intersections and lists the U.S. Department of Transportation Federal Highway Administration's 2000 Highway Capacity Manual (HCM) delay criteria for signalized intersections.

TABLE 12: SUMMARY OF TYPICAL LEVEL OF SERVICE DEFINITIONS

Level of Service	Signalized Intersection Control Delay (in sec/veh)	Unsignalized Intersection Control Delay (in sec/veh)
A	0 – 10	0 – 10
B	10.1 – 20	10 – 15
C	20.1 – 35	15 – 25
D	35.1 – 55	25 – 35
E	55.1 – 80	35 – 50
F	80 or more	50 or more

The County of San Bernardino has identified the minimum LOS as "C" for all County/City intersections, and Caltrans has identified the minimum LOS of "D" for State Highways with a maximum delay time of 45 seconds. Mitigation measures should generally be considered when traffic conditions are forecasted to decline to poorer levels of service.

For a typical traffic impact analysis of project construction efforts, the key impact determination is the ability of a roadway facility to continue to carry traffic volumes effectively. If at-capacity conditions are approached (LOS "E") or exceeded (LOS "F") during a construction project, primarily through capacity constraints caused by the establishment of project work areas within roadway rights-of-way, impacts should be defined and mitigated. When worsening of roadway facility operations within one of these poor LOS values (when existing conditions are already at or near capacity) occurs due to project construction, impacts should also be defined and mitigated.

Counties and municipalities frequently define acceptable and unacceptable LOS values for all or certain types of roadway facilities within the entity's jurisdiction. The acceptable/unacceptable values are used as guidelines, as key facilities must often be allowed to run at poor LOS for brief periods of the day, in order to balance the provision of capacity with average traffic conditions. Additional impact thresholds, typically based on changes in v/c values, are often used by jurisdictions to gauge significant impacts of proposed development projects.

The overall LOS and impact guidelines of the county and city jurisdictions within the project study area are as follows:

- County of Riverside - LOS "C" along County-maintained roadways and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways,

Arterials, Urban Arterials, Expressways, conventional state highways or freeway ramp intersections.

- City of Riverside –does not have any guidelines but follows Riverside County level of service standards.

LOS "C" is the minimum acceptable LOS standard for the study area jurisdictions. Therefore, impacts for major roadways (the study roadway segment points) were examined where LOS "D," "E," and "F" conditions could be caused or worsened by the project.

6.2 METHOD – SENSITIVITY ANALYSIS

This section discusses the sensitivity ratings and values utilized for determining impact potential along the length of the project links, and is focused on traffic impacts that could occur outside of the defined study roadway segment points. This sensitivity framework was then applied to establish an impact rating of "high," "moderate," or "low" by segment.

6.2.1. Sensitivity Ratings

Sensitivity ratings were developed for transportation resources that could be significantly impacted by the proposed project, in order to help determine the sensitivity to the siting and construction of the proposed transmission line. Further, the sensitivity ratings were intended to compare geographic opportunities by project links. Transportation facilities that would be crossed by the project links would have similar sensitivity to impacts based on the type of facility or resource crossed by the links, and was therefore analyzed by this specialized methodology.

Sensitivity is defined as a measure of probable adverse response of a resource to direct and indirect impacts associated with the construction, operation, and maintenance of a transmission line. Sensitivity ratings were assigned to a number of transportation resources within the study area. These ratings were based upon a relative evaluation of the resource's importance and the impact potential that construction and maintenance of a transmission line would have upon that resource for the short-term (construction period) and long-term (operations and maintenance) durations of the project. The determinations of sensitivity levels included consideration of the following:

- Roadway Classification: Functional classification is used to categorize roadways according to their predominant role in the highway network and their physical setting. Typically, the role of the roadway in the network is determined by the level of mobility provided to automobile traffic by that roadway. On this basis, the functional classification differentiates between highways, arterial, collector/secondary, and local roadways. Highways provide regional connectivity and have high sensitivity, while arterials serve those corridor movements that have long trip length and high volumes and have moderate sensitivity. Collectors serve subordinate traffic generators, and local roads provide access to individual parcels; therefore, both have a low sensitivity in terms of potential impacts.

- Closures: The construction and maintenance of the transmission line may involve temporary partial or full road closures that can have an effect on traffic flow.

- Present and Future Uses: Potential conflicts could occur with planned and programmed transportation improvement projects. Roadway widenings, as the primary example, could necessitate an intensification of mitigation measures for identified impacts.

- Traffic volume: Truck trips and construction employee trips during the construction of the transmission line may create an increase of traffic and cause significant operational service degradations on roadways.

- Access: Maintenance access between major roadways and smaller access roadways, if directly connected, could cause localized traffic delays. Where construction or maintenance access would transition from a major roadway to a new small access roadway, safety conflicts or potential significant traffic delays could occur on the main roadway due to new truck movements.

6.2.2. Sensitivity Values

Using the framework defined above, the transportation network crossed by the project transmission line corridors (including alternatives) was analyzed and assigned a relative sensitivity rating for potential impacts within the project study area. Sensitivity ratings were categorized as "high," "moderate," or "low" based upon the following characteristics:

High Sensitivity: Includes areas which have the following characteristics:

1. An increase of traffic could have a direct detrimental effect on transportation system operations, where roadways are operating at or near capacity under existing conditions;
2. A planned roadway construction project would provide a wider roadway cross-section once complete, and project construction methods would need to be modified significantly to span the road or selected travel lanes;
3. A fire station or hospital is located within ¼-mile of the project corridor and alternative access routes to those facilities around potential closures do not exist;
4. A public transit route would not have a viable alternative route (collector roadways or better) within ¼-mile of existing route; and
5. Mitigation is not likely to be effective in substantially reducing significant impacts, based on roadway shoulder characteristics, topography, and other limiting factors toward the provision of temporary travel lanes.

Moderate Sensitivity: Includes areas which have the following characteristics:

1. An increase of traffic could have a direct detrimental effect on transportation system operations, but could be mitigated to insignificance on roadways that are operating at good levels of service under existing conditions;
2. The roadway would have limited conflict with current or planned roadway classification, and project construction methods could be easily changed to accommodate any improved roadway cross-section;
3. A fire station or hospital is located within ¼-mile of the project corridor, with an alternate but longer access route to those facilities around the project-related closure; and
4. A public transit route would have a viable but longer alternate route (collector roadways or better) within ¼-mile of existing route.

Low Sensitivity: Includes areas which have the following characteristics:

1. Roadway sensitivity that has not been classified as high or moderate;
2. Planned roadway construction projects where construction methods would need little modification to accommodate minor cross-sectional or other changes;
3. Roadways where measures may be easily implemented to reduce the effects to less than significant;
4. Roadways likely used by emergency or transit vehicles, or other general access issues located on a grid system, with multiple available alternative routes on collectors or arterials.

5. Roadways that would have little or no change in traffic flow due to the construction or operation of the transmission line.

Traffic Impacts and Construction Methods

The traffic study has assumed that some ground-based construction activity will be necessary on all analyzed links, although the details of the construction methods (e.g., construction of new towers) may be different within each link. The primary concern for reviewing agencies during the development of final construction plans for the project will be the location and quantity of any necessary travel lane closures. The closure of bicycle lane facilities within work areas and the effect on rail operations, emergency vehicles response, school bus access, and other such transportation resources/modes will also be of concern.

Construction Access

Access by construction vehicles to and from construction sites within the project links, as well as direct access between existing area roadways and construction access roadways, can potentially cause localized traffic impacts. For the impact analysis, the characteristics of roadways within the study area were considered in terms of safe and efficient access to construction areas or construction access roads. This type of access would necessitate turning movements by construction vehicles from larger roadways to smaller construction access roadways.

Due to potential safety issues associated with construction access and major roadways (arterials), these were given higher sensitivity ratings.

Sensitivity Summary – Project Construction (Short-Term)

Table 13 summarizes the sensitivity ratings for the short-term period of project duration (construction activities), and the rationale for each.

TABLE 13: SHORT-TERM DURATION SENSITIVITY RATINGS FOR ROADWAYS

Short-term Duration				
Resource Component	**Sensitivity**			**Rationale**
	High	**Moderate**	**Low**	
Roadways				
Dirt and Private Roads				
Sole Route to Land Uses (non-grid)			•	Access could create closures, but detours/diversions could likely accommodate access
Collector Roadways				
Collector, Grid Street System		•		Alternate access exists, via longer travel route
Collector, non-Grid Street System	•			Access could be cut-off
Arterial Roadways				
Arterial or Mountain Road, Straight Alignment		•		Closures could cause significant traffic delays, but closures would be visible for long approach distances
Arterial or Mountain Road, Curvilinear Alignment	•			Closures could cause significant traffic delays, and may create significant traffic safety impacts due to short approach distances on curves
Highway (State Routes) or Freeway Facilities				
Any Highway or Freeway	•			Closures could cause significant traffic delays through single or multiple lane closures
Public Transportation Routes				
without alternate route within ¼- mile (non-grid)	•			Transit line temporary closures could be necessary
with alternate route within ¼- mile (grid)		•		Transit line route lengths and passenger walking distances could be lengthened
Emergency Access Route (within ¼-mile of fire station, hospital				
without alternate/ parallel route	•			Emergency access could be significantly impacted
with alternate/parallel route		•		Emergency access would not likely be impacted, but response time would potentially be increased
School Bus Routes				
Public Schools within ¼-mile		•		School bus routes could be lengthened during detour
Railroad Corridors				
Passenger Rail	•			Passenger commute service could be affected
Freight Rail		•		Freight service could be delayed
Bicycle Routes				
Class I and Class II Facilities	•			Bicycle lane closures or detours could be necessary

Sensitivity Summary – Project Operations (Long-Term)

Table 14 summarizes the sensitivity ratings for the long-term period of project duration (operations and maintenance), and the rationale for each.

TABLE 14: LONG-TERM DURATION SENSITIVITY RATINGS FOR ROADWAYS

Long-term Duration				
Resource Component	**Sensitivity**			**Rationale**
	High	**Moderate**	**Low**	
Roadways				
All Dirt and Private Roads			•	Maintenance access could create temporary closures but detours/diversions could likely accommodate access
All Local Roads			•	Maintenance access would not likely cause traffic impacts
All Collector Roads			•	Maintenance access would not likely cause traffic impacts
All Arterial Roadways			•	Maintenance access would not likely cause traffic impacts
All Highways/Freeways			•	Maintenance access would not likely cause traffic impacts
Public Transportation Routes				
All Transit Routes			•	Maintenance activity would not likely create transit impacts
School Bus Routes				
Public schools within ¼-mile			•	Maintenance activity would not likely create school bus service impacts
Railroad Corridors				
Passenger Rail			•	Maintenance activity would not likely require access to rail rights-of-way
Freight Rail			•	Maintenance activity would not likely require access to rail rights-of-way
Recreational Routes				
Class I and Class II Facilities			•	Temporary impacts during access could be mitigated through the provision of bike lane diversions/detours

6.2.3. Mitigation Planning – by Links and Sensitivity to Impacts

Potential project links impacts were analyzed based on sensitivity determinations; results are discussed in Section 7.0. Impacts to transportation/traffic resources are determined by the sensitivity rating. Areas with high impact would require specific mitigation measures and areas with moderate impact would be mitigated by general recommended mitigation measures. Areas with low impact would not require mitigation measures, due to the insignificance of potential impacts caused by the proposed project's construction and maintenance activities.

Figure 1 provides an illustration of the 230 kV project links and the mile-marker based dimensioning that was defined along each segment. Figure 2 provides an illustration of the 69 kV project links and the mile-marker based dimensioning that was defined along each segment.

FIGURE 1. 230 KV PROJECT LINKS

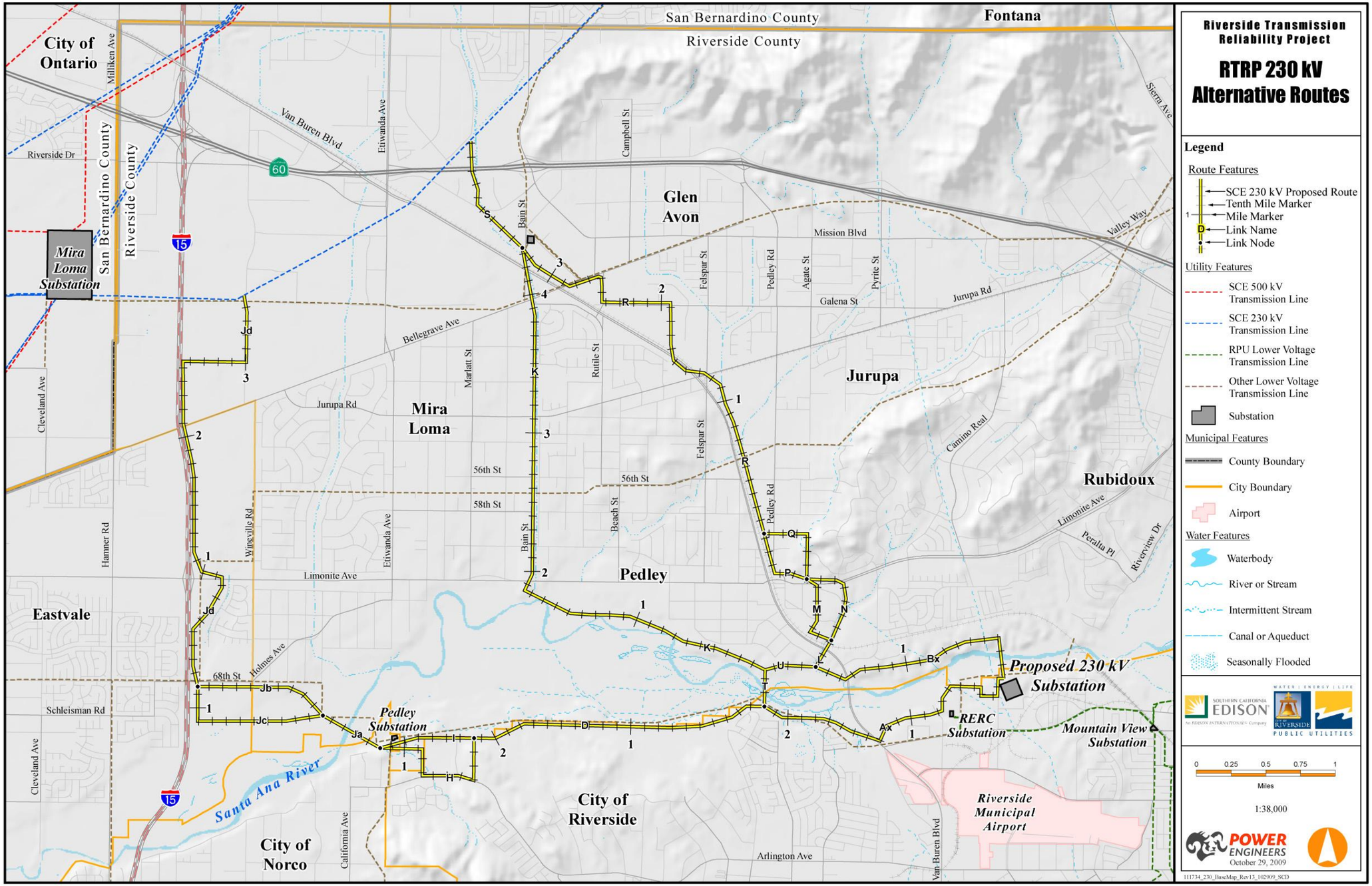

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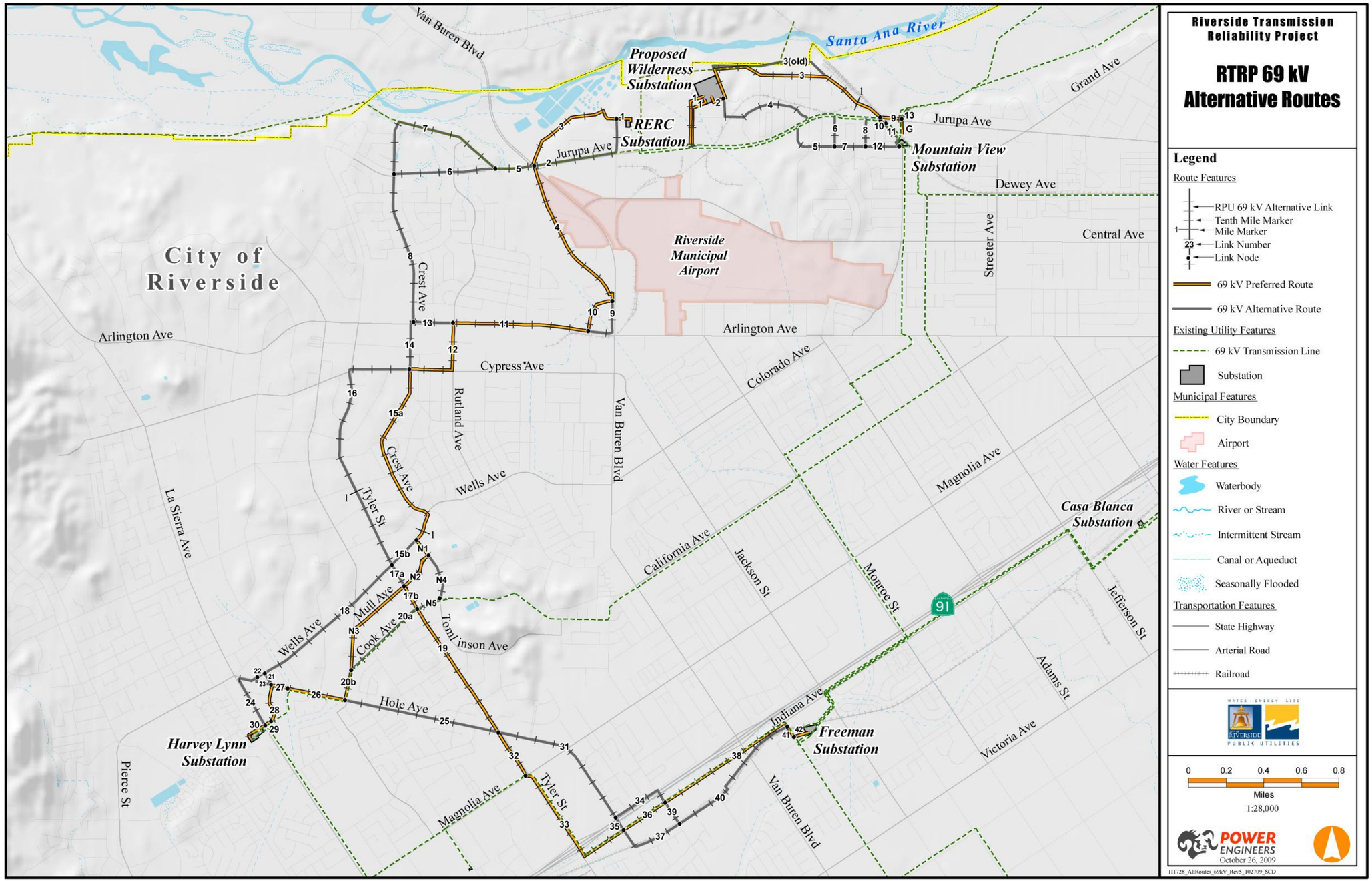
FIGURE 2. 69 KV PROJECT LINKS



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7.0 IMPACT RESULTS

This section provides determinations for significant impacts and recommended mitigation measures for transportation facilities or resources along the project links and along access roads to the new substations. The proposed project components include:

- New 230 kV Double Circuit Transmission Line
  - Build Option A – I-15 Route
  - Build Option B – Van Buren Route
- New 69 kV Circuit
  - RERC – Harvey Lynn/Freeman/Jurupa Avenue
  - Wilderness – Mountain View
- New 230 kV / 69kV Substation – Wildlife/Wilderness Substation

7.1 NEW 230 KV TRANSMISSION LINE

This sub-section provides a discussion of the sensitivity analysis results for traffic impacts associated with construction and maintenance of the proposed new 230 kV transmission line. Mitigation measures were developed for specific areas along a segment determined to have a high or moderate sensitivity due to construction impacts from the project component.

7.1.1. General Link Impact Summary

This sub-section provides a discussion of the traffic impact analysis associated with construction and maintenance activities along the proposed project links. Specific mitigation measures were developed for route links determined to have a potential for high traffic impacts resulting from the proposed project construction and maintenance activities.

Table 15 provides a summary of the sensitivity analysis – by high, moderate, and low impacts – conducted for the determination of traffic impacts on project links along the new 230 kV transmission line. Links with a potential high impact would need to have mitigation applied with specific measures; potential moderate impacts could be mitigated with general measures. Links with a potential low impact would not require mitigation measures.

TABLE 15: NEW 230 KV TRANSMISSION LINE SUMMARY OF IMPACTS (IN LINEAR MILES)

Link Number	Construction Impact			Maintenance Impact		
	Low	Moderate	High	Low	Moderate	High
Build Option A - West I-15 Route						
Link Ax	1.30	0.99	0.00	2.29	0.00	0.00
Link D	1.95	0.20	0.00	2.15	0.00	0.00
Link H	0.60	0.37	0.20	1.17	0.00	0.00
Link Ja	0.47	0.00	0.00	0.47	0.00	0.00
Link Jb	0.00	0.98	0.00	0.94	0.00	0.00
Link Jd	0.99	2.00	0.40	2.69	0.70	0.00
Build Option B - Van Buren Route						
Link Bx	1.20	0.50	0.00	1.70	0.00	0.00
Link L	0.10	0.00	0.12	0.22	0.00	0.00
Link N	0.20	0.40	0.10	0.70	0.00	0.00
Link Q	0.64	0.00	0.00	0.64	0.00	0.00
Link R	2.09	0.50	0.70	3.29	0.00	0.00
Link S	0.70	0.00	0.20	0.80	0.10	0.00

7.1.2. Employee Trip Generation

For trip generation purposes, it is assumed that each employee will be driving to the work site. Therefore, each employee would be equivalent to one vehicle round-trip (in/out). The total number of employees on site was determined based on the total manpower for that particular project component:

- New 230 kV Double-Circuit Transmission Line Component – 117 peak number of construction employees at any given time, which would potentially generate 117 daily vehicle round-trips over 12 months.

Construction and maintenance period trips would be generated by both construction or maintenance employee vehicles and equipment/haul trucks. The full effect of construction activities at major component points, such as the substations, would be caused by both construction employee trips and construction truck trips.

7.1.3. Maintenance Impacts

Once project construction is completed, high or moderate impacts would not be present as the proposed project becomes operational and enters the maintenance period.

Where access for maintenance from two-lane roadway segments would occur, there is a potential for significant traffic impacts. It is anticipated, however, that lane closures or blockages/impedances for maintenance adjacent to study area roadways would be of short duration and would not cause impacts for extended periods (during entire peak periods or for days at a time).

7.1.4. General Mitigation Measures

The following list defines general construction mitigation measures that should be applied to moderately impacted roadways during project construction to avoid significant traffic impacts to area roadways and other transportation facilities or resources. These moderately impacted roadways were defined based on the sensitivity analysis criteria as described in Section 6.2.2.

The following are the recommended general project traffic mitigation measures:

- Minimize Roadway Closures: Construction activities would be designed to minimize work on, or use of, roadways crossed by the project corridor(s).

- Incorporate Protective Measures: Any construction or installation work requiring the crossing of a roadway or railway right-of-way would incorporate the use of guard poles, netting, or similar means to protect moving traffic and structures from the activity. If necessary on state highways, continuous traffic breaks would be planned and provided.

- Prepare Traffic Control Plans: Prior to the start of construction, owner operators shall submit Traffic Control Plans (TCPs) to all agencies with jurisdiction over public roads that would be directly affected by construction activities (where road closures or encroachments would be necessary). The Plans shall define the locations of all roads that would need to be temporarily closed due to construction activities, and also define the use of flag persons, warning signs, lights, barricades, cones, and other necessary measures for each construction closure. The Plans shall include measures to avoid disruptions or delays in access for emergency service vehicles and to keep emergency service agencies fully informed of road closures, detours, and delays. Police departments, fire departments, ambulance services, and paramedic services shall be notified at least one month in advance of each closure by RPU and SCE.

- Provide for Emergency Vehicle Access: Provisions shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes developed in conjunction with local agencies. TCPs shall also identify all emergency service agencies, include contact information for those agencies, assign responsibility for notifying the service providers, and specify coordination procedures. Copies of the Plans shall be provided to all affected police departments, fire departments, ambulance, and paramedic services.

- Avoid Peak-Period Construction: To minimize traffic congestion and delays during construction to the extent feasible, RPU and SCE shall restrict all necessary lane closures or obstructions on major roadways associated with project construction activities to off-peak periods, as feasible. Lane closures should be avoided during the 6:00 a.m. to 9:00 a.m. timeframe and the 3:30 to 6:30 p.m. timeframe, or as otherwise defined within the TCPs.

- Adjust Design Based on Planned Roadway Projects: As project design and construction plans move forward, coordination will be necessary with the lead agencies on other planned roadway projects that could overlap with project construction, in order to determine if special considerations need to be made for wider roadway crossings and project timing.

- Provide Roadway Lane Diversions: Where project construction and/or maintenance access could close one or multiple lanes, and where significant degradations in roadway operations could result, roadway diversions should be provided to restore the travel lanes through temporary roadway restriping.

- Provide Bike Lane or Trail Diversions: Where project construction and/or maintenance access could close bicycle lanes or trails, temporary diversions should be provided where feasible to provide continued access around the construction or maintenance area.

- Minimize Disruption or Delays to Rail Service: SCE shall obtain permits or approvals from

each of the affected railway operators (Union Pacific Railroad and Metrolink) to ensure construction activities comply with each company's safety requirements and to avoid disruption to or congestion of rail traffic. Copies of permits shall be submitted to the California Public Utilities Commission prior to construction across or adjacent to rail lines.

- Minimize Disruption or Delays to Public Bus Service: RPU and SCE shall coordinate with the public bus service providers at least 30 days prior to construction in the service territory to reduce the potential interruption of bus transit services.

- Provide Access to Nearby Recreation Areas: Where project construction and/or maintenance access could cut off access to nearby recreation areas, and where no alternate route exists to the recreation areas, measures should be used to provide a minimum of on-lane reversible access (with flagmen) through the construction/maintenance area, or work should only be conducted during off-peak or evening hours.

- Repair Damaged Streets: Any damage to local roadways caused by project construction and/or maintenance should be repaired and the roadways should be restored to their previous condition.

7.1.5. Recommended Specific Mitigation Measures

Based on the impact analysis, and the determination for high impacts, the following recommended specific mitigation measures were developed. Moderate or high impacts in all areas can be mitigated to a less-than-significant level with the recommended set of mitigation measures.

Recommended mitigation measures are provided below for the new 230 kV transmission line component. They are based on categories of resources and a potential for high impacts to traffic/transportation resources. In some instances, multiple impact types may apply on one roadway link. For example, a roadway may be potentially impacted due to its status as a major facility (freeway or highway/arterial) but also be potentially impacted due to the presence of bicycle lanes and a transit route. The recommendations are as follows:

Build Option A – I15 Route

Link Ax

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with Class I or Class II bicycle facility – Provide construction closures that allow for continued bicycle access within the existing facilities during all times, or provide a safe diversion of the bicycle facility around the construction zone.
- Roadway with hospital/medical facility access need – In addition to the general Traffic Control Posts (TCP) requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link D

- Roadway with Class I or Class II bicycle facility – Provide construction closures that allows for continued bicycle access within the existing facilities during all times, or provide a safe diversion of the bicycle facility around the construction zone.

Link H

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with Class I or Class II bicycle facility – Provide construction closures that allows for continued bicycle access within the existing facilities during all times, or provide a safe diversion of the bicycle facility around the construction zone.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link Ja

- Roadway with Class I or Class II bicycle facility – Provide construction closures that allows for continued bicycle access within the existing facilities during all times, or provide a safe diversion of the bicycle facility around the construction zone.

Link Jb

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

Link Jd

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

Build Option B – Van Buren Route

Link Bx

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with Class I or Class II bicycle facility – Provide construction closures that allows for continued bicycle access within the existing facilities during all times, or provide a safe diversion

of the bicycle facility around the construction zone.

Link L

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Passenger rail route – Provide construction plans that do not require closure of rail lines to scheduled trains.
- Freight rail route – Provide construction plans that do not require temporary closures of the rail line of more than 30 minutes in duration.

Link N

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.

Link Q

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

Link R

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Passenger rail route – Provide construction plans that do not require closure of rail lines to scheduled trains.
- Freight rail route – Provide construction plans that do not require temporary closures of the rail line of more than 30 minutes in duration.

Link S

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Passenger rail route – Provide construction plans that do not require closure of rail lines to scheduled trains.
- Freight rail route – Provide construction plans that do not require temporary closures of the rail line of more than 30 minutes in duration.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Freeway Facilities – Provide construction plans that keep all travel lanes open during peak periods of travel (6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 7:00 p.m.).

High impacts were not defined during the maintenance/operations period. Therefore, traffic impact mitigation measures were not recommended for the operations and maintenance period of the project transmission lines and related facilities.

With the implementation of these recommended mitigation measures, the resulting traffic impacts to each type of transportation resource would be less than significant.

7.2 NEW 69 KV SUBTRANSMISSION LINES

This sub-section provides a discussion of the impact results for the sensitivity analysis conducted for traffic impacts associated with the proposed new 69 kV subtransmission lines, which are comprised of multiple segments. Specific mitigation measures were developed for segment links determined to have a moderate to high sensitivity rating due to construction impacts from the project component.

7.2.1. General Link Impact Summary

This sub-section provides a discussion of the traffic impact results identified for the new 69 kV subtransmission lines component of the proposed project. Specific mitigation measures were developed for segment links determined to have high traffic impacts from the project.

Utilizing the sensitivity ratings discussed in Section 6.0, potential impacts during the construction and maintenance phases of the project were determined.

Tables 16 and 17 provide a summary of the impacts – by high, moderate, and low – conducted for the determination of traffic impacts within the new 69 kV subtransmission linescomponent. Links with a potential high impact would need to have mitigation applied with specific measures; potential moderate impacts could be mitigated with general measures. Links with a low impact would not require mitigation measures.

TABLE 16: NEW 69 KV SUBTRANSMISSION LINES-SUMMARY OF IMPACTS (IN LINEAR MILES) RERC TO FREEMAN/HARVEY LYNN

	Construction Impact			Maintenance Impact		
Link Number	**Low**	**Moderate**	**High**	**Low**	**Moderate**	**High**
69 kV Transmission Line - RERC to Freeman Preferred						
	0.15	0.00	0.00	0.15	0.00	0.00
3	0.80	0.00	0.10	0.90	0.00	0.00
4	0.85	0.00	0.00	0.85	0.00	0.00
10	0.25	0.00	0.00	0.25	0.00	0.00
11	0.00	0.70	0.00	0.70	0.00	0.00
12	0.00	0.40	0.00	0.40	0.00	0.00
15a	0.00	1.01	0.00	1.01	0.00	0.00
N1	0.00	0.10	0.00	0.10	0.00	0.00
N2	0.00	0.20	0.00	0.20	0.00	0.00
17b	0.00	0.10	0.05	0.15	0.00	0.00
19	0.00	0.70	0.00	0.70	0.00	0.00
32	0.00	0.20	0.00	0.20	0.00	0.00
33	0.00	0.00	1.00	1.00	0.00	0.00
36	0.00	0.20	0.00	0.20	0.00	0.00
38	0.00	0.00	0.70	0.70	0.00	0.00
41	0.00	0.00	0.10	0.10	0.00	0.00
42	0.10	0.00	0.00	0.10	0.00	0.00
69 kV Transmission Line - RERC to Harvey Lynn Preferred						
	0.15	0.00	0.00	0.15	0.00	0.00
3	0.80	0.00	0.10	0.90	0.00	0.00
4	0.85	0.00	0.00	0.85	0.00	0.00
10	0.25	0.00	0.00	0.25	0.00	0.00
11	0.00	0.70	0.00	0.70	0.00	0.00
12	0.00	0.40	0.00	0.40	0.00	0.00
15a	0.00	1.01	0.00	1.01	0.00	0.00
N1	0.00	0.10	0.00	0.10	0.00	0.00
N2	0.00	0.20	0.00	0.20	0.00	0.00
N3	0.00	0.10	0.00	0.10	0.00	0.00
20b	0.00	0.60	0.00	0.60	0.00	0.00
26	0.00	0.30	0.00	0.30	0.00	0.00
27	0.00	0.10	0.00	0.10	0.00	0.00
28	0.00	0.20	0.00	0.20	0.00	0.00
29	0.00	0.05	0.00	0.05	0.00	0.00
30	0.00	0.50	0.00	0.50	0.00	0.00

TABLE 17: NEW 69 KV CIRCUIT SUMMARY OF IMPACTS (IN LINEAR MILES) WILDERNESS TO RERC/MOUNTAIN VIEW

	Construction Impact			Maintenance Impact		
Link Number	Low	Moderate	High	Low	Moderate	High
69 kV Transmission Line - Wilderness to RERC Preferred						
1	0.00	0.10	0.00	0.10	0.00	0.00
69 kV Transmission Line - Wilderness to Mountain Preferred						
2	0.08	0.00	0.00	0.08	0.00	0.00
3	0.90	0.00	0.00	0.90	0.00	0.00
9	0.00	0.10	0.00	0.10	0.00	0.00

7.2.2. Employee Trip Generation

For trip generation purposes, it is assumed that each employee will be driving to the work site. Therefore, each employee would be equivalent to one vehicle round-trip (in/out). The total number of employees on site was determined based on the total manpower for that particular project component:

- New 69 kV Circuit Component – 63 peak number of construction employees at any given time, which would potentially generate 63 daily vehicle round-trips over 12 months.

Construction and maintenance period trips would be generated by both construction or maintenance employee vehicles and equipment/haul trucks.

7.2.3. Maintenance Impacts

Once project construction is completed, high or moderate impacts would not be present as the proposed project becomes operational and enters the maintenance period.

There is a potential for significant traffic impacts where access for maintenance from two-lane roadway segments would occur. It is anticipated, however, that lane closures or blockages/impedances for maintenance adjacent to study area roadways would be of short duration and would not cause impacts for extended periods (during entire peak periods or for days at a time).

7.2.4. General Mitigation Measures

The following list defines general construction mitigation measures that should be applied to moderately impacted roadways during project construction to avoid significant traffic impacts to area roadways and other transportation facilities or resources. These moderately impacted roadways were defined based on the sensitivity analysis criteria presented in Section 6.2.2.

The following are the recommended general project traffic mitigation measures:

- Minimize Roadway Closures: Construction activities would be designed to minimize work on, or use of, roadways crossed by the project corridor(s).

- Incorporate Protective Measures: Any construction or installation work requiring the crossing of a roadway or railway right-of-way would incorporate the use of guard poles, netting, or similar means to protect moving traffic and structures from the activity. If necessary on state highways, continuous traffic breaks would be planned and provided.

- Prepare Traffic Control Plans: Prior to the start of construction, RPU and SCE shall submit Traffic Control Plans (TCPs) to all agencies with jurisdiction over public roads that would be directly affected by construction activities (where road closures or encroachments would be necessary). The Plans shall define the locations of all roads that would need to be temporarily closed due to construction activities, and also define the use of flag persons, warning signs, lights, barricades, cones, and other necessary measures for each construction closure. The Plans shall include measures to avoid disruptions or delays in access for emergency service vehicles and to keep emergency service agencies fully informed of road closures, detours, and delays. Police departments, fire departments, ambulance services, and paramedic services shall be notified at least one month in advance of each closure by RPU and SCE.

- Provide for Emergency Vehicle Access: Provisions shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, short detours, and alternate routes developed in conjunction with local agencies. TCPs shall also identify all emergency service agencies, include contact information for those agencies, assign responsibility for notifying the service providers, and specify coordination procedures. Copies of the Plans shall be provided to all affected police departments, fire departments, ambulance, and paramedic services.

- Avoid Peak-Period Construction: To minimize traffic congestion and delays during construction to the extent feasible, RPU and SCE shall restrict all necessary lane closures or obstructions on major roadways associated with project construction activities to off-peak periods, as feasible. Lane closures should be avoided during the 6:00 a.m. to 9:00 a.m. timeframe and the 3:30 to 6:30 p.m. timeframe, or as otherwise defined within the TCPs.

- Adjust Design Based on Planned Roadway Projects: As project design and construction plans move forward, coordination will be necessary with the lead agencies on other planned roadway projects that could overlap with project construction, in order to determine if special considerations need to be made for wider roadway crossings and project timing.

- Provide Roadway Lane Diversions: Where project construction and/or maintenance access could close one or multiple lanes, and where significant degradations in roadway operations could result, roadway diversions should be provided to restore the travel lanes through temporary roadway restriping.

- Provide Bike Lane or Trail Diversions: Where project construction and/or maintenance access could close bicycle lanes or trails, temporary diversions should be provided where feasible to provide continued access around the construction or maintenance area.

- Minimize Disruption or Delays to Rail Service: SCE shall obtain permits or approvals from each of the affected railway operators (Union Pacific Railroad and Metrolink) to ensure construction activities comply with each company's safety requirements and to avoid disruption to or congestion of rail traffic. Copies of permits shall be submitted to the California Public Utilities Commission prior to construction across or adjacent to rail lines.

- Minimize Disruption or Delays to Public Bus Service: RPU and SCE shall coordinate with the public bus service providers at least 30 days prior to construction in the service territory to reduce the potential interruption of bus transit services.

- Provide Access to Nearby Recreation Areas: Where project construction and/or maintenance access could cut off access to nearby recreation areas, and where no alternate route exists to the recreation areas, measures should be used to provide a minimum of on-lane reversible access (with flagmen) through the construction/maintenance area, or work should only be conducted during off-peak or evening hours.

- Repair Damaged Streets: Any damage to local roadways caused by project construction and/or maintenance should be repaired and the roadways should be restored to their previous condition.

7.2.5. Recommended Specific Mitigation Measures

Based on the impact analysis, and the determination for high impacts, the following recommended specific mitigation measures were developed. Moderate or high impacts in all areas can be mitigated to a less-than-significant level with the recommended set of mitigation measures.

Recommended mitigation measures are provided below for the new 69 kV circuit component. They are based on categories of resources and a potential for impacts to traffic/transportation resources. In some instances, multiple impact types may apply on one roadway link. For example, a roadway may be potentially impacted due to its status as a major facility (freeway or highway/arterial) but also be potentially impacted due to the presence of bicycle lanes and a transit route. The recommendations are as follows:

RERC to Freeman/Harvey Lynn Routes

Link 1

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

Link 3,11

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link 12,15a,17b,19

- Residential Streets – Provide construction closures that keep at least one lane of traffic open in

each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link N1, N3

- Residential Streets– Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link 20b,26

- Arterials, straight alignments – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Bus transit route – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) during times of transit line operation, unless an adequate detour route can be found within ¼-mile of the closure point.
- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with likely school bus access need – Provide construction closures that keep at least one lane of traffic open with reversible flow (via flagmen) at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Link 27,28,29,30

- Residential Streets – Provide construction closures that keep at least one lane of traffic open in

each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

- Roadway with hospital/medical facility access need – In addition to the general TCP requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.
- Roadway with likely fire station access need – In addition to the general Traffic Control Plan requirements, provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good LOS in traffic operations.

Wilderness to RERC/Mountain View Routes

Link 1,9

- Residential Streets – Provide construction closures that keep at least one lane of traffic open in each direction of travel at all times, or provide adequate lane capacity to generally provide a good level of service in traffic operations.

High impacts were not defined during the maintenance/operations period. Therefore, traffic impact mitigation measures were not recommended for the operations and maintenance period of the project transmission lines and related facilities.

With the implementation of these recommended mitigation measures, the resulting significant traffic impacts to each type of transportation resource would be less than significant.

7.3 WILDLIFE AND WILDERNESS SUBSTATIONS

The analysis of the new substations (Wildlife and Wilderness) is based on assumptions of hauling/delivery truck and employee vehicle routes to and from the site. The substations could potentially create significant impacts along roadways and intersections that construction employees and equipment or haul trucks would use to access the site. The routes used to reach the new substation site from the freeway corridor are commute routes and would generally not have excess capacity during peak commute times to adequately accommodate construction traffic, especially on roadway facilities close to the freeway corridor. Potential traffic impacts could occur at major intersections and at freeway interchanges.

The following overarching list of traffic-related significance criteria is based on state and local requirements. Quantifiable impacts for this traffic study were based on City and County traffic impact standards and general engineering principles of roadway capacity.

7.3.1. Specific Roadway Impact Level of Service Summary

Table 18 compares the existing LOS calculations that were conducted with the peak hour volumes to the existing with project LOS calculations.

TABLE 18: LEVEL OF SERVICE SUMMARY

Intersection	Existing		Existing WITH Project		Increase	Impact?
Weekday AM Peak Hour (Delay/Level of Service)						
Wilderness Ave at Jurupa Ave						
Worse Case	2.1	A	2.7	A	0.6	No
Average Delay	19.6	C	22.6	C	3.0	No
Van Buren Blvd. at Jurupa Ave.	37.0	D	39.1	D	2.1	No
Weekday PM Peak Hour (Delay/Level of Service)						
Wilderness Ave at Jurupa Ave						
Worse Case	2.2	A	3.0	A	.8	No
Average Delay	18.4	C	19.8	C	1.4	No
Van Buren Blvd. at Jurupa Ave.	44.2	D	46.5	D	2.3	No

Generally, traffic control plans and truck routing plans will need to be submitted to the local review jurisdictions before construction plans are finalized. Incorporating the recommended mitigation measures into such plans would fully mitigate significant construction impacts of the new substation project component.

7.3.2. Trip Generation

Employee

For trip generation purposes, it is assumed that each employee will be driving to the work site. Therefore, each employee would be equivalent to one vehicle round-trip (in/out). The total number of employees on site was determined based on the total manpower for the new substation sites:

- Wildlife Substation – 82 peak number of construction employees at any given time, which would potentially generate 82 vehicle round-trips.
- Wilderness Substation – 82 peak number of construction employees at any given time, which would potentially generate 82 vehicle round-trips.

Truck Deliveries

For trip generation purposes, it is assumed that deliveries would be arriving to the work site via Van Buren Boulevard and Jurupa Avenue. Therefore, each delivery would be equivalent to one vehicle round-trip (in/out). The total number of deliveries on site was determined based on previous experience with such projects:

- Wildlife Substation - 162 daily deliveries at any given time, which would potentially generate 324 vehicle round-trips
- Wilderness Substation – 162 daily deliveries at any given time, which would potentially generate 324 vehicle round-trips.

TABLE 19: TRIP GENERATION SUMMARY

	Daily	AM PEAK HOUR		PM PEAK HOUR	
		AM IN	AM OUT	PM IN	PM OUT
Wildlife Substation	324	52	17	17	52
Wilderness Substation	324	52	17	17	52

It was assumed that one substation would be constructed at a time with the same number of employees working on both substations.

7.3.3. Maintenance Impacts

There is potential for significant traffic impacts to occur during the project construction period. However, once construction is completed and the project becomes operational, no significant traffic impacts are anticipated.

7.3.4. General Mitigation Measures

The following list defines general construction mitigation measures that should be applied during project construction to avoid significant traffic impacts to area roadways and other transportation resources. Without mitigation, significant reductions to facility LOS or the restriction or delay of access for various modes could occur.

The proposed site for the substations is generally located to the east of the intersection of Van Buren Boulevard and Jurupa Avenue. Roadways within the City of Riverside would need to be used by construction trucks and employee vehicles to reach the construction site. The construction vehicle route of Van Buren Boulevard to Jurupa Avenue, which would be used for construction truck trips between the SR-60 and SR-91 freeways and the substation construction site, was considered for the impact analysis. The following mitigation measures are recommended for this analyzed route:

- Avoid peak-period travel times (6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.) for the scheduling of construction truck trips in order to avoid potential impacts at major intersections and the freeway interchange access location within the City of Riverside and the unincorporated County area where the substations would be located.
- Schedule truck trips to avoid platooning of large vehicles at local intersections, freeway access locations, and construction site access points. This would help to avoid significant impacts to turn movements at intersections, where project construction vehicles could occupy excess capacity of the turn lane pockets.

After project construction is complete, the new substations would not generate any significant new trip activity; impacts of operations would therefore be less than significant.

7.3.5. Cumulative Mitigation Measures

Planned area roadway projects that could overlap with construction efforts related to the proposed project were identified within Section 5.0 of this report. Coordination will be necessary with the responsible jurisdictions for these projects during construction planning for the proposed project. In addition, coordination will be necessary with SCE and other power providers implementing other power transmission projects within the study area, to ensure that any construction closure overlaps within the transportation network occur successfully. The closure of additional travel lanes, or negative access effects to additional transportation facilities or resources, should be avoided due to overlapping construction periods.

7.4 EXPANSION OF SUBSTATIONS

The analysis for the expansion of the existing Harvey Lynn, Freeman, RERC, and Mountain View substations is based on assumptions of hauling/delivery truck and employee vehicle routes to and from each site. Generally, traffic control plans and truck routing plans will need to be submitted to the local review jurisdictions before construction plans are finalized. Incorporating the recommended mitigation measures into such plans would fully mitigate significant construction impacts of the proposed expansion of the switching stations.

7.4.1. Employee Trip Generation

For trip generation purposes, it is assumed that each employee will be driving to the work site. Therefore, each employee would be equivalent to one vehicle round-trip (in/out). The total number of employees on site was determined based on the total manpower needed for the expansion of the substation sites:

- Substations - 72 peak number of construction employees at any given time, which would potentially generate 72 daily vehicle round-trips over 12 months.

7.4.2. Maintenance Impacts

There is potential for significant traffic impacts to occur during the project construction period. However, once construction is completed and the project becomes operational, no significant traffic impacts are anticipated.

7.4.3. General Mitigation Measures

The following list defines general construction mitigation measures that should be applied during project construction to avoid significant traffic impacts to area roadways and other transportation resources. Without mitigation, significant reductions to facility LOS or the restriction or delay of access for various modes could occur.

The proposed substation expansion sites are generally located within the City of Riverside. Local City and County roadways would need to be used by construction trucks and employee vehicles to reach the construction site. The following mitigation measure is recommended:

- Avoid peak-period travel times (6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.) for the scheduling of construction truck trips, in order to avoid potential impacts at major intersections and the freeway interchange access location within the City of Riverside and the unincorporated County area where the substations are located.

After project construction is complete, the expanded substations would not generate any significant new trip activity; impacts of operations would therefore be less than significant.

7.4.4. Cumulative Mitigation Measures

Planned area roadway projects that could overlap with construction efforts related to the proposed project were identified within Section 5.0 of this report. Coordination will be necessary with the responsible jurisdictions for these projects during construction planning for the proposed project.

8.0 ALTERNATIVES

CEQA requires consideration of a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project, but avoid or substantially lessen any of the significant or adverse effects of the proposed project.

8.1 DEVELOPMENT OF ALTERNATIVES

A range of alternatives were identified as a result of a siting study, the scoping process, and supplemental studies and consultations. A full discussion of alternatives development can be found in Chapter 6. Chapter 6 (1) documents the range of alternatives that have been considered and evaluated, (2) describes the approach and methods used in evaluating potential alternatives according to guidelines established under CEQA, (3) provides rationale for recommendation to eliminate or retain alternatives for further study in the EIR, and (4) recommends reasonable alternatives that would meet the purpose and need for the project.

8.2 NO ACTION ALTERNATIVE

CEQA Guidelines (Section 15126.6(e)) require the analysis of the No Action Alternative. Under the No Action Alternative, the construction of a new 230 kV transmission line, the addition of a new 69 kV circuit, the construction of new 230 kV / 69 kV substations, or the expansion of the existing substations would not occur. The EIR must address the resulting environmental effects from taking no action and compare it to the effects of permitting the proposed project or an alternative to the proposed project.

Under the no action alternative, there would be no impacts to the study area since the project would not be constructed. As a result, conditions of the roadways would remain in their existing state.

8.3 CUMULATIVE IMPACTS

Table 11 in Section 5.1.4.1 of this report provided a list of planned area roadway projects. As project design and construction plans move forward, coordination will be necessary with the lead agencies on these roadway projects in order to determine if special considerations need to be made for wider roadway crossings and project timing. With proper coordination across these multiple projects, cumulative construction impacts of the projects would be less than significant.

The cumulative impacts of the multiple area roadway and utility projects during the maintenance periods for these projects would be minimal, as each project would not generate new daily vehicle trips. Therefore, cumulative impacts during the maintenance period of the proposed project would be less than significant.