CHAPTER 1: PURPOSE AND NEED

1.1 INTRODUCTION

This draft Environmental Impact Report (DEIR) has been prepared to evaluate the potential environmental impacts associated with construction and operation of the Riverside Transmission Reliability Project (RTRP or Proposed Project). In addition, it presents recommended mitigation measures that, if adopted, would avoid or minimize the RTRP's potentially significant environmental impacts. This DEIR identifies and analyzes a range of reasonable alternatives that could avoid or minimize potentially significant environmental impacts associated with the Proposed Project, including the No Project and other alternatives (see Chapter 6).

All non-exempt discretionary projects proposed to be carried out or approved by public agencies within the State of California are required to undergo an environmental review in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21080 (a)).

This DEIR has been prepared pursuant to the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) and CEQA Statutes provided in California Public Resources Code Section 21000 et seq. CEQA was enacted in 1970 by the California legislature to disclose to decision makers and the public the significant environmental effects of proposed activities and the ways to avoid or reduce those effects by requiring implementation of feasible alternatives or mitigation measures.

Pursuant to CEQA, an Initial Study was prepared to determine whether the proposed RTRP may have significant effects on the environment. The result showed that preparation of an Environmental Impact Report (EIR) was necessary. The City of Riverside (City) is the Lead Agency that prepared the Initial Study to make the significance determination and define the scope of this DEIR.

1.1.1 DECISION MAKING PROCESS

The City of Riverside is the Lead Agency for the Proposed Project, and the California Public Utilities Commission (CPUC) is a Responsible Agency under CEQA. As the Lead Agency, the City made a determination that the RTRP was a "project," determined that the Proposed Project should be classified as non-exempt, and that possible significant effects on the environment could occur.

To date, the Lead Agency has prepared an Initial Study, made the decision to prepare a DEIR, sent out a Notice of Preparation (NOP) to agencies including the Responsible Agency, and has prepared this DEIR. The Initial Study and NOP were sent to the Responsible Agency and to trustee agencies and the public for a 30-day review on November 18, 2009. Additionally, the City held several public informational meetings and a scoping meeting on December 3, 2009 to solicit further input from the public. The comments received in response to the NOP and at the scoping meeting are summarized in Chapter 7, Scoping and Public Involvement (section 7.4) and have been addressed in this DEIR.

Lead Agency

Following the 60-day Public Review Period of the DEIR, the Lead Agency (the City) will prepare a final EIR (FEIR), which will incorporate written responses to the comments received on the DEIR. The FEIR and other evidence in the administrative record will then be presented to the City Council for consideration and certification. If the City approves the Proposed Project, the Responsible Agency (the CPUC) would then consider the FEIR and make a determination on the Proposed Project as required by State CEQA Guidelines Section 15096.

1.1.2 COMMENT PERIOD

One of the primary objectives of CEQA is to enhance public participation in the process of planning a project. This DEIR is meant to inform agencies and the public of potentially significant environmental effects associated with the Proposed Project, to describe and evaluate reasonable alternatives to the Proposed Project, and to propose feasible mitigation measures that will avoid or reduce the Proposed Project's potentially significant effects.

As stated previously, this document is being circulated for 60 days in order to allow interested members of the public and affected agencies time to review the document and prepare and submit comments. Written responses will be prepared for all comments received during the public comment period. Responses to any comments received and any necessary revisions to the DEIR will be provided in the FEIR.

This DEIR was published on August 1, 2011. The 60-day CEQA comment period will end September 30, 2011.

1.1.3 REQUIRED EIR CONTENTS

This DEIR includes all sections required by CEQA. Table 1.1-1 contains a list of sections required under CEQA, along with a reference to the chapter in which they can be found.

TABLE 1.1-1. REQUIRED EIR CONTENTS

Requirement/CEQA Section	Location in EIR
Table of Contents (Section 15122)	Table of Contents
Summary (Section 15123)	Executive Summary
Project Description (Section 15124)	Chapter 2
Environmental Impact Analysis (Section 15125 – 15126.2)	Chapter 3
Cumulative Impacts (Section 15130)	Chapter 4
Growth-Inducing Impact of the Proposed Project (Section 15162.2[d])	Chapter 5
Alternatives to the Proposed Project (Section 15126.6)	Chapter 6
Public and Agency Coordination (Section 15129)	Chapter 7
Organizations and Persons Consulted (Section 15129)	Chapter 7

1.2 PURPOSE OF THE PROPOSED PROJECT

CEQA guidelines require a statement of the underlying purpose of a project developed within the context of specific project objectives (Section 15124(b)). This section presents a description of the purpose of the Proposed Project with sufficient context to allow the reader to understand its

development. Chapter 2 (Project Description) presents a list of project objectives to aid decision makers.

The City of Riverside Public Utilities Department (RPU) provides electric service for customers in the City. Power is delivered to RPU through the regional bulk transmission system owned by Southern California Edison Company (SCE) and operated by the California Independent System Operator (CAISO).

RPU's mission statement includes a commitment to provide the highest quality electric service to its customers. The Board of Public Utilities sets policy for RPU to fulfill this mission and has been concerned since the early 1990s about the capacity of the system to supply RPU customers, as well as the reliability of the existing single point of service with the regional transmission system. Beginning in 2006, the City's electric demand exceeded the capacity of the interconnection with the regional system.

In 2004, pursuant to SCE's Federal Energy Regulatory Commission (FERC)-approved Transmission Owner (TO) Tariff, RPU made a request for SCE to develop a means to provide additional transmission capacity to meet projected load growth and to provide a second interconnection 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 expansion would be accomplished by the:

- creation of a new SCE 230 kilovolt (kV) transmission interconnection,
- construction of a new SCE substation,
- construction of a new RPU substation, and
- expansion of the RPU 69 kV system.

SCE then reviewed a range of alternatives that would provide that second source of transmission. The alternative that was considered to best meet RPU's request is presented herein as the Proposed Project (Chapter 2); other identified alternatives are presented as project alternatives (Chapter 6). The Proposed Project would provide RPU with long-term system capacity for load growth, and needed system reliability and flexibility.

The majority of the regional transmission system in California is operated by the CAISO, including SCE's bulk power transmission system. Electric energy delivered through the CAISO transmission system to RPU's local system is delivered by RPU to customers that are within the City. In 2006, SCE presented the problem and its solutions to the CAISO. Upon review, the CAISO concluded that the proposed interconnection and other elements identified above were needed. At the June 14, 2006 CAISO Board of Governors meeting, CAISO directed SCE to build the interconnection and other elements as determined as soon as possible and preferably no later than June 30, 2009.

If approved, the additional transmission capacity included in the Proposed Project would become available through a new substation, named Wildlife Substation. Wildlife Substation would be a 230 kV substation and would be owned and operated by SCE. This substation would be connected to the electric transmission grid by connecting to the existing Mira Loma to Vista #1 transmission line. The voltage of the electrical power would be transformed to 69 kV for

integration into the RPU electrical system serving the City. This transformation or "stepping down" of power from 230 kV to 69 kV would take place at a second new substation, named Wilderness Substation. Wilderness Substation would be a 230/69 kV substation and would be owned and operated by RPU. Wildlife and Wilderness Substations would be located within the City, adjacent to each other on property that is presently owned by RPU.

Currently, RPU's 69 kV system is a single system supported exclusively by SCE's Vista Substation, located in the City of Grand Terrace. The entire City will lose electrical service if service is interrupted from Vista Substation. 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 grid connection 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 electrical systems 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.

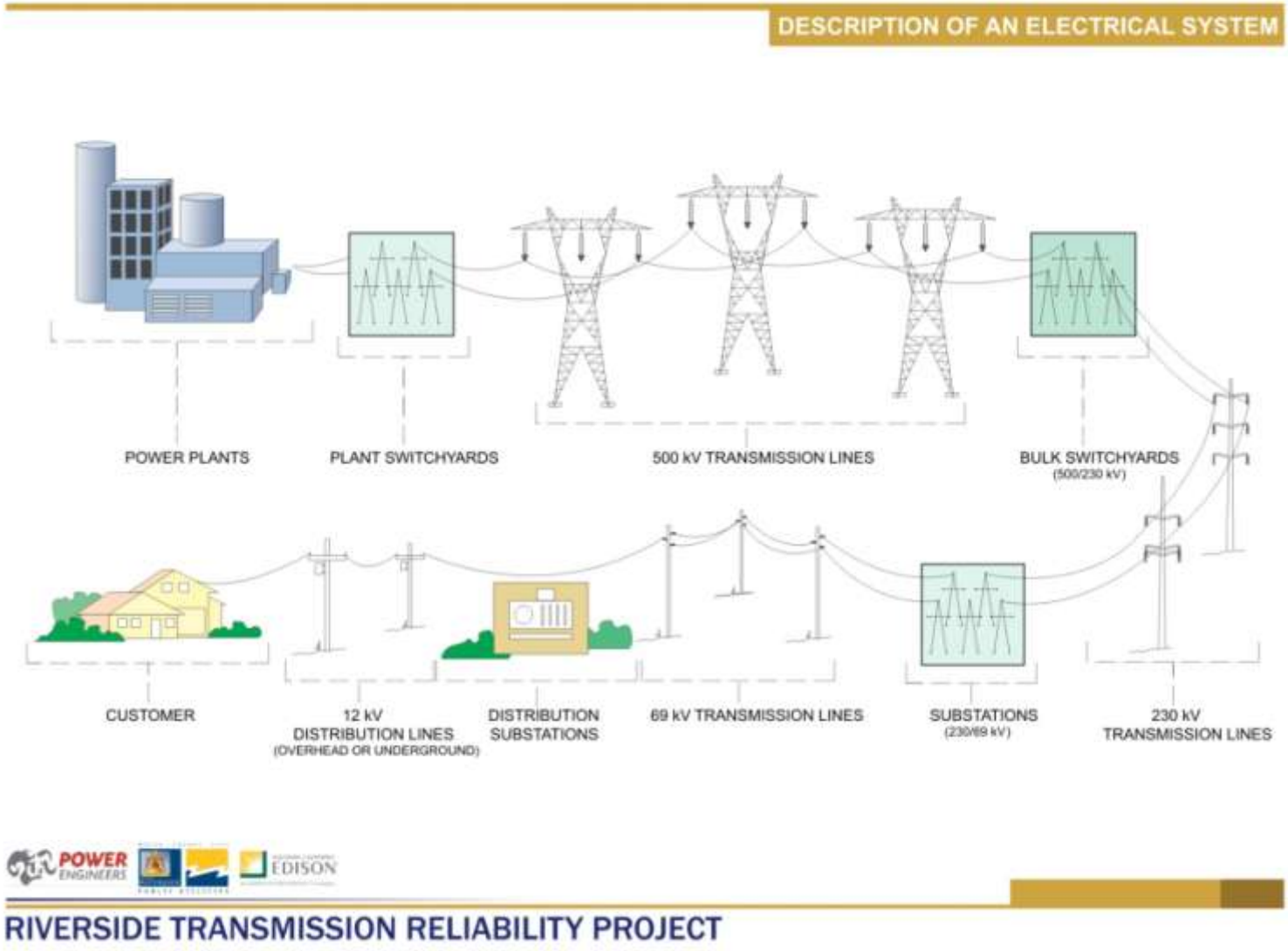
1.3 DESCRIPTION OF AN ELECTRICAL SYSTEM

Electric power is generated at power generation plants, typically at some distance from the consumers. The power generated at the power plants is usually connected to a regional electrical system, comprising high voltage transmission lines and substations, which normally operate at 230 kV and higher. Electrical substations "step down" or reduce the voltage so that the power can then be sent over subtransmission lines, such as the 69 kV lines that make up the RPU electrical system, to distribution substations. At the distribution substations, the voltage is again stepped down to a lower voltage, typically 12 kV. The power is then transmitted through a series of electric distribution lines and transformers located close to the final consumer and delivered generally at voltages between 120 and 480 volts. Figure 1.3-1 illustrates this process.

Electricity is sometimes referred to as "electric energy," or alternatively as "electric power" or "electric demand." Electric demand or power is the instantaneous demand for electricity by all customers connected to the electric system at one point in time and is measured in watts, kilowatts (1,000 watts), or megawatts (1,000,000 watts). This demand must be supplied instantaneously by power generators connected to the electric system. The power of the generators and capacity of the system must be equal to the size of demand of the customers.

Electric energy is the average demand of customers measured over time and is expressed in watt-hours, kilowatt-hours (1,000 watt-hours), or megawatt-hours (1,000,000 watt-hours).

FIGURE 1.3-1. DESCRIPTION OF AN ELECTRICAL SYSTEM



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1.4 BACKGROUND

1.4.1 EARLIER WORK TO ESTABLISH A NEW INTERCONNECTION

A new 230 kV interconnection with the City of Riverside was first studied by SCE and RPU in the 1960s. RPU wanted to establish a new source of supply that would replace the service being received from Vista Substation. Once the new interconnection was established, service from Vista Substation was to be terminated. This differs from the Proposed Project, RTRP, which will establish a new interconnection with the SCE grid, while also maintaining the existing service from Vista Substation. The initial effort continued into the 1970s, culminating in the construction of a second Mira Loma – Vista 230 kV transmission line, but not a new interconnection for RPU. The timing of the RPU portion of the project was based on a load forecast that was challenged during the project approval process, and which eventually proved to be higher than what was actually experienced. This differs from today's conditions in that, beginning in 2006, the RPU electrical demand has actually exceeded the capacity at Vista Substation to serve the demand requiring local generation during peak load conditions.

1.4.2 PRESENT WORK TO ADDRESS LOAD AND RELIABILITY NEEDS

In November 2004, the Riverside City Council and Board of Public Utilities authorized RPU to enter into an agreement with SCE for the completion of a System Impact Study and Facilities Study, pursuant to SCE's TO Tariff. The studies were completed in October 2005. The results of the SCE studies, in addition to other RPU electric system planning studies (System Impact Study 2006, described below), identified the need to expand the SCE 230 kV transmission system to provide additional electric power capacity to RPU as follows:

- Construct a new 230 kV substation (Wildlife Substation) within Riverside city limits. This new substation would be owned and operated by SCE and would serve as a new interconnection and delivery point to RPU.

- Build a new double-circuit 230 kV transmission line between the Mira Loma-Vista #1 transmission line and the new 230 kV substation (Wildlife Substation), to be owned and operated by SCE. Studies conducted show that the proposed transmission system would have sufficient capacity to provide the requested service to Wilderness Substation under both normal and emergency or outage conditions.

- Construct a new 230/69 kV substation (Wilderness Substation) to be owned and operated by RPU to receive the new source of power.

- Divide the existing RPU 69 kV electric system into east and west systems.

- Construct several new RPU 69 kV subtransmission lines.

SCE and the City requested CAISO approval for SCE to proceed with the result of its October 2005 study. On June 14, 2006, the CAISO approved and directed SCE to construct and provide the City a new 230 kV interconnection with the CAISO electrical system.

In March 2006, SCE and RPU formed a team to jointly plan and consider developing the proposed RTRP. The RTRP planning team completed the first joint study, called the RTRP 230 kV Siting Study, in June 2006. The purpose of the Siting Study was to identify reasonable alternative corridors and routes for the double-circuit 230 kV transmission line identified in the System Impact Study. The Siting Study evaluated various environmental resources (biological, cultural, hydrological, aesthetic, and land use) and engineering and constructability factors to identify corridors and routes to be studied in the DEIR.

An RPU System Impact Study, completed in June 2006, identified the need for specific upgrades to RPU's 69 kV subtransmission system, including new subtransmission lines and upgrades to existing substations. In June 2006, the 69 kV Siting Study was also completed. The 69 kV Siting Study identified alternative 69 kV subtransmission line routes between substations listed below and as identified by the RPU System Impact Study (see Section 1.4.4, RPU Local Subtransmission System, Figure 1.4-2, for schematic layout of RPU's subtransmission system):

- Riverside Substation to a point along an existing 69 kV subtransmission line between La Colina and Springs Substations. (This route is now being pursued through a separate project.)
- Riverside Energy Resource Center (RERC) Substation to Freeman Substation
- RERC Substation to Harvey Lynn Substation
- Proposed Wilderness Substation to a point along an existing 69 kV subtransmission line between Mountain View Substation and Riverside Substation
- Proposed Wilderness Substation to a point along an existing 69 kV subtransmission line between RERC and Mountain View Substations.

In early 2007, the City issued a Notice of Preparation (NOP) and Initial Study for RTRP. Data collection, preliminary engineering, issues identification, land use investigations, route revision, and agency consultation continued in an iterative process. A series of informal open houses was hosted by SCE and RPU during this period to present revised routes and obtain comments from the public. In the fall of 2009, it was determined that the RTRP concept was sufficiently refined to move forward with a revised NOP for the development of a DEIR.

TABLE 1.4-1. SCOPING AND PUBLIC INFORMATIONAL MEETINGS

Date	Type of Meeting	Location	City / Area	Attendance
April 5 & 6, 2006	Public Informational Meetings	Riverside Municipal Airport 6951 Flight Road	Riverside	6 / 8
January 25, 2007	Public Informational Meeting	Riverside Municipal Airport 6951 Flight Road	Riverside	29
April 25, 2007	Public Informational Meeting	Indian Hills Golf Club 5700 Club House Drive	Riverside / Pedley	90
April 26, 2007	Public Informational Meeting	Riverside County Flood Control and Water Conservation District 1995 Market Street	Riverside	26

Date	Type of Meeting	Location	City / Area	Attendance
June 28, 2007	Public Informational Meeting	Riverside Municipal Airport 6951 Flight Road	Riverside	53
February 12, 2009	Public Informational Meeting	Jurupa Community Services District 11201 Harrel Street	Riverside / Mira Loma	88
October 14, 2009	Public Informational Meeting	Patriot High School 4355 Camino Real	Riverside / Jurupa	47
October 15, 2009	Public Informational Meeting	Bryant Park Community Center 7950 Philbin Avenue	Riverside	25
December 3, 2009	Scoping Meeting before City Planning Commission	City Council Chambers, City Hall 3900 Main Street	Riverside	22

1.4.3 SCE REGIONAL TRANSMISSION SYSTEM

The entire SCE service area covers approximately 50,000 square miles in Southern and Central California. SCE's regional transmission system, covering the geographic area surrounding the City, is comprised of the following high voltage (500 kV and 230 kV) substations: Mira Loma, Vista, and Valley Substations.

1.4.4 RPU LOCAL SUBTRANSMISSION SYSTEM

The City owns and operates an electrical utility (RPU) which provides water and electric power for customers within the approximately 81.5 square mile city limits. The power supply requirements are met through ownership and purchases of power under various agreements with a variety of generating power plants and joint power agencies throughout the western U.S., and through internal generation. The 2009 RPU power sources are shown on Figure 1.4-1, with the largest contributor being the Intermountain Power Project located near Delta, Utah.

The local RPU subtransmission system is primarily served through two 230/69 kV transformers at Vista Substation. The transformers are connected to the RPU electric system by seven 69 kV subtransmission lines. The RPU electrical system is comprised of 14 separate substations linked by a network of 69 kV and 33 kV lines. Each substation transforms the power on the system from 69 kV or 33 kV to 12 kV or 4 kV for distribution to the RPU customers. Figure 1.4-2 illustrates the existing RPU subtransmission electrical system.

RPU has constructed two "peaking" power plants within the City. Peaking power plants are designed and permitted to operate a limited number of hours per year, normally when there is a high demand for electricity, such as during summer months. Springs Generating Project (Springs) was placed online in July 2002. RERC was placed online in June 2006. The peaking plants have generating capabilities of 36 megawatts (MW) and 96 MW, respectively. An addition at RERC has doubled the generating capability, adding another 96 MW. This project entered commercial operations during spring 2011.

Figure 1.4-3 shows a simplified schematic representation of the portion of the RPU electrical system that would be modified by the Proposed Project. The upper diagram shows the current electrical configuration of lines and substations. The lower diagram shows the changes that would occur as a result of the RTRP. Capacity and reliability would be enhanced to improve service and meet growing demand within RPU's service area.

FIGURE 1.4-1. RPU POWER SOURCES

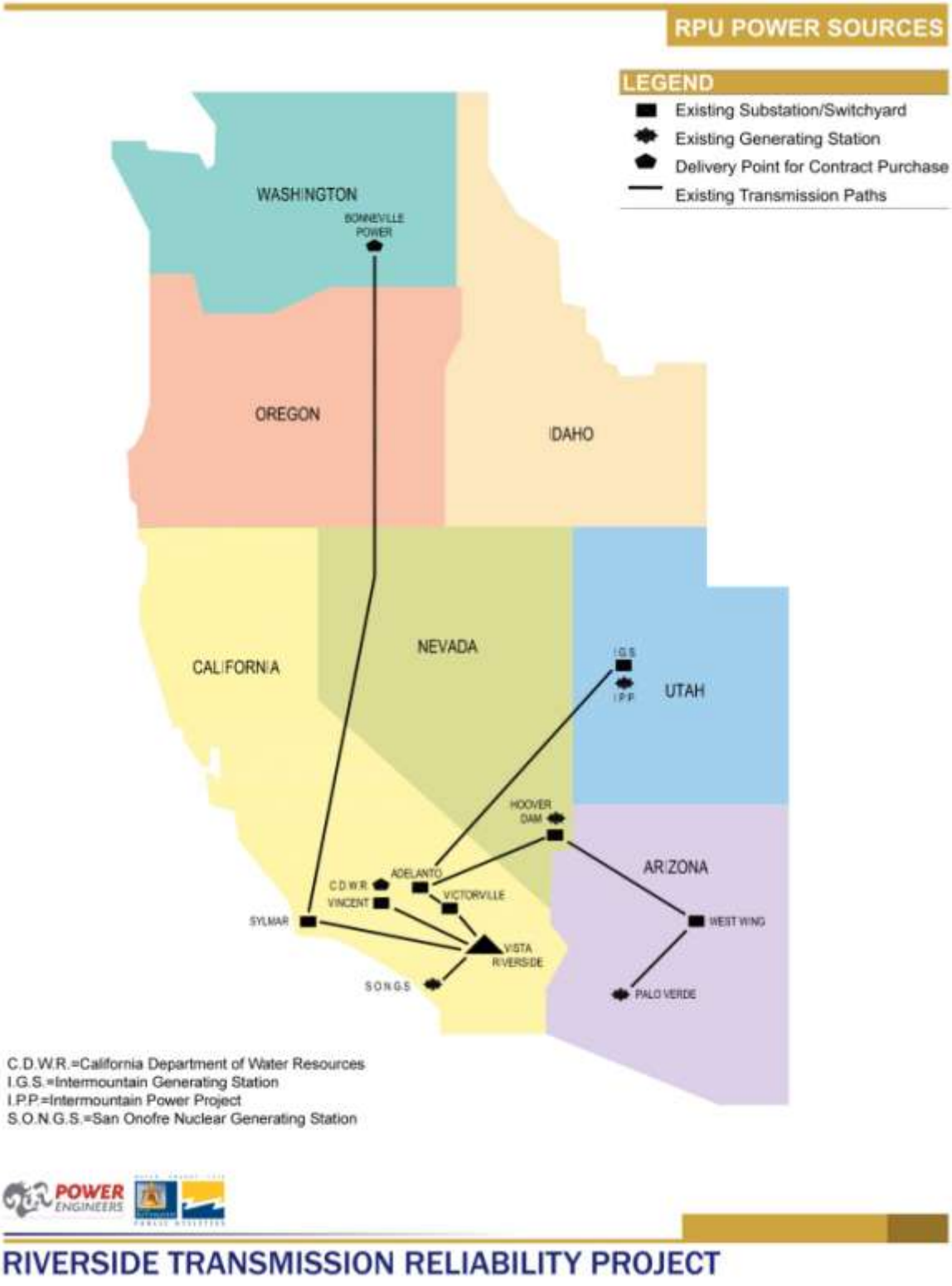

FIGURE 1.4-2. RPU SUBTRANSMISSION SYSTEM

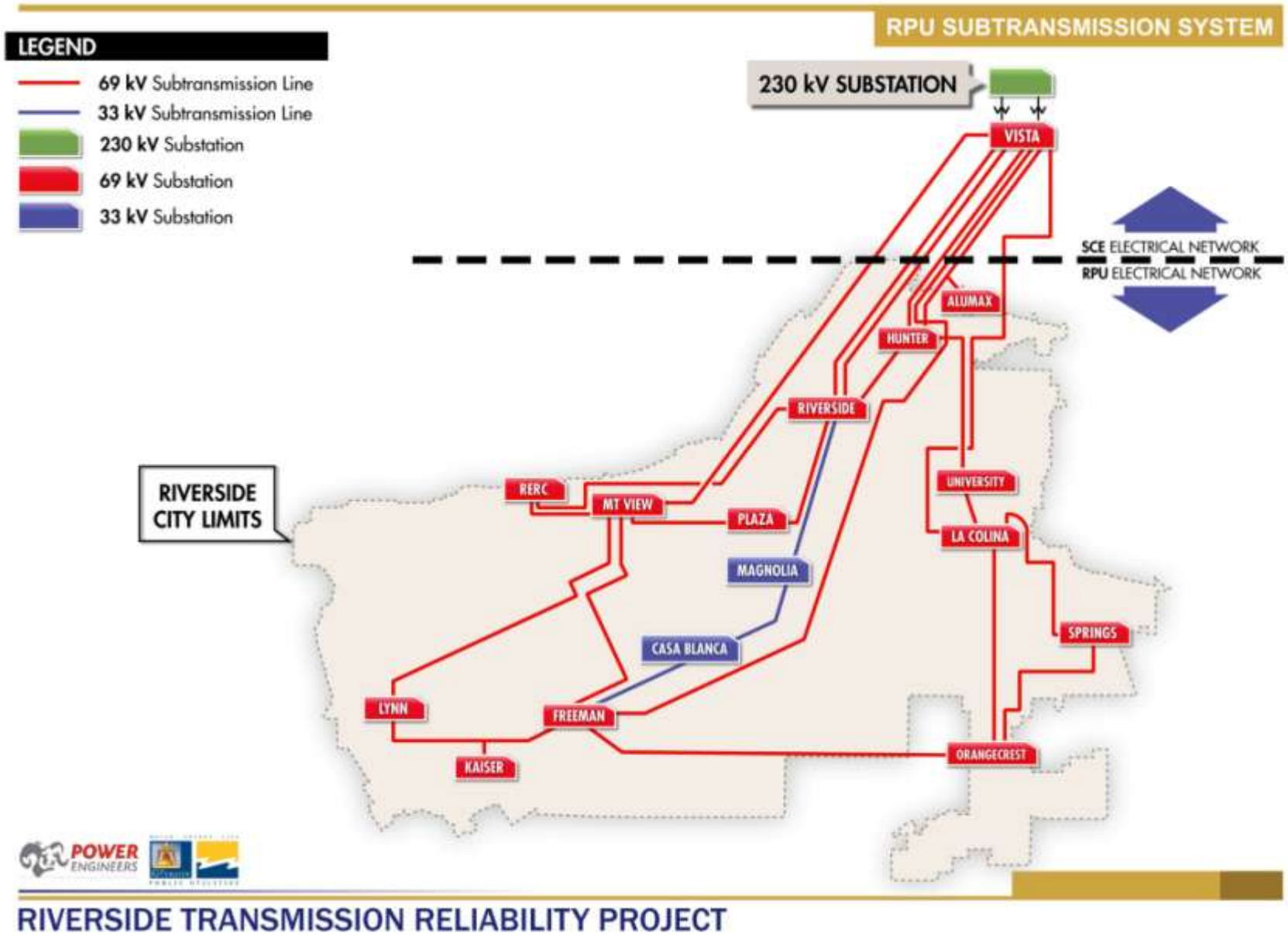

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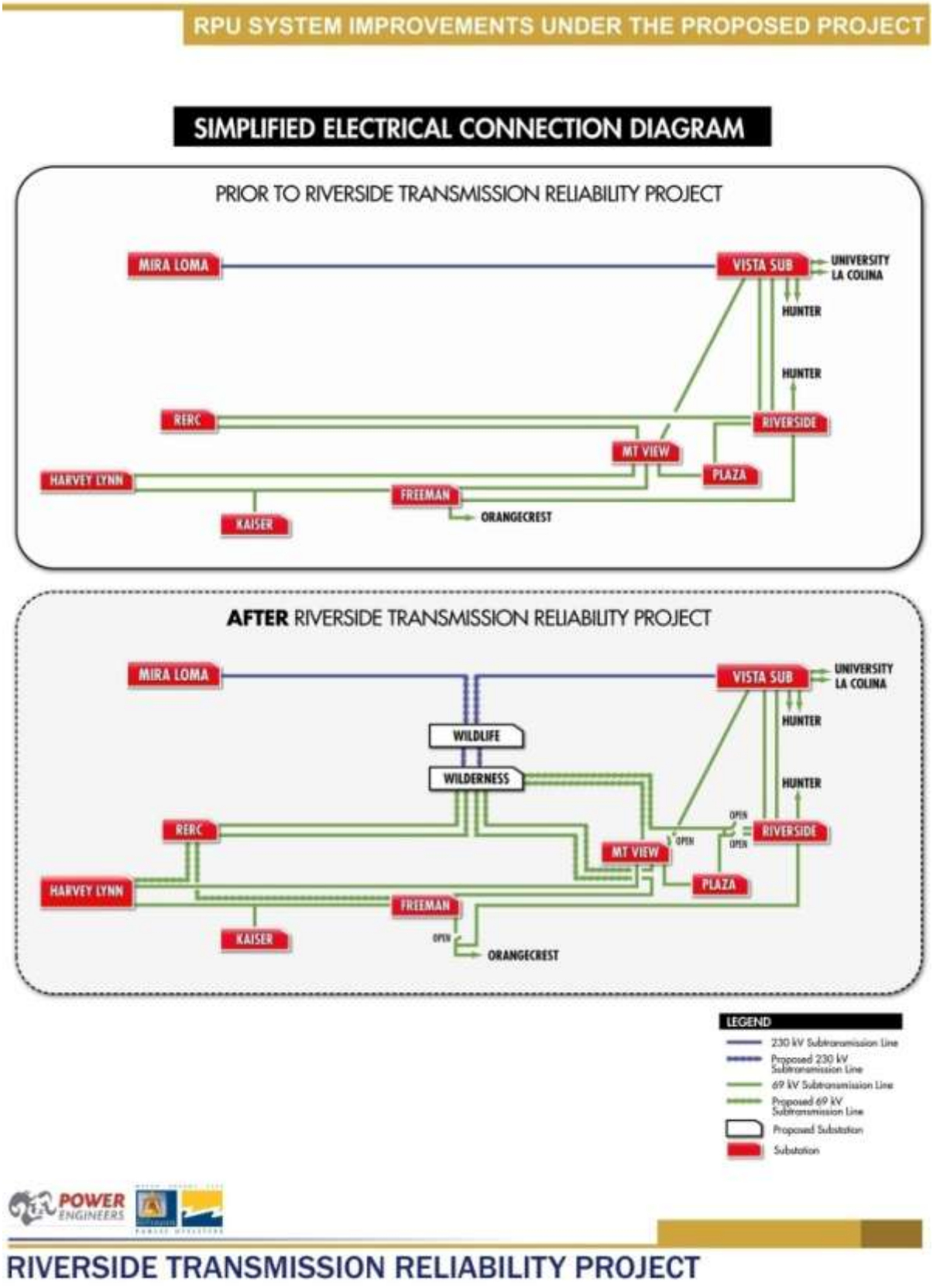
FIGURE 1.4-3. RPU SYSTEM IMPROVEMENTS UNDER THE PROPOSED PROJECT



1.5 PURPOSE AND NEED

Created under Article XII of the Riverside City Charter, RPU is a municipal utility owned and operated by the City for its customers. Riverside is the largest city in Riverside County, and, as part of California's Inland Empire, has experienced tremendous economic growth and development during the past 10 years. It serves as the county seat of government and includes three universities and one community college campus, three major hospitals, the county emergency communications center, a regional water filtration plant, and a convention center. These types of facilities benefit not only the City, but the region in general.

RPU has an obligation to provide a safe and reliable energy supply and electrical infrastructure to all customers, including government, education, and health facilities within the City limits. The rapid population growth and commercial development have led to an increase in local electric customers and in their use of electric energy. Currently, the sole source of bulk electrical energy supply for RPU electric customers is through SCE's Vista Substation located within the City of Grand Terrace. Beginning in 2006, RPU's electrical demand has exceeded the available 557 MW of capacity from Vista Substation, requiring local generation during peak load conditions. A new interconnection to SCE's transmission system is urgently needed to provide capacity for existing as well as new electrical load and an additional point of interconnection for reliability purposes. Without this addition, load shedding and area electrical blackouts will eventually be required. Load shedding is the intentional, controlled interruption of electrical load. It is performed by system operators, or by automatic equipment, in order to protect the majority of the electric system from permanent damage, such as from an overload.

In addition to increasing capacity, the RTRP would substantially reduce the impact of an outage similar to that which occurred to the City of Riverside in October 2007, when service from Vista Substation was interrupted. All electric customers, including government, school, university, and hospital facilities, within the City lost power for up to four hours.

RERC and Springs generation were constructed within the City in part to address the capacity limit at Vista Substation. The internal generation reduces the power that must flow through the transformers at Vista Substation by generating and supplying it locally. However, these generators are "peaking" units. As such, the number of hours that the units can operate is limited by the permit requirements issued by the South Coast Air Quality Management District (SCAQMD), as well as by economics. It is not prudent utility practice to defer transformer capacity additions by continued installation of peaking units.

In addition, reinforcement is urgently needed to the existing 69 kV subtransmission system to meet standard reliability criteria. Without reinforcements, load shedding may occur following 69 kV line outages during peak load conditions. The Subtransmission Project (STP), which has separate and independent utility from RTRP, is in the early stages of construction and will be completed by spring 2012. STP includes a number of the needed 69 kV reinforcements. As a part of RTRP, RPU's local system would need to be divided into two systems: the east system, served from Vista Substation, and the west system, served from the new Wilderness Substation. This division would include the remaining subtransmission line reinforcements that are needed.

Specific aspects of the Purpose and Need are described in the following sections.

1.5.1 SYSTEM LOAD GROWTH

It is estimated that the local RPU system load will grow approximately 15 MW per year, on average, through the year 2026 (RPU Power Resource Division Forecast 2009). This represents an average annual growth rate of 2.2%. This average however, does not include the effects of adverse weather, such as extraordinarily high temperatures, which causes the electric load to increase significantly. As an indicator of how volatile electric load growth can be as a result of adverse weather, the annual peak load has increased by 90 MW over a three-year period (see Figure 1.5-1). This is an average growth of 30 MW or 5.5% per year, and the high rate is partially due to adverse weather conditions. For planning purposes, adverse weather conditions based on a one-in-ten-year hot day are the basis for planning facilities. Figure 1.5-2 illustrates both a "normal weather" forecast and an "adverse weather" forecast.

FIGURE 1.5-1. HISTORICAL RPU PEAK LOAD

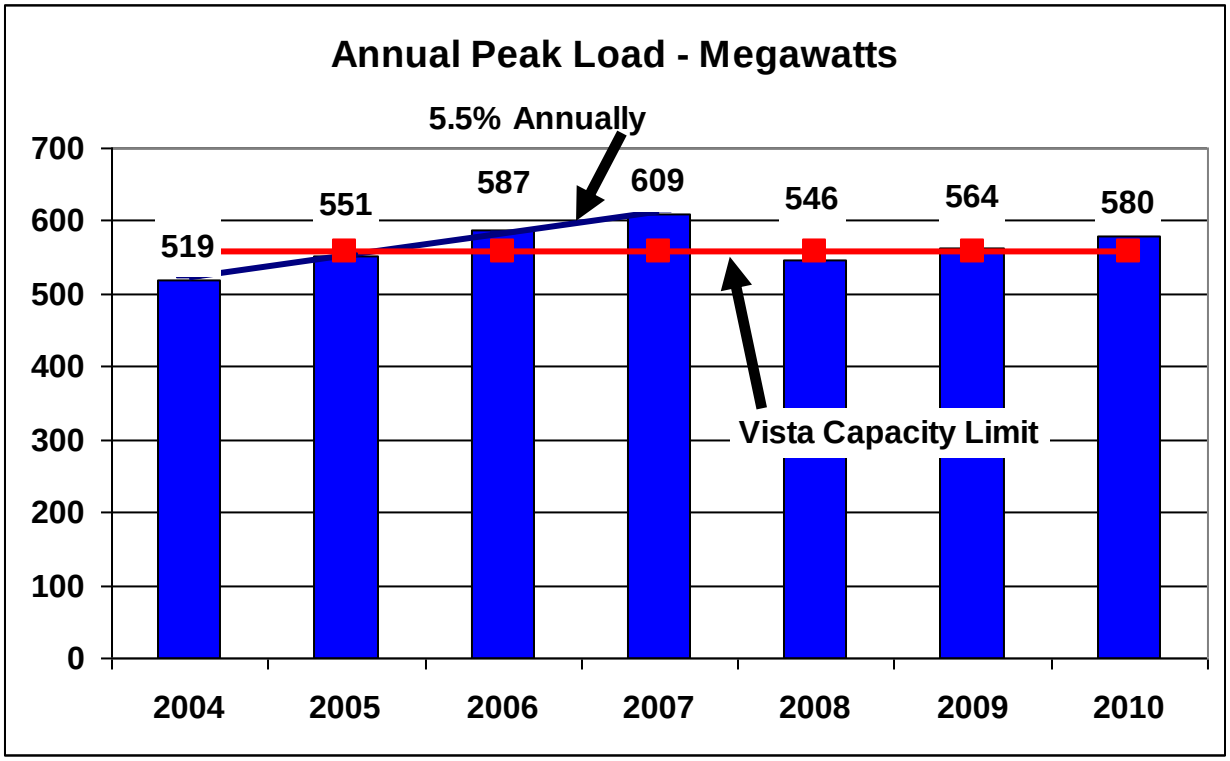
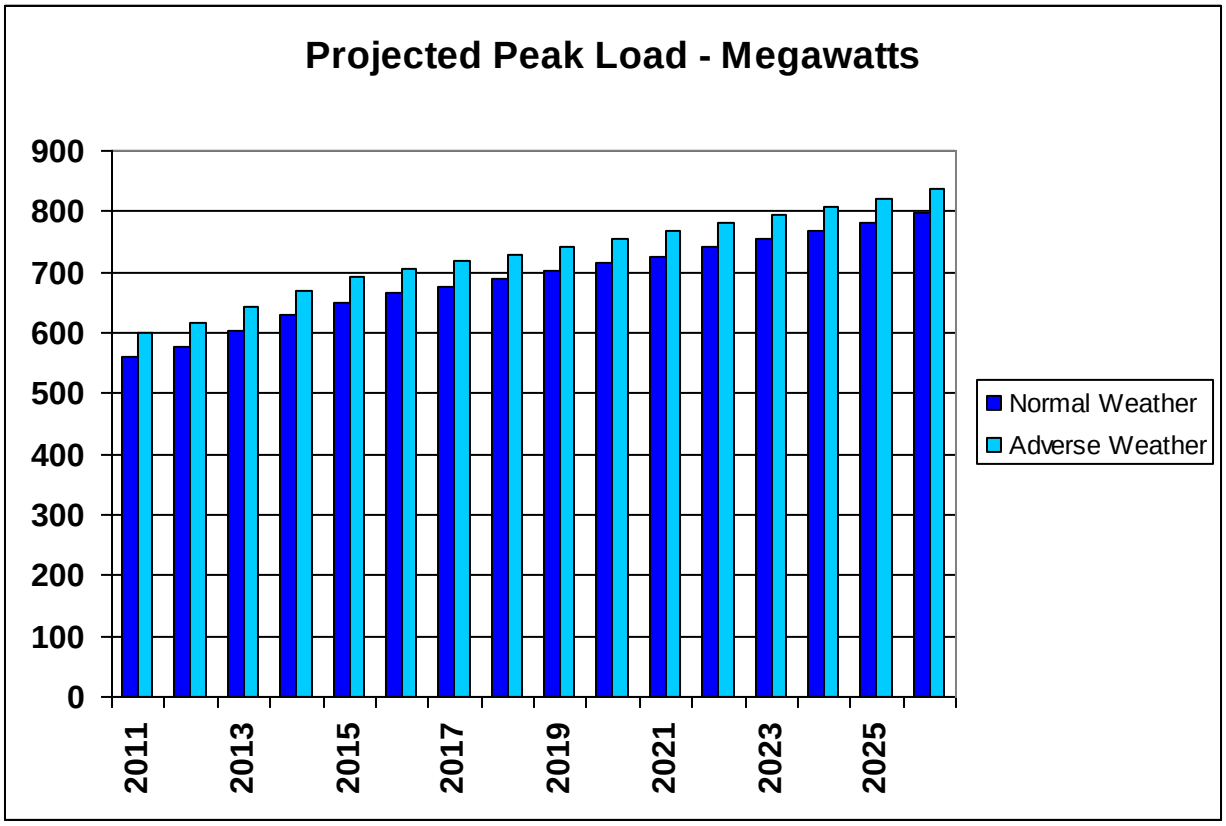


FIGURE 1.5-2. PROJECTED RPU PEAK LOAD



1.5.2 SYSTEM RELIABILITY WITH REGARD TO CAPACITY

The present capacity available to RPU through Vista Substation is 557 MW. The capacity is in the form of two 230/69 kV transformers, each with a nominal rating of 280 MW. During the summer of 2006, peak demand exceeded the capacity of Vista Substation for a total of 26 hours on six separate days, reaching a peak of 587 MW on July 21. RERC and Springs generation were operating at these times, thus supplying part of the City's electrical load and keeping the Vista Substation transformers within their capacity limits. Were it not for RPU generation located internally within its subtransmission system, RPU would have been forced to interrupt electric service to customers during these hours because of the overload on the Vista Substation transformers. Similarly, in 2007 the hourly demand exceeded the Vista capacity for 17 hours on five separate days, and RERC and Springs (partially) operated at these times.

Prudent utility planning calls for having sufficient physical facilities to serve customers reliably under expected conditions. These conditions include the loss of a generator, a transformer, or a transmission line during times of peak load.

With regard to generation, it should be noted that use of Springs generation is intermittent, depending on the current economics of energy supply. Therefore, for planning purposes, it is discounted, resulting in a total RPU internal generation of 192 MW: the two existing RERC 48 MW units and the two new RERC 48 MW units, now under construction. As stated above, prudent utility planning requires consideration of the loss of a generator during peak load conditions. A generator is made up of a complex combination of mechanical systems, and failure

of any one of them (cooling system, fuel supply, environmental control systems, etc.) can result in the loss of the generator for hours, days, or weeks. Therefore, during situations where total generation capacity is diminished through the loss of one generator (an N-1 condition), RPU's available generating capacity would be 144 MW (192 – 48). In this case, the total capacity to serve load (internal generation plus Vista Substation transformers) totals 701 MW (144 + 557).

If one of the 230/69 kV transformers serving RPU were to be lost, the current operating procedure would drop one of the two 230/69 kV transformers on the "A" section of the Vista 69 kV bus serving SCE customers. The sectionalizing circuit breakers on the 69 kV bus will then be closed, paralleling the "A" and "C" sections of the bus. This will allow the remaining two transformers to operate in parallel and continue to serve RPU and SCE customers. If the two remaining 230/69 kV transformers are loaded above the Short Term Emergency Loading Limit (698 MW), loads served from SCE substations will be automatically tripped in order to get the loading within the Short Term Emergency Load Limit. If the remaining 230/69 kV transformers are loaded above the Long Term Emergency Load Limit (619 MW), SCE substation load will then be transferred from the Vista 69 kV system to neighboring systems in order to get the loading within the Long Term Emergency Loading Limit. Thus, with the RTRP, the likelihood that SCE customers would be interrupted for this event will be reduced, by reducing the magnitude of RPU load normally served from Vista. As part of SCE's annual transmission reliability assessments, operating procedures are simulated using computerized network models and evaluated for efficacy. If load growth, system topology changes from other projects, or identification of superior alternatives indicate that an operating procedure is no longer effective, is no longer needed, can be improved, or can feasibly be replaced with a permanent project, then the operating procedure will be amended or cancelled as needed.

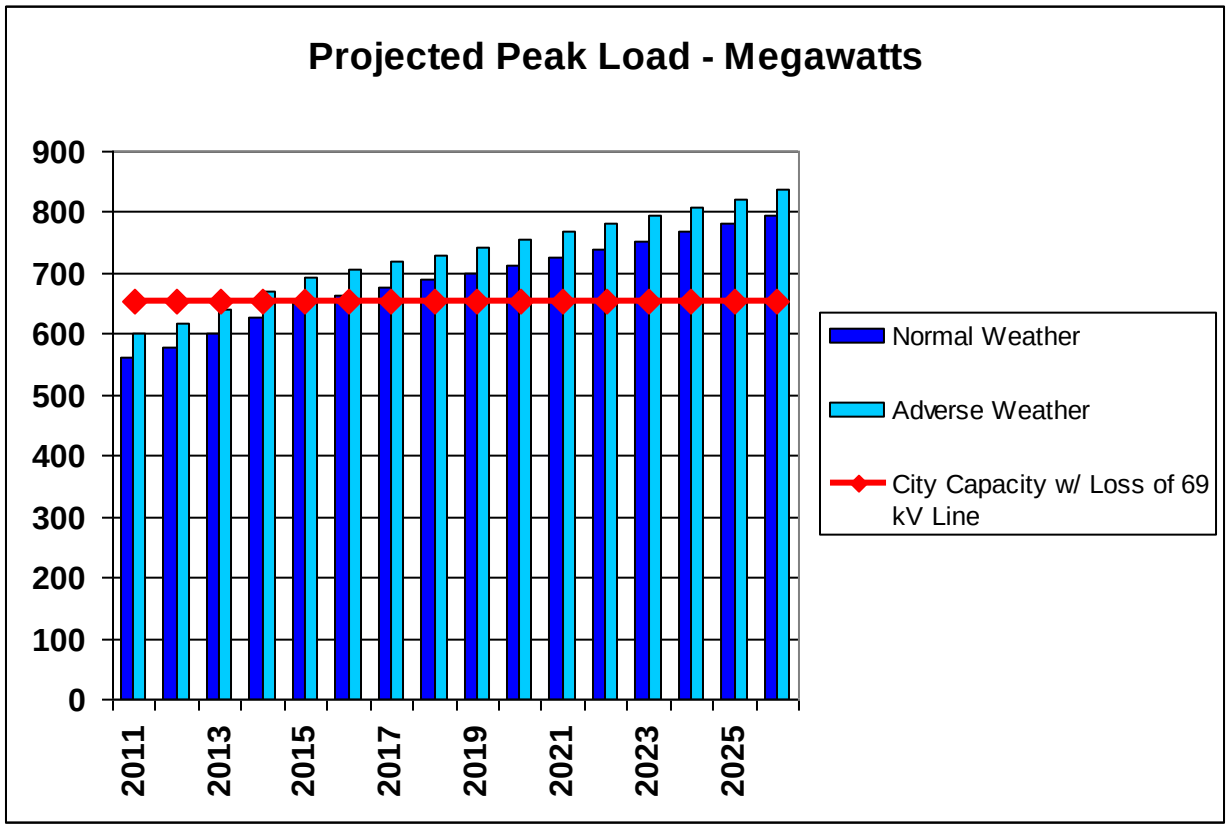
Loss of a subtransmission line on RPU's 69 kV network can interrupt two of the RERC units. Therefore, RPU's available generating capacity during an N-1 condition (loss of one line due to flashover, etc.) would be 96 MW. The total capacity to serve load (internal generation plus Vista Substation transformers) totals 653 MW (96 + 557) for this condition.

As depicted in Figure 1.5-3, the adverse-weather forecast load will exceed the available capacity in 2014. It is important to note that at very high ambient air temperatures, such as during "adverse" weather conditions, gas turbine peakers, such as those installed at RERC and Springs, actually undergo a de-rating of capacity. Thus, the 96 MW of available generating capacity during an N-1 condition could decrease to 92 MW, and the total available capacity to serve the City (Vista Substation transformers plus internal generation) would total 649 MW, also being exceeded in 2014, under adverse weather conditions. Accordingly, the likelihood increases that there will be forced load shedding within the City of Riverside during periods of high electrical demand.

Expansion of the Vista Substation is not feasible because of design limitations, space, and construction constraints at this location. As stated above, it is not prudent utility practice to defer transformer capacity additions by continued installation of peaking units. Hence, there is a need to construct an additional point of interconnection.

RTRP includes the construction of Wilderness Substation, which would include two 280 MW 230/69 kV transformers. Thus, the capacity of the City to access the transmission system would approximately double with the Proposed Project.

FIGURE 1.5-3. RPU FORECASTED LOAD AND TOTAL CAPACITY TO SERVE LOAD



1.5.3 LACK OF SECOND INTERCONNECTION POINT

Interruption to electric service occurs due to electric equipment failures, as well as outside forces, such as weather, human error, or accidents. Therefore, it is prudent utility practice to have alternate sources of supply at various points in the electric system. The CAISO Board of Governors recognized the need for another interconnection point in 2006, when they directed that RTRP should be constructed as soon as possible (CAISO Board of Governors, General Session Minutes, June 14, 2006). The RTRP would provide access to an additional source of capacity and improve system reliability. The need for another source was highlighted in October 2007 when all 69 kV subtransmission lines connecting the City to Vista Substation were interrupted. All electric customers, including government, school, university and hospital facilities, within the City of Riverside were without power for up to four hours.

With the Proposed Project, RPU's Wilderness Substation would receive electric energy from SCE's Wildlife Substation and transform it from 230 kV to 69 kV. Two transformers would be installed at Wilderness Substation, similar to those at Vista Substation. In addition, there would be normally open interconnecting 69 kV lines between the east system (Vista Substation) and the west system (Wilderness Substation). With the Proposed Project, if a transformer outage or an entire station outage occurs at Vista or Wilderness Substations, the interconnecting 69 kV lines could be closed to relieve transformer overloads, or to restore service to interrupted customers.

RERC and Springs generation can also assist in relieving transformer overloads and outages, but are not a substitute for the second point of interconnection with the transmission system.

1.5.4 SYSTEM RELIABILITY WITH REGARD TO RPU'S 69 KV NETWORK

In 1992, RPU established planning criteria to ensure reliable operation of the 69 kV subtransmission system for expected loading conditions. The last major addition to the system based on these criteria was in 1996 with the completion of the Vista – Freeman 69 kV subtransmission line. Since then, the City's demand for electricity has grown by over 170 MW, an increase of 40% above 1996 loading levels. The current subtransmission system does not meet the planning criteria. STP, currently in the early stages of construction, will address a number of existing deficiencies; however, some deficiencies will remain. The proposed RTRP would address these deficiencies.

In order to accomplish separation of the existing electrical system into two systems, several additions and upgrades will be necessary within the City and are proposed as part of the RTRP. New double-circuit subtransmission lines will be required in the west system between Wilderness Substation and a point on an existing double-circuit 69 kV subtransmission line between RERC and Mountain View Substation; between Wilderness and a point on an existing double-circuit 69 kV line between Mountain View Substation and Riverside Substation; and between RERC and Harvey Lynn and Freeman Substations. Additional upgrades would include modifications to RERC, Mountain View, Harvey Lynn, and Freeman Substations.

With these reinforcements, the two 69 kV networks would meet RPU's planning criteria and afford reliable service to the City's electric customers.

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