Valley–Ivyglen Subtransmission Line and Alberhill System Project EIR

Alternatives Screening Report

Lead Agency:
California Public Utilities Commission

Prepared by:
Ecology and Environment, Inc.
505 Sansome Street, Suite 300
San Francisco, CA 94111

August 2015
(Revised April 2017)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

applicant	Southern California Edison
California ISO	California Independent System Operator
CEQA	California Environmental Quality Act
CO_2	carbon dioxide
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
ENA	Electrical Needs Area
I-15	Interstate 15
I-215	Interstate 215
IEEC	Inland Empire Energy Center
kA	kiloamp
kV	kilovolt
LWS	lightweight steel
MVA	megavolt ampere
NEM	Net Energy Metering
NERC	North American Electric Reliability Corporation\
Nevada Hydro	Nevada Hydro Company, Inc.
NOx	nitrogen oxide
PCT	Programmable communicating thermostat
PEA	Proponent's Environmental Assessment
PFM	Petition for Modification
PM10	particulate matter 10 micrometers or less
PM2.5	particulate matter 2.5 micrometers or less
proposed Alberhill Project	Alberhill System Project
Proposed Valley-Ivyglen Project	Valley–Ivyglen 115-kV Subtransmission Line Project
ROW	right-of-way
SCE	Southern California Edison
SF_6	sulfur hexafluoride
SR-74	State Route 74

TE/VS	Talega–Escondido/Valley–Serrano
USACE	United States Army Corps of Engineers
VOC	volatile organic compounds
WECC	Western Electricity Coordinating Council

1 Introduction

Southern California Edison (SCE, or the applicant) filed an application (A.09-09-022) and Proponent's Environmental Assessment (PEA) with the California Public Utilities Commission (CPUC) on September 30, 2009, to construct the Alberhill System Project (proposed Alberhill Project).[1] The proposed Alberhill Project would include a new 500/115-kilovolt (kV) substation (Alberhill Substation), new 500-kV transmission lines, new and modified 115-kV subtransmission lines, and telecommunications system installations. The applicant filed an amendment to the application on March 15, 2010, (Application A.09-09-022, amended) and filed amended sections of the PEA on April 11, 2011, which were deemed complete on May 26, 2011. The amended sections of the PEA proposed modifications to the two 500-kV transmission line routes included in the original PEA. The modified alignments would avoid the Lake Mathews/ Estelle Mountain Stephens' Kangaroo Rat Core Reserve.

The applicant filed a Petition for Modification (PFM) of CPUC Decision 10-08-009 (CPUC 2010a) granting SCE a Permit to Construct the Valley–Ivyglen Subtransmission Line and Fogarty Substation Project[2] on April 2, 2013 (SCE 2013). SCE's application (A.07-01-031) for the Valley–Ivyglen 115-kV Subtransmission Line Project (the proposed Valley–Ivyglen Project) was reopened. On May 23, 2014, SCE filed an Amended Petition for Modification (SCE 2014). The CPUC deemed the PFM application complete on April 28, 2015, and determined that a Environmental Impact Report (EIR) would be prepared to evaluate the proposed Valley–Ivyglen Project in accordance with the California Environmental Quality Act (CEQA).

The proposed Valley–Ivyglen Project would involve the construction of a new single-circuit 115-kV subtransmission line[3] and fiber optic line. The 115-kV components of the proposed Alberhill and Valley–Ivyglen Projects would be constructed within the same right-of-way (ROW) for

[1] The applicant filed an amendment to their initial application on March 15, 2010, (A.09-09-022) to change the application for a Permit to Construct to an application for a Certificate of Public Convenience and Necessity. Refer to the proposed Alberhill Project website to access the initial and amended applications at: http://www.cpuc.ca.gov/Environment/info/ene/alberhill/Alberhill.html.

[2] SCE's application for a Permit to Construct Fogarty Substation (A.07-04-028) was also approved by CPUC Decision 10-08-009. Construction of Fogarty Substation commenced in February 2011.

[3] *Transmission lines* are designed to operate at or above 200 kV (CPUC 1995). For the purposes of this EIR, the term *subtransmission line* refers to powerlines designed to operate at 50 to 200 kV.

approximately 6.5 miles. Within this ROW, 115-kV conductor required for the proposed Alberhill Project would be installed on the 115-kV structures constructed as part of the proposed Valley–Ivyglen Project. Both projects would be constructed during a period that is anticipated to begin in 2016 and end in 2018. The proposed Valley–Ivyglen 115-kV Subtransmission Line would connect to the proposed Alberhill Substation to create the Valley–Alberhill 115-kV Subtransmission Line and Alberhill–Ivyglen 115-kV Subtransmission Line. Because the components of the proposed Valley–Ivyglen Project are required for construction of the proposed Alberhill Project, and the two projects may be constructed during the same period, the CPUC determined that it would be appropriate to evaluate the proposed projects pursuant to CEQA in a single document and combined alternatives screening report.

1.1 Purpose of the Alternatives Screening Report

This alternatives screening report documents the alternatives screening process conducted for the two proposed projects and supplements the information presented in Chapter 3 of the Draft EIR. Alternatives to the proposed projects were identified by the CPUC, the applicant as part of the PEA or PFM, and the general public during public scoping. The alternatives screening process identified and evaluated 44 potential alternatives to the proposed projects. This report documents:

- The range of alternatives identified and evaluated;
- The approach and methods used for screening each alternative according to CEQA; and
- A description of the results of the screening evaluation for each alternative (i.e., the alternatives eliminated from further consideration or carried forward for full analysis in the EIR).

1.1.1 No Project Alternative

CEQA requires that all EIRs include a No Project Alternative (CEQA Guidelines Section 15126.6(e)). The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the effects of approving a proposed project with the effects of not approving it. Because CEQA requires full consideration of a No Project Alternative, the No

Project Alternative for the proposed Alberhill and Valley–Ivyglen Projects is evaluated in the EIR and is not included in this report.

1.1.2 Alternatives to Transmission Facilities

The application for the proposed Alberhill Project is for a Certificate of Public Convenience and Necessity (CPCN). Pursuant to California Public Utilities Code Section 1002.3, this permit requires the CPUC to consider cost-effective alternatives to transmission facilities (sometimes referred to as *non-wires alternatives*) that meet the need for an efficient, reliable, and affordable supply of electricity. Such alternatives may include, but are not limited to, demand-side alternatives for proposed projects that require a CPCN. While Section 1002.3 does not require EIRs to include this analysis, the CPUC typically performs it as part of the environmental review of projects that propose transmission facilities requiring a CPCN; alternatives for the Alberhill project are presented in this report. For the proposed Valley–Ivyglen Project, the applicant filed an application for a Permit to Construct; therefore, the California Public Utilities Code Section 1002.3 requirements do not apply to the Valley–Ivyglen Project.

This report considers alternatives to transmission facilities for the proposed Alberhill Project, (Alternatives AA and BB). Alternatives to transmission facilities include methods for meeting project objectives that do not require new or upgraded transmission facilities. Demand-side alternatives to transmission facilities can include such options as targeted energy efficiency, demand reduction measures (demand response and load management), and local generation. Local generation generally refers to small-scale, customer-level generation within the load service area, e.g., rooftop solar photovoltaic generation on single-family homes. Alternatives to transmission facilities may also include distributed generation installations, such as rooftop solar photovoltaic generation on commercial facilities, combined heat and power units, and biomass facilities, as well as small wind and other small-scale, often community-based facilities (CEC 2009).

1.2 Background Information

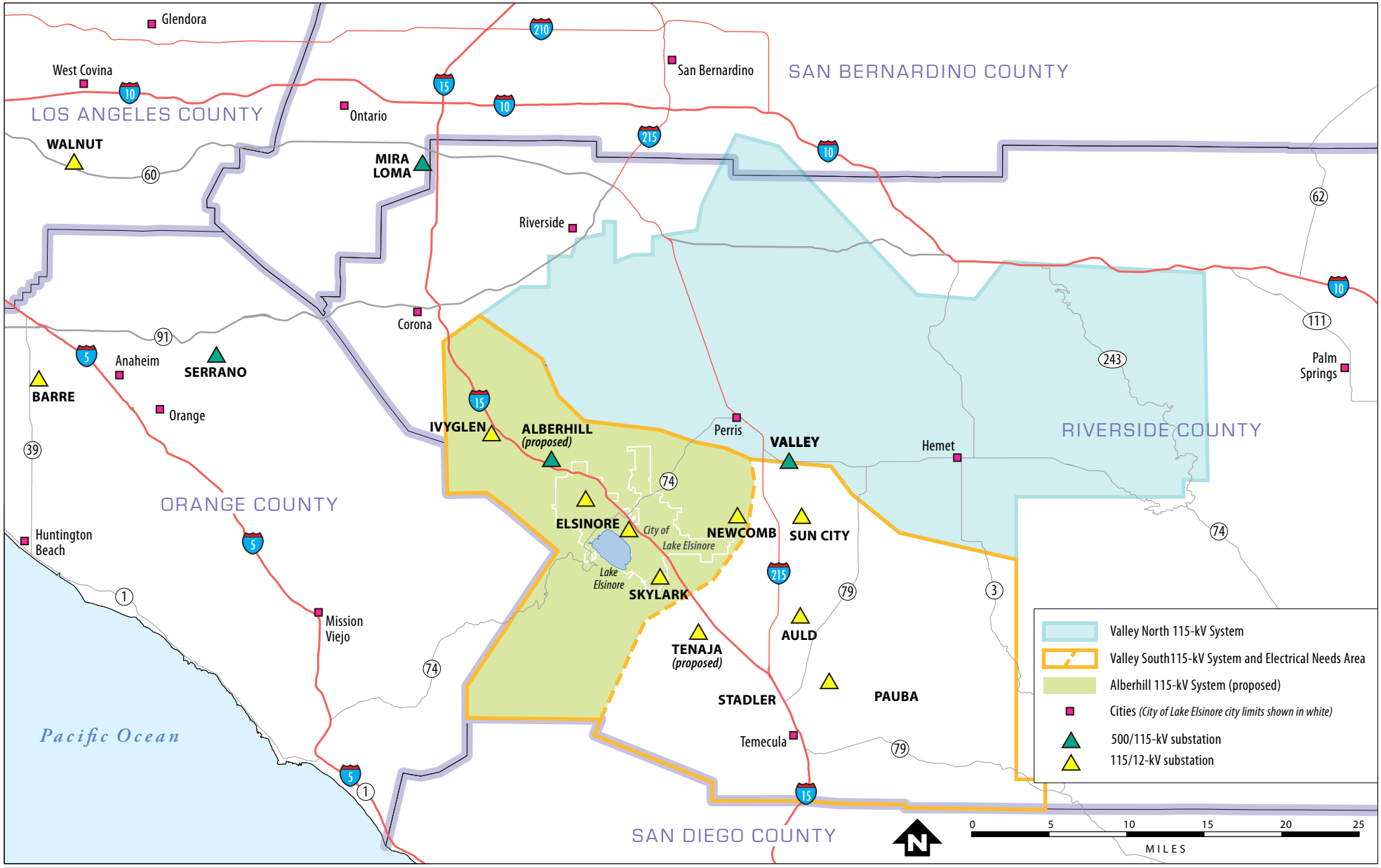
This section discusses the applicant's electrical demand planning process and how it applies to the proposed projects. The purpose of the proposed Alberhill Project relates to electrical demand planning for the Valley–South 115-kV System (Figure 1), and the purpose of the proposed

Valley–Ivyglen Project relates to electrical demand planning specific to the existing Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line and Ivyglen Substation. The existing Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line extends between the applicant's Valley and Ivyglen Substations within the Valley–South 115-kV System.

1.2.1 Electrical Demand Planning

The applicant's electrical demand planning processes help ensure that necessary system facilities are developed in time to meet projected electrical demand. The planning process begins with the development of a peak electrical demand forecast for each substation. This forecast incorporates historical and forecast population, urbanization, meteorological, and economic data. The applicant's forecasts are based on annual forecasts prepared by the California Energy Commission. Peak electrical demand forecasts account for residential, commercial, and industrial developments that are planned or under construction, as well as historical growth trends in the area.

The forecast data are compared against electrical system *operating limits*—the amount of electrical load that can be served by equipment. The applicant establishes operating limits to ensure that capacity and system operational flexibility are maintained to safely and reliably meet projected peak electrical demands during periods of extreme heat, under both normal and abnormal conditions. For planning associated with the entire Valley–South 115-kV System, the applicant projects peak electrical demand for a *1-in-5-year heat storm*. The applicant defines a 1-in-5-year heat storm as a period during which the temperature exceeds the average peak temperature by 4 degrees Fahrenheit. During a 1-in-10-year heat storm, the 10-year average peak temperature would be higher. The applicant applies the 1-in-10-year heat storm temperature to planning for 115-kV subtransmission lines within the Valley–South 115-kV System, such as the Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line.



EE-002929-0012-04-00TT0.a.ai (Lacie Ex HD-2) 05/14/2012

Figure 1-1

Valley South 115-kV System and Electrical Needs Area and Proposed Alberhill 115-kV System

Alberhill System Project

Riverside County, California

1.2.2 About Valley Substation and the Valley South 115-kV System

Valley Substation, located in Romoland, California, is the only 500/115-kV substation serving electrical demand in the San Jacinto Region of southwestern Riverside County, an area encompassing roughly 1,260 square miles and serving approximately 325,000 metered customers. Valley Substation transforms voltage from 500 to 115 kV using four 560-megavolt-ampere (MVA) transformers. In 2004, the Valley 115-kV System was split into two separate systems, the Valley North 115-kV System and the Valley South 115-kV System. Each system is served by two 560-MVA transformers. The two 115-kV systems are served from the same 500-kV source but are not connected at the 115-kV level. The maximum amount of electrical load that can be served by the Valley South 115-kV System is limited to the amount of electrical power that the two Valley South 115-kV System transformers can serve before exceeding their operating limits.

The Valley North 115-kV System consists of 10 distribution-level substations, and the Valley South 115-kV System consists of 14 distribution-level (115-kV) substations. The applicant recently added three 115/12-kV substations to the Valley South 115-kV System (Fogarty Substation, Triton Substation, and Tenaja Substation). The applicant plans to add a fourth 115/12-kV substation (Renaissance Substation) in 2016, which would be the 15th distribution-level substation within the Valley South 115-kV System. A stand-by spare 500/115-kV transformer was installed at the Valley Substation in 2011; the spare transformer provides back-up transformer capacity in the event of transformer failure at Valley Substation. The stand-by transformer would be the fifth transformer to be installed at Valley Substation, but only the other four existing transformers are intended to be load-carrying transformers.

1.2.3 Applicability of Transmission Planning Standards

The 500-kV transmission components of Valley Substation are subject to North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) planning standards. The 500-kV components connect the substation to the region's bulk electrical grid, which is managed by the California Independent System Operator (California ISO). The California ISO adheres to WECC planning standards, and WECC is one of the eight

regional electric reliability councils under NERC. The 500-kV components of the proposed Alberhill Substation would also be subject to NERC and WECC planning standards.

The 115-kV components of Valley Substation and the Valley South 115-kV System are not subject to NERC or WECC planning standards because they are not managed by the California ISO or deemed part of the region's bulk electric grid. Therefore, these components are subject only to the applicant's *Transmission Planning Criteria and Guidelines*, which are based on the NERC and WECC planning standards. Similarly, the 115-kV components of the proposed projects would not be managed by the California ISO because they are not designed to be part of the region's bulk electric grid. Therefore, it is expected that these components would only be subject to the applicant's *Transmission Planning Criteria and Guidelines*.

1.2.4 Projected Valley South 115-kV System Demand

During its planning processes for Valley Substation, the applicant noted that the Valley South 115-kV System service area experienced growth in electrical demand from 2005 through 2007 and 2009 through 2012. Despite a decrease in 2008 and 2013, the applicant forecasts that demand will continue to grow through 2024 (Table 1).

Table 1 Recorded and Projected Peak Demand in Megavolt Amperes for the Valley South 115-kV System (2005 to 2024)

Recorded Peak Demand (2005 to 2009)	**2005**	**2006**	**2007**	**2008**	**2009**
Operating Limit	1,119	1,119	1,119	1,119	1,119
Recorded Peak Demand	753	853	909	787	829
Projected Peak Demand, 1-in-5 Year Heat Storm	807	885	1038	1062	1057
Recorded Peak Demand (2010 to 2014)	**2010**	**2011**	**2012**	**2013**	**2014**
Operating Limit	1,119	1,119	1,119	1,119	1,119
Recorded Peak Demand	894	924	928	897	925
Projected Peak Demand, 1-in-5 Year Heat Storm	968	1014	1027	1020	1,055
Projected Peak Demand (2015 to 2019)	**2015**	**2016**	**2017**	**2018**	**2019**
Operating Limit	1,119	1,119	1,119	1,119	1,119
Projected Peak Demand, 1-in-5 Year Heat Storm	1,045	1,066	1,090	1,119	1,144[(a)]
Projected Peak Demand (2020 to 2024)	**2020**	**2021**	**2022**	**2023**	**2024**
Operating Limit	1,119	1,119	1,119	1,119	1,119
Projected Peak Demand, 1-in-5 Year Heat Storm	1,169	1,193	1,219	1,244	1,269

Source: SCE 2014
Key: kV = kilovolt
Note: [(a)] Projected demand for a 1-in-5 year heat storm exceeds operating limit of Valley South 115-kV System.

The recorded peak demand in 2012 was 928 MVA. The city of Lake Elsinore grew by 9.5 percent from 2010 through 2014 (California Department of Finance 2014). Population projections for 2010 through 2035 indicate that the city of Lake Elsinore's population will increase by approximately 80 percent, and the population of unincorporated Riverside County will more than double (SCAG 2012; USCB 2010).

Based on the increase in electrical demand from 2008 through 2012 and data that indicate continued growth in the county of Riverside, the applicant determined that electrical demand will continue to increase through 2024. The applicant forecasts that peak electrical demand for a 1-in-5 year heat storm could increase to 1,144 MVA by 2019, exceeding the operating limit of the two Valley South 500/115-kV transformers (Table 1). The applicant's forecast for peak electrical demand indicates that there will be a need to reduce demand on the two transformers that serve the Valley South 115-kV System by 2018.

Operational Flexibility

To avoid exceeding the operating limit of the two Valley South 500/115-kV transformers, the applicant considered whether electrical load from the Valley South 115-kV System could be transferred but could not identify a system to accept the load. Because the Valley South 115-kV System is not tied to another 115-kV system, electrical load cannot be transferred between Valley South and a comparable system. The availability of other electrical systems in proximity to the Valley South 115-kV System is limited because of geographic boundaries and the applicant's service boundaries. The applicant finds that its inability to transfer load from the Valley South 115-kV System to another 115-kV system limits the operational flexibility of the Valley South 115-kV System, which increases the potential for electrical service interruptions in the event that a component of the Valley South 115-kV System malfunctions (e.g., the operating limit of a 500/115-kV transformer is exceeded).

1.2.5 Projected Demand on the Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line

During its planning processes for the Valley South 115-kV System, the applicant identified that electrical demand on the Valley–Elsinore segment of the Valley–Elsinore–Fogarty–115-kV Subtransmission Line could exceed operating limits during a 1-in-10 year heat storm by 2015

(Table 2).[4] As of 2008 and through the planning horizon, the operating limit could also be exceeded in the event that an N-1 emergency condition occurs (see N-1 definition in Table 2).

Table 2 Recorded and Projected Peak Demand in Megavolt Amperes for the Valley–Elsinore–Fogarty 115-kV Line (2008 to 2024)

Recorded and Projected Peak Demand (2008 to 2010)	**2008**	**2009**	**2010**
Planned Maximum Operating Limit	184	184	184
Recorded Peak Demand	146	149	168
Projected Peak Demand (1-in-10 year heat storm) [(a)]	191	189	169
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	248
Projected N-1 Loading	284	281	252
Recorded and Projected Peak Demand (2011 to 2013)	**2011**	**2012**	**2013**
Planned Maximum Operating Limit	184	184	184
Recorded Peak Demand	167	163	159
Projected Peak Demand (1-in-10 year heat storm) [(a)]	180	191	173
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	248
Projected N-1 Loading	268	284	258
Projected Peak Demand (2014 to 2016)	**2014**	**2015**	**2016**
Planned Maximum Operating Limit	184	184	184
Recorded Peak Demand	163	–	–
Projected Peak Demand (1-in-10 year heat storm)	179	183	187[(c)]
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	248
Projected N-1 Loading	266	275	292
Projected Peak Demand (2017 to 2019)	**2017**	**2018**	**2019**
Planned Maximum Operating Limit	184	184	184
Projected Peak Demand (1-in-10 year heat storm)	191	196	201
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	248
Projected N-1 Loading	294	297	305
Projected Peak Demand (2020 to 2022)	**2020**	**2021**	**2022**
Planned Maximum Operating Limit	184	184	184
Projected Peak Demand (1-in-10 year heat storm)	203	205	206
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	248
Projected N-1 Loading	307	309	312
Projected Peak Demand (2023 to 2024)	**2023**	**2024**	
Planned Maximum Operating Limit	184	184	
Projected Peak Demand (1-in-10 year heat storm)	2008	209	
Planned Maximum Emergency Operating Limit (N-1 condition) [(b)]	248	248	
Projected N-1 Loading	313	315	

Sources: SCE 2013, 2014

Key: CPUC = California Public Utilities Commission, kV = kilovolt, SCE = Southern California Edison

[4] The Valley–Ivyglen Project Final EIR (CPUC 2009, 2010b) presented the applicant's projected electrical demand for the existing Valley–Elsinore–Ivyglen 115-kV Subtransmission Line because Fogarty Substation had not been constructed. In this EIR, the existing line between Valley Substation and Ivyglen Substation is now referred to as the Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line. For the applicant's projection provided for this EIR only the Valley–Elsinore–Fogarty segments of the line were identified.

Table 2 Recorded and Projected Peak Demand in Megavolt Amperes for the Valley–Elsinore–Fogarty 115-kV Line (2008 to 2024)

Notes:
[a] The Projected Peak Demand and Projected N-1 Loading values prior to 2013 are the same as those provided in the original Valley–Ivyglen Final EIR (CPUC 2010). They were the applicant's projections for future years at the time they were produced. Projected peak demand values from 2013 through 2024 reflect the latest applicant forecasts submitted to the CPUC.
[b] For the purpose of documenting recorded and projected demand on the Valley–Elsinore–Fogarty 115-kV Line, an N-1 condition refers to the loss of a single subtransmission element (e.g., a subtransmission line or transformer). Demand on the Valley–Elsinore–Fogarty 115-kV Line would temporarily increase until the N-1 condition is corrected.
[c] Projected demand for a 1-in-10 year heat storm exceeds the Valley–Elsinore–Fogarty 115-kV line's operating limit.

1.3 Overview of the Proposed Projects

The proposed Alberhill Project would include construction of a new 1,120-MVA, 500/115-kV substation (Alberhill Substation), which would be expandable to a maximum of 1,680 MVA depending on future need.[5] In addition to construction of the new Alberhill Substation, the proposed Alberhill Project would include the following:

- Construction of two 500-kV transmission lines (about 1.5 miles long each) to connect the proposed substation to the existing Serrano–Valley 500-kV Transmission Line;
- Construction of about 11 miles of new double-circuit 115-kV subtransmission lines and removal of 11 miles of existing single-circuit 115-kV subtransmission lines from the same ROW;
- Construction of about 3 miles of single-circuit 115-kV subtransmission lines with distribution lines underbuilt on the subtransmission line structures and removal of about 3 miles of electrical distribution lines from the same ROW;
- Installation of a second circuit on about 6.5 miles of single-circuit 115-kV subtransmission lines (the single-circuit lines are to be constructed as part of the applicant's Valley–Ivyglen Project);
- Installation of fiber optic lines on sections of the new or modified subtransmission lines;

[5] The initial build of the proposed Alberhill Substation would include the installation of two 560-MVA 500/115-kV transformers, with one of the two as a spare. Space would be available for the installation of two additional transformers, for a maximum of three in-service transformers and a spare, if needed in the future.

- Construction of a 120-foot microwave antenna tower at the proposed Alberhill Substation site; installation of microwave telecommunications dish antennas at the proposed Alberhill Substation, the existing Santiago Peak Communications Site, and Serrano Substation; and other telecommunications equipment installations at existing and proposed substations; and
- Transfer of five of the 14 Valley South 115-kV System substations to the proposed Alberhill 115-kV System: the Ivyglen, Fogarty, Elsinore, Skylark, and Newcomb 115/12-kV Substations.[6]

The applicant estimates that construction of the proposed Alberhill Project would take approximately 28 months and that it would be operational in 2018.

The proposed Valley–Ivyglen Project would involve the construction of a new single-circuit 115-kV subtransmission line and fiber optic line. The proposed 115-kV line would be approximately 27 miles long and constructed within approximately 14.2 miles of new ROW. The applicant estimates that construction of the proposed Valley–Ivyglen Project would take approximately 27 months. It is anticipated that the project would be operational in 2018.

Construction of the applicant's Fogarty Substation and the electrical and telecommunications improvements at Valley and Ivyglen substations described in the original Valley–Ivyglen EIR (CPUC 2009, 2010b) were completed as approved by the CPUC between 2010 and 2015. These facilities are not evaluated within this alternatives screening report.

1.3.1 Location of the Proposed Projects

The proposed Alberhill Substation would be built on 34 acres of a 124-acre property located north of Interstate 15 (I-15) and the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County (Figure 2).[7] The two new 500-kV

[6] The applicant plans to add a new 115/12-kV substation (Renaissance Substation) in 2016, which would be the fifteenth Valley South 115-kV System substation.

[7] If the applicant elects to excavate 5.2 acres of land adjacent to the northeast corner of the proposed substation site to obtain fill required for grading (Figure 2-7), then the land required for construction of the proposed substation would increase from 34 acres to approximately 40 acres (Section 2.4.4.2, "Fill, Grading, Drainage, and Surface Materials").

transmission lines would each extend about 1.5 miles northeast to connect the proposed Alberhill Substation to the existing Serrano–Valley 500-kV Transmission Line. The two 500-kV transmission lines would be constructed primarily in unincorporated Riverside County, although they would pass through the city of Lake Elsinore.

The 115-kV subtransmission line modifications and construction would occur southeast from the proposed Alberhill Substation to Skylark Substation (about 11.5 miles) and from Skylark Substation to Newcomb Substation (about 9 miles). The subtransmission lines would be modified or constructed in unincorporated Riverside County and in the cities of Lake Elsinore, Wildomar, and Menifee. Fiber optic lines would be installed overhead on the structures modified or constructed as part of the proposed Alberhill Project. In a few locations, fiber optic lines would also be installed in new underground conduit.

The proposed Valley–Ivyglen 115-kV line would generally follow the route approved in 2010 by CPUC Decision 10-08-009. From Valley Substation in the east, the proposed 115-kV line would traverse areas within the cities of Menifee, Perris, and Lake Elsinore and unincorporated areas of western Riverside County (Figure 3). The proposed route would cross Interstate 215 (I-215), State Route 74 (SR-74), and I-15. Fiber optic lines would be installed overhead on the proposed structures and underground in new and existing conduit.

TO SERRANO SUBSTATION
IVYGLEN SUBSTATION
ASP Alternative A and H
LEE LAKE
ASP Alternative I
Temescal Wash
LINE SA
LINE VA
SEGMENT 1
ASP Alternative J
Cleveland National Forest
SANTIAGO PEAK COMMUNICATIONS SITE
RIVERSIDE COUNTY
ORANGE COUNTY
15
74
SEGMENT 2
ASP Alternative L
ASP Alternative M
FOGARTY SUBSTATION
ASP Alternative Y
CITY OF LAKE ELSINORE
SEGMENT 3
ELSINORE SUBSTATION
LAKE ELSINORE
SEGMENT 4
SEGMENT 5
CITY OF WILDOMAR
SKYLARK SUBSTATION
CITY OF PERRIS
Perris Valley Airport
ASP Alternative K
VALLEY SUBSTATION
SEGMENT 8 (300-FOOT SEGMENT)
CANYON LAKE
CITY OF CANYON LAKE
CITY OF MENIFEE
NEWCOMB SUBSTATION
SEGMENT 7
ASP Alternative X, X1, and X2
ASP Alternative W (Byers Road)
SEGMENT 6
CITY OF MURRIETA
215

0 1 2 Miles
0 2 Kilometers
NORTH

BLM Land
USFS Land
Riverside County Incorporated Areas
Riverside County Unincorporated Areas
Riverside County Habitat Conservation Agency core reserves
Highway
Inland Empire Energy Center
Substation
Proposed Alberhill Substation
Proposed alternatives
Proposed 500-kV transmission line
Proposed double-circuit of a single-circuit 115-kV subtransmission line without structure replacement (Proposed Valley-Ivyglen Project)
Proposed double-circuit of an existing single-circuit 115-kV subtransmission line with structure replacement
New single-circuit 115-kV subtransmission line
Existing 115-kV subtransmission line
Existing 500-kV Serrano-Valley Transmission Line
Proposed fiber optic line installation*

Proposed and existing transmission and subtransmission line locations are approximate.

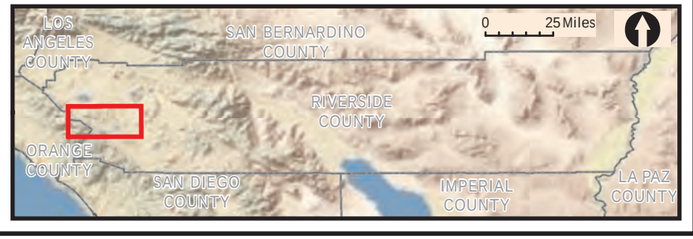


Figure 2
Alberhill System Project
Overview and Alternatives
Alberhill and
Valley–Ivyglen Projects
Riverside County, California

ecology and environment, inc.
Global Environmental Specialists

*Note: Fiber optic lines would be installed overhead on proposed project structures as shown except where the lines would initially extend underground from the Alberhill (proposed), Skylark, and Newcomb substations.

Path: \\prtbhp1\GIS\SanFrancisco\CPUC\Valley_Ivyglen\Maps\MXDs\Report_Figures\Figure3_VIG_Project_Overview_Alternatives.mxd 7/21/2015

TO SERRANO SUBSTATION
IVYGLEN SUBSTATION
VIG Alt I (double-current)
VIG Alt A
VIG Alt B1 (underground)
VIG Alt B2 (overhead)
VIG Alt C
LEE LAKE
Gavilan Hills
VIG Alt K
115-kV Staging Area VIG4
115-kV Staging Area VIG3
115-kV Staging Area VIG1
VALLEY SUBSTATION
115-kV Staging Area VIG2
Perris Valley Airport
CITY OF PERRIS
Cleveland National Forest
115-kV Staging Area VIG9
VIG Alt H
VIG Alt E
VIG Alt F
SANTIAGO PEAK COMMUNICATIONS SITE
VIG Alt D (underground)
VIG Alt G
VIG Alt J (TSPs)
115-kV Staging Area VIG5
FOGARTY SUBSTATION
115-kV Staging Area VIG8
115-kV Staging Area VIG7
115-kV Staging Area VIG6
CANYON LAKE
NEWCOMB SUBSTATION
CITY OF MENIFEE
TO VALLEY SUBSTATION
CITY OF LAKE ELSINORE
ELSINORE SUBSTATION
CITY OF CANYON LAKE
LAKE ELSINORE
TO VALLEY SUBSTATION
CITY OF WILDOMAR
SKYLARK SUBSTATION
Skylark Field Airport
CITY OF MURRIETA
TO TENAJA SUBSTATION

Valley Ivyglen 115-kV Segments

Segment VIG8
Segment VIG7
Segment VIG6
Segment VIG5
Segment VIG4
Segment VIG3
Segment VIG2
Segment VIG1

0 1 2 Miles
0 2 Kilometers

Source: BLM GeoCommunicator 2009, RCHCA 2007, SCE 2011, 2013

- Inland Empire Energy Center
- Substation
- Riverside County Incorporated Areas
- USFS Land
- Riverside County Habitat Conservation Agency core reserve
- BLM Land
- Proposed staging area
- Existing 500-kV Seranno—Valley Transmission Line
- Existing single-circuit 115-kV subtransmission line
- Proposed single-circuit 115-kV Valley—Ivyglen subtransmission line
- Proposed single-circuit 115-kV Valley—Ivyglen subtransmission line in new underground conduit
- Proposed routing alternatives

Note: Existing transmission and subtransmission line locations are approximate.

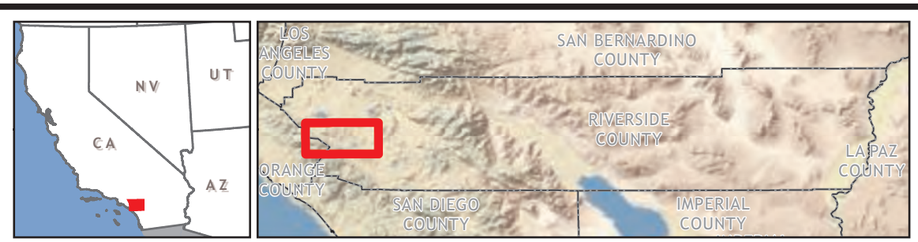


Figure 3

Proposed Valley—Ivyglen Project Overview and Alternatives

Alberhill and Valley—Ivyglen Projects

Riverside County, California

1.4 Purpose of the Proposed Projects

The purpose of the proposed Alberhill Project is to relieve projected electrical demand that would exceed the operating limit of the two load-serving Valley South 115-kV System 500/115-kV transformers by constructing a new 500/115-kV substation (e.g., Alberhill Substation) within the *Electrical Needs Area*[8] (ENA) (Figure 1). The proposed Alberhill Substation would allow for the provision of safe and reliable electrical service pursuant to NERC and WECC standards. System ties between a new 115-kV system (e.g., the proposed Alberhill 115-kV System) served by the proposed Alberhill Substation) and the Valley South 115-kV System would be maintained such that either system could be used to provide electricity in place of the other during maintenance, during emergency events, or to relieve other operational issues on one of the systems.

The purpose of the proposed Valley–Ivyglen Project is to reduce reliability concerns associated with the existing single 115-kV subtransmission line that serves Fogarty and Ivyglen Substations, as well as to eliminate the potential for 115-kV system overloads resulting from the loss of a 115-kV element within the ENA.[9] The proposed Valley–Ivyglen 115-kV Subtransmission Line would relieve loads on the existing Valley–Elsinore–Fogarty–Ivyglen 115-kV Subtransmission Line and provide a second source of power to Ivyglen Substation by creating a second 115-kV connection between Valley Substation and Ivyglen Substation. Operational flexibility would be improved by increasing the applicant's ability to transfer load between 115-kV substations within the ENA. The applicant's ability to provide safe and reliable electrical service within the ENA would also be enhanced. In addition, the proposed Valley–Ivyglen 115-kV Subtransmission Line would enhance the proposed Alberhill 115-kV System's (Figure 1) ability to provide service to 115-kV facilities within the proposed system as planned by the applicant.

[8] The applicant defines the term *Electrical Needs Area* (ENA) as an area in which an electrical inadequacy exists or is forecast. The ENA for the proposed Alberhill Project is the service area of the Valley South 115-kV System (Figure 1).

[9] The ENA for the proposed Valley–Ivyglen Project as defined in the original Draft EIR (CPUC 2009) is an area located within the proposed Alberhill 115-kV System (Figure 1) that would include most of the applicant's service area within the cities of Lake Elsinore and Canyon Lake and sections of the applicant's service areas within the cities of Wildomar, Murrieta, and Menifee and unincorporated Riverside County.

1.5 Objectives of the Proposed Projects

1.5.1 Objectives of the Proposed Alberhill Project

The CPUC developed the following objectives to reflect the purpose of the proposed Alberhill Project as described in the PEA and the applicant's responses to the CPUC's requests for further information (SCE 2011a). The following three objectives were developed with consideration of the objectives presented in the PEA (see Section 1.5.2, below). The objectives, as defined by the CPUC, were used as a basis for the development of a reasonable range of alternatives as required by CEQA (see Section 2.2, below). The basic objectives of the proposed Alberhill Project are to:

1. Relieve projected electrical demand that would exceed the operating limit of the two load-serving Valley South 115-kV System 500/115-kV transformers;
2. Construct a new 500/115-kV substation within the ENA that provides safe and reliable electrical service pursuant to NERC and WECC standards; and
3. Maintain system ties between a new 115-kV System and the Valley South 115-kV System that enable either of these systems to provide electricity in place of the other during maintenance, during emergency events, or to relieve other operational issues on one of the systems.

The operating limit and projected electrical demand for the Valley South 115-kV System is provided in Table 1, above.

Applicant's Stated Objectives of the Proposed Alberhill Project

As stated above in Section 1.5.1, above, the applicant's stated objectives were considered when the CPUC developed the three proposed Alberhill Project objectives. The applicant identified the following seven objectives of the proposed Alberhill Project in the PEA:

1. Serve current and long-term projected electrical demand requirements in the ENA;
2. Increase system operational flexibility and maintain system reliability by creating system ties that establish the ability to transfer substations from the current Valley South 115-kV System;

3. Transfer a sufficient amount of electrical demand from the Valley South 115-kV System to maintain a positive reserve capacity on the Valley South 115-kV System through the 10-year planning horizon;
4. Provide safe and reliable electrical service consistent with SCE's *Transmission Planning Criteria and Guidelines;*
5. Increase electrical system reliability by constructing a project in a location suitable to serve the ENA;
6. Meet project need while minimizing environmental impacts; and
7. Meet project need in a cost-effective manner (SCE 2011a).

1.5.2 Objectives of the Proposed Valley–Ivyglen Project

The CPUC developed the following three objectives of the proposed Valley–Ivyglen Project to reflect the purpose of the project as described in the PMR and applicant responses to the CPUC's requests for further information (SCE 2011). The objectives were developed with consideration of the objectives presented in the PEA (SCE 2007, page 1-5). The objectives, as defined by the CPUC, were used as a basis for the development of a reasonable range of alternatives pursuant to CEQA (Chapter 3, "Description of Alternatives"). The basic objectives of the proposed Valley–Ivyglen Project are to:

1. Serve projected electrical demand requirements in the Electrical Needs Area (ENA);
2. Increase electrical reliability to ENA by providing a direct connection between the Applicant's Valley 500/115-kV Substation and Ivyglen 115/12-kV Substation; and
3. Improve operational and maintenance flexibility on subtransmission lines without interruption of service.

Applicant's Stated Objectives of the Proposed Valley–Ivyglen Project

The applicant identified the following objectives of the proposed Valley–Ivyglen Project in its PEA (SCE 2007, page 1-5). The analysis presented in this document, however, applies only the three objectives defined by the CPUC, above.

1. Serve projected electrical demand requirements in the Electrical Needs Area beginning in 2009;

2. Provide a direct connection between the applicant's Valley 500/115-kV Substation and Ivyglen 115/12-kV Substation;
3. Increase system reliability by locating a second 115-kV subtransmission line within the Electrical Needs Area;
4. Improve operational and maintenance flexibility on subtransmission lines without interruption of service;
5. Meet project need while minimizing environmental impacts; and
6. Meet project need in a cost-effective manner.

1.6 Organization of the Alternatives Screening Report

The remainder of this report provides an overview of the alternatives evaluation process (Section 2); descriptions, analyses, and determinations for each potential alternative (Section 3); and a summary of alternatives screening results (Section 4).

2 Overview of the Alternatives Screening Process

2.1 Alternatives Screening Methodology

Each potential alternative identified was screened using a three-step process:

Step 1: Clarify the description of the alternative to allow for comparative evaluation.

Step 2: Evaluate the alternative by comparing it with the proposed project and with respect to the CEQA criteria for alternatives (Section 2.2, below).

Step 3: Determine the suitability of each alternative for full analysis in the EIR based on the results of Step 2. If the alternative is unsuitable, eliminate it from further consideration.

2.2 CEQA Requirements for the Consideration of Alternatives

An important aspect of EIR preparation is the identification and assessment of alternatives with the potential to avoid or lessen potentially significant effects of a proposed project. In addition to mandating consideration of the No Project Alternative, CEQA Guidelines (Section 15126.6(e)) emphasize the selection of a reasonable range of feasible alternatives and adequate assessment, which allows decision makers to use a comparative analysis. CEQA Guidelines (Section 15126.6(a)) state:

> *An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*

To comply with CEQA requirements for the evaluation of alternatives, each alternative identified was evaluated according to three criteria:

1. Would the alternative accomplish all or most of the project objectives?
2. Would the alternative be feasible (from an economic, legal, and technological perspective)?
3. Would the alternative avoid or substantially lessen any significant effects of the proposed project (including consideration of whether an alternative itself could create significant effects potentially greater than those of the proposed project)?

The CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (Section 15126.6(b)). Under CEQA, it is not required that each alternative meet all of the project objectives or be cost efficient.

2.2.1 Consistency with the Objectives of the Proposed Projects

A project's statement of objectives describes the underlying purpose of the project and the reasons for undertaking the project. To fulfill this requirement, the lead agency defined the objectives for both proposed projects and provided a description of their purpose (Sections 1.4 and 1.5).

2.2.2 Feasibility

According to the CEQA Guidelines (Section 15126.6(f)(1)), among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and proponent control over alternative sites in determining

the range of alternatives to be evaluated in the EIR. The screening analysis for the proposed projects assessed the feasibility of potential alternatives using the following considerations:

- **Technical Feasibility.** Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?
- **Legal Feasibility**. Do legal protections on lands preclude or substantially limit the feasibility of permitting high-voltage transmission lines and substations? Do regulatory restrictions substantially limit the feasibility or successful permitting of high-voltage transmission lines and substations? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance?
- **Economic Feasibility.** Is the alternative so costly that its implementation would be prohibitive?

2.2.3 Potential to Avoid or Lessen Significant Environmental Effects

A key CEQA requirement for an alternative is its potential to "avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines Section 15126.6(a)). At the screening stage, it is not possible to evaluate all of the effects of alternatives in comparison to the proposed project with absolute certainty, and it may not be possible to quantify the effects. However, it is possible to identify elements of an alternative that are likely to create an impact and relate them, to the extent possible, to general conditions in the proposed project area. Tables 3 and 4 summarize the potentially significant effects of the proposed projects. These tables were prepared prior to completion of the EIR and do not contain the detailed analysis that will be included in the EIR.

Table 3 Summary of Potentially Significant Effects (Proposed Alberhill Project)

Resource Area	Potential Effects
Aesthetics	A permanent effect on aesthetics along Interstate 15 (I-15), an eligible State Scenic Highway, could result from operation of the proposed Alberhill Project because the proposed Alberhill Substation, new 500-kV transmission lines, and new and upgraded 115-kV subtransmission lines (115-kV Segments ASP1, ASP3, ASP4, and ASP5) would be visible to motorists. Permanent effects may result because of visual contrast, alterations to existing scenic integrity, blocked or partially blocked views, and the introduction of industrial-like facilities to a relatively undeveloped rural area. The following components, among others, would be viewable from I-15: • Two 37-foot-tall transformers • 49-foot-tall steel-enclosed 500-kV gas-insulated switchrack • Control building (7,000 square feet) • Parking area (7,600 square feet) and driveways (156,000 square feet) • 8-foot tall concrete or decorative-block substation perimeter wall • 500-kV transmission lines and lattice steel towers (95 to 190 feet tall) • 115-kV subtransmission lines (upgraded from 65–90 feet tall to 70–100 feet tall)
	Permanent effects on the visual character or quality of a site or its surrounding area could result from operation of the proposed Alberhill Project at the proposed Alberhill Substation site, along the 500-kV transmission line routes, along 115-kV Segments ASP1 and ASP6, and along the northern section of the proposed 115-kV Segment ASP2 route near the proposed Alberhill Substation site that may reduce the intactness, unity, or vividness of existing views.
Air Quality	Temporary violations of maximum daily onsite emission levels of fugitive dust (particulate matter of 10 micrometers or less [PM_{10}] and 2.5 micrometers or less [$PM_{2.5}$]) would occur during construction of the proposed Alberhill Substation due to grading, excavation, and asphalting. Temporary violations for maximum daily onsite emission levels of PM_{10} would occur during construction of the proposed 115-kV subtransmission lines from roadwork, site preparation, structure installation, and wire stringing.
	The temporary exposure of sensitive receptors to substantial concentrations of volatile organic compounds (VOC) and fugitive dust (PM_{10} and $PM_{2.5}$) would occur during construction of the proposed Alberhill Substation, 500-kV transmission lines, and 115-kV subtransmission lines.
Biological Resources	Temporary, permanent, direct, and indirect effects on Stephens' kangaroo rat would likely result from the construction and operation of the proposed Alberhill Substation, 500-kV lines, and several of 115-kV segments.
	Temporary, permanent, direct, and indirect effects on riparian areas and federally protected wetlands (e.g., Temescal Wash [Figure 2] or its tributaries) as defined by Clean Water Act Section 404 could result from construction and operation activities along the proposed 500-kV and 115-kV routes and at proposed Alberhill Substation site.

Table 3 Summary of Potentially Significant Effects (Proposed Alberhill Project)

Resource Area	Potential Effects
Hazards and Hazardous Materials	Each of the 560-MVA 500/115-kV transformers would contain approximately 33,550 gallons of transformer oil. In California, all used oil is managed as hazardous waste until tested to show it is not hazardous (Section 25250.4 of the California Health and Safety Code). Direct and indirect effects from the accidental release of hazardous materials could result during construction and operation of the proposed Alberhill Substation.
	Temporary and permanent effects from fire could result from construction and operation of the proposed Alberhill Project along the proposed 500-kV and 115-kV lines and at the proposed Alberhill Substation site, which would be located within or adjacent to Very High Fire Hazard Severity Zones (CAL FIRE 2007).
Hydrology and Water Quality	Temporary, direct, and indirect effects on water quality and existing drainage patterns could result from construction of the proposed Alberhill Substation, access road to 500-kV Tower SA-5, and along sections of the proposed 115-kV segments due to project-related activities such as the placement of fill, earth moving activities, and the potential for spill of hazardous materials near jurisdictional (e.g., Temescal Wash [Figure 2]) and potentially jurisdiction waterways/drainages.
Cumulative Effects	*Aesthetics.* A permanent effect on aesthetics along an eligible State Scenic Highway (I-15) could result from operation of the proposed Alberhill Project in addition to the proposed Talega–Escondido/Valley–Serrano (TE/VS) Project, and proposed Valley–Ivyglen Project. The proposed Alberhill Substation, 500-kV transmission lines, and 115-kV Segments ASP1 through ASP5, as well as the proposed Valley–Ivyglen Project 115-kV Segments VIG3 through VIG7 and proposed TE/VS switchyard and associated 500-kV transmission lines, would be visible from I-15.
	Air Quality. A temporary violation of maximum daily onsite emission levels of PM_{10} and $PM_{2.5}$ (fugitive dust) would occur during the construction of the proposed Alberhill System Project, proposed Valley–Ivyglen Project, and proposed TE/VS Project. Construction activities that overlap (e.g., earth-moving activities) may result in cumulative effects on air quality.
	Air Quality. Construction of the proposed Alberhill System Project, proposed Valley–Ivyglen Project, and proposed TE/VS Project could result in a temporary, cumulatively considerable net increase of VOC, nitrogen oxide, particulate matter of PM_{10}, and $PM_{2.5}$ due to diesel- and gasoline-fueled engine exhaust from vehicles and equipment.
	Biological Resources. Construction of the proposed Alberhill System Project, proposed Valley–Ivyglen Project, and proposed TE/VS Project could result in cumulatively considerable effects on riparian areas and federally protected wetlands.

Table 4 summarizes potentially significant effects of the proposed Valley–Ivyglen Project. These impacts will be further considered during preparation of the EIR. In addition, because the proposed Alberhill Project and proposed Valley–Ivyglen Project would be constructed during the same period and within the same geographic location, the table identifies cumulative effects as well.

Table 4 Summary of Potentially Significant Effects (Proposed Valley–Ivyglen Project)

Resource Area	Potential Effects
Aesthetics	Temporary and permanent effects on aesthetic resources along Interstate 15 (I-15) and State Route 74 (SR-74), both eligible State Scenic Highways, could result from construction and operation of the proposed Valley–Ivyglen Project. Construction would occur over a 24-month period, and construction activities along 115-kV Segments VIG1 through 115-kV VIG8 would be noticeable to area residents and motorists along I-15 and SR-74. Construction activities that would temporarily affect scenic resources include: • Vehicles and equipment used for excavation and grading activities, transporting and lifting, watering to control dust, transporting workers, and other construction activities; • Soil and vegetation removal; • Removal of existing power poles; • Temporary construction site fencing and signage; • Spraying of embankment slopes with an erosion control mixture, which may be vivid in color; and • Temporary outdoor storage of materials, stockpiling of spoils from excavation. A permanent effect on aesthetics along I-15 and SR-74 could result from the replacement of existing wood distribution line poles (30 to 80 feet tall) with new steel poles (up to 115 feet tall) and the introduction of new steel poles. The new poles would result in permanent visual contrast, alterations to existing scenic integrity, blocked or partially blocked views, and the introduction of industrial-like facilities to a relatively undeveloped rural area. The new and upgraded 115-kV subtransmission structures along 115-kV Segments VIG1 through 115-kV VIG8 would be intermittently noticeable to area residents and motorists along I-15 and SR-74.
Air Quality	Temporary violations for maximum daily onsite emission levels of PM_{10} would occur during construction of the proposed 115-kV subtransmission lines from roadwork, site preparation, structure installation, and wire stringing.
	The temporary exposure of sensitive receptors to substantial concentrations of volatile organic compounds (VOC) and fugitive dust (particulate matter of 10 micrometers or less [PM_{10}] and particulate matter of 2.5 micrometers or less [$PM_{2.5}$]) would occur during construction of the proposed 115-kV subtransmission lines.
Biological Resources	Temporary, permanent, direct, and indirect effects on Stephens' kangaroo rat would likely result from construction of several of the proposed 115-kV segments.
	Temporary, permanent, direct, and indirect effects on riparian areas and federally protected wetlands [Figures 3, 9] (e.g., Temescal Wash or its tributaries or the San Jacinto River) as defined by Clean Water Act Section 404 could result from construction and operation of a number of the proposed 115-kV segments. Among the areas likely to be affected are the proposed access roads and new structures along 115-kV Segment VIG6, trenched areas to install 115-kV Segment VIG8 underground, and the area where two TSPs (4765121E and 4765120E) would be installed along 115-kV Segment VIG1 adjacent to the San Jacinto River.
Hazards and Hazardous Materials	Temporary effects from the use of hazardous materials and petroleum products could result in upset or accident conditions involving the release of hazardous materials and petroleum products during construction.

Table 4 Summary of Potentially Significant Effects (Proposed Valley–Ivyglen Project)

Resource Area	Potential Effects
	Temporary and permanent effects from wildfire could result during construction and operation of the proposed Valley–Ivyglen Project along proposed 115-kV segments that would be located within or adjacent to Very High Fire Hazard Severity Zones (CAL FIRE 2007).
Hydrology and Water Quality	Temporary and long-term effects on water quality and existing drainage patterns could result from 1) foundation excavation for 115-kV structure installations; 2) vegetation removal and earthmoving activities at construction sites and for access roads; 3) culvert construction across aquatic features; and 4) blasting. Erosion or siltation on or offsite could result from the grading and vegetation clearing along a number of the proposed 115-kV Segments including along 115-kV Segment 8 where trenching would be required to install the proposed 115-kV line underground near Temescal Wash, a jurisdictional waterway [Figures 3, 9].
Land Use	Potential conflict with Riverside County and City of Lake Elsinore land use policies, zoning ordinances, and requirements within specific plan areas could result (e.g., Alberhill Ridge Specific Plan in Lake Elsinore) because of the installation of new structures within 50 feet of eligible State Scenic Highways (Riverside County General Plan Policy13.4), installation of structures along visually significant ridgelines and hilltops (Riverside County General Plan Policy 11.1(d)), or within an adopted road realignment for Lake Street (City of Lake Elsinore Vesting Tentative Tract No. 35001).
Noise	Temporary effects on nearby sensitive receptors could result from construction equipment and activities, including helicopter use and blasting that would exceed local noise standards, substantially increase temporary ambient noise levels, and generate substantial ground-borne vibrations during construction.
Traffic	Temporary effects on air traffic patterns could result from the use of helicopters during construction that increase safety risks.
Cumulative Effects	Cumulatively considerable effects may occur on aesthetics, air quality, and biological resources, as described in Table 3.

Sources: CPUC 2009, 2010a, 2010b

2.3 Nevada Hydro's Proposed TE/VS Project

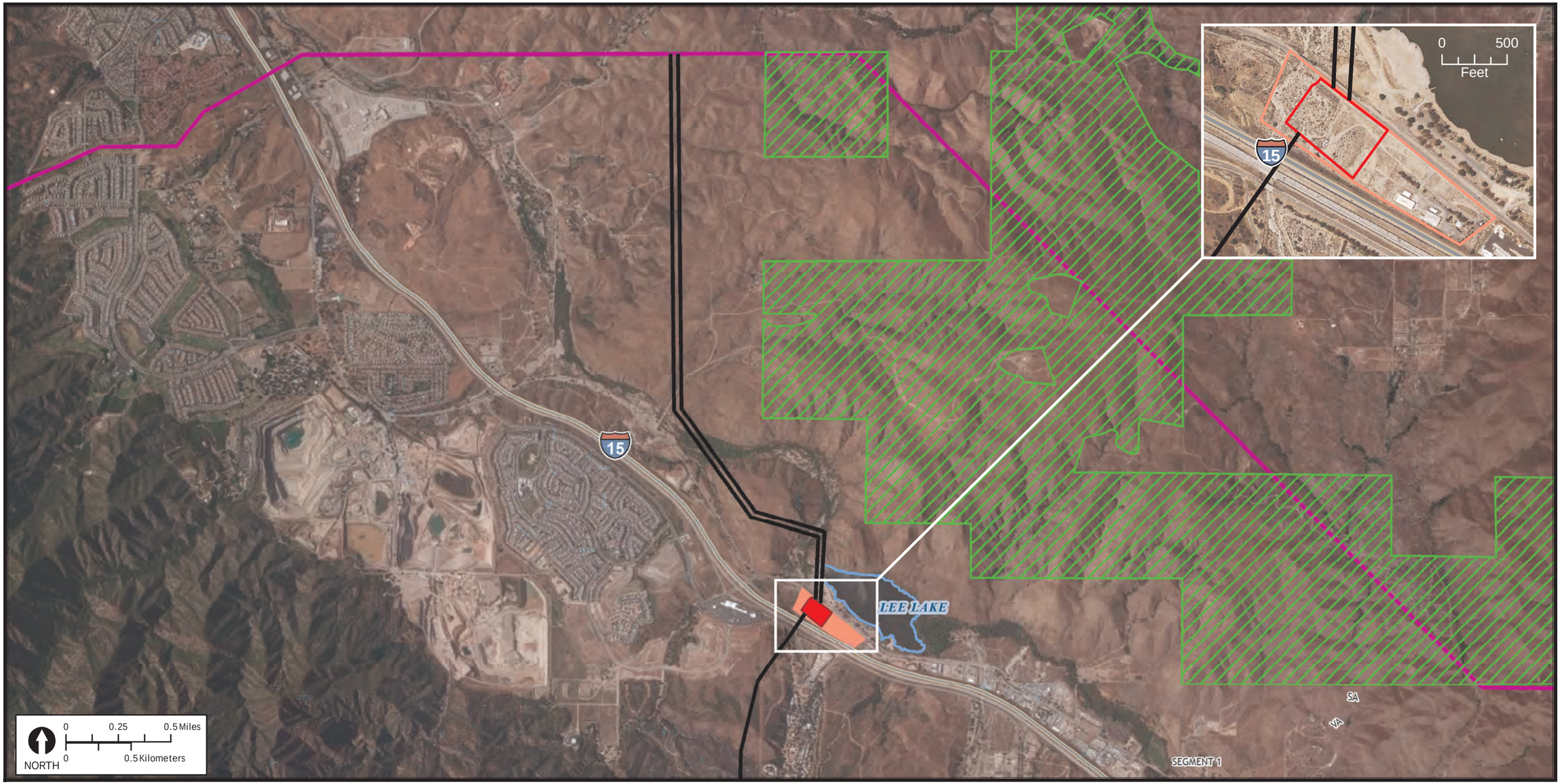
The Nevada Hydro Company, Inc. (Nevada Hydro) filed an application and PEA with the CPUC to construct the Talega–Escondido/Valley–Serrano (TE/VS) Project in 2010 and submitted a revised PEA in 2011. The TE/VS transmission line would be approximately 32 miles long. It would extend from San Diego Gas and Electric's 230-kV Talega–Escondido Transmission Line north to SCE's Serrano–Valley 500-kV Transmission Line. The interconnection with SCE's network would be facilitated by a new switchyard located adjacent to Lee Lake (also known as Corona Lake), approximately 2 miles northeast of the proposed Alberhill Substation site (Figures 2 and 4). Two 2.75-mile-long, single-circuit 500-kV transmission lines would be constructed from the proposed TE/VS switchyard site to SCE's Serrano–Valley 500-kV Transmission Line.

Because of the proximity of Nevada Hydro's proposed switchyard to the proposed Alberhill Substation site and need for both projects to connect to the Serrano–Valley 500-kV Transmission Line, in June 2010, Nevada Hydro submitted a Motion for Party Status to SCE's application for a CPCN to Construct the Alberhill System Project. On April 4, 2011, the CPUC granted Nevada Hydro this status.

As stated in the TE/VS PEA "there may exist tangible environmental, economic, and engineering benefits that would result from the proximal siting)" of the proposed Nevada Hydro switchyard and proposed SCE Alberhill Substation (Nevada Hydro 2011, p. 6-90). To accommodate both the proposed switchyard and Alberhill Substation while minimizing the number of 500-kV connections to the existing Serrano–Valley 500-kV Transmission Line, two combined substation-switchyard sites (ASP Alternative s A and H) are evaluated in this report.

On May 24, 2012, the Nevada Hydro's TE/VS 500 kV Interconnect Project Application (A.10-07-001) was dismissed without prejudice by the CPUC. Currently, there is no application before the CPUC for this project. However, more recently, it was recorded in California ISO 2014-2015 Transmission Plan that Nevada Hydro submitted the TE/VS 500 kV Interconnect Project into California ISO's Request Window in 2013 (California ISO 2015). California ISO did not find a "reliability need for the TE/VS in the current planning cycle and therefore this project was found to be not needed." (California ISO 2015)

Path: \\prtbhp1\GIS\SanFrancisco\CPUC\Alberhill\Maps\MXDs\Alternatives_Screening\TEVS_project_LeeLake.mxd



Riverside County Habitat Conservation Agency core reserves

Existing 500-kV Serrano-Valley Transmission Line

Talega-Escondido/Valley-Serrano 500 kV Interconnect Project

Switchyard (approximately 6 acres)

500/115-kV Substation (approximately 22 acres)

Figure 4
Proposed Talega-Escondido / Valley-Serrano Project
(Nevada Hydro)

Riverside County, California

ecology and environment, inc.
Global Environmental Specialists

Proposed and existing transmission and subtransmission line locations are approximate.

3 Alternatives Descriptions and Determinations

The alternatives screening process identified and evaluated a number of potential alternatives to the proposed Alberhill Project and proposed Valley–Ivyglen Project. This section describes each of the alternatives identified and explains why they were eliminated or retained for further consideration in the EIR. After screening, if it was determined that a potential alternative to one of the proposed projects would be unable to meet most of that project's objectives, would be infeasible, or would not avoid or substantially lessen a potentially significant effect of the proposed projects, it was eliminated from further consideration. Each alternative determined to meet each of the CEQA criteria for alternatives (see Section 2.2) was retained for further consideration in the EIR.

3.1 Alternatives to the Proposed Alberhill Project

ASP Alternative A – Lee Lake Substation Site (All Gas-Insulated Switchgear)

This alternative was identified by the CPUC. Under this alternative, a substation would be constructed at a 22.2-acre site located adjacent to Lee Lake (Figures 2 and 4). Nevada Hydro's proposed TE/VS Project, if constructed (see Section 2.3), would include a switchyard on the northwestern section of the site (Nevada Hydro 2011). This alternative site would accommodate both the TE/VS switchyard and the substation while minimizing the number of 500-kV connections to the existing Serrano–Valley 500-kV Transmission Line.

The applicant stated that the site is too small for construction of a substation with open-air insulated 115-kV switchracks as proposed under the Alberhill System Project. The applicant also stated that the shape of the property would be infeasible for construction of the proposed Alberhill Substation. A preliminary evaluation by the applicant indicated that the site would also be too small for a 500/115-kV substation with all gas-insulated switchgear (approximately 895 feet by 1080 feet, or 22.2 acres). In addition, a natural gas pipeline is located under the Lee Lake site (CPUC 2009) that may need to be relocated.

Analysis by the CPUC, however, determined that if constructed in a shape suited to the Lee Lake Site, it would be potentially feasible to construct a 500/115-kV substation with all gas-insulated

switchgear that would be large enough to accommodate the proposed ultimate build out of three transformers and one spare transformer. The switchyard proposed by Nevada Hydro would require approximately 6 acres (approximately 380 by 690 feet). Although the applicant prefers to construct load-serving substations in rectangular footprints, space is available at the Lee Lake Site (more than 40 acres; Nevada Hydro 2011) that would meet the requirements of the applicant's proposed Alberhill Project.

The amount of sulfur hexafluoride (SF_6)[10] required for the proposed Alberhill Substation would be 51,200 pounds. Under this alternative, the applicant estimates that 65,000 pounds of SF_6 would be required. Hence, an increase of 13,800 pounds of SF_6 would be required for operation of the proposed Alberhill Substation under ASP Alternative A.

Additionally, as discussed in Section 1.3, the proposed Valley–Ivyglen Project (SCE 2014) includes the construction of structures that would support a second 115-kV circuit, which would be installed as part of the proposed Alberhill Project (Figure 2). Under ASP Alternative A, the double-circuit section of the proposed Valley–Ivyglen 115-kV Subtransmission Line would extend past the proposed Alberhill Substation site along Temescal Canyon Road approximately 1.7 additional miles to the alternative Lee Lake site. Two 3-mile-long 500-kV transmission lines would extend northwest from the proposed Alberhill Substation as shown in Figure 4 if constructed at the Lee Lake site.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

[10] The United States electric power industry has widely used SF_6 gas in circuit breakers, gas-insulated substations, and other switchgear used in the transmission system to manage the high voltages carried between generating stations and customer load centers since the 1950s. Electrical power equipment is designed to prevent the SF_6 from emitting into the atmosphere, but significant leaks still occur from aging equipment and during equipment maintenance and servicing. With a global warming potential 23,900 times greater than carbon dioxide (CO_2) and an atmospheric life of 3,200, one pound of SF_6 has the same global warming impact of 11 tons of CO_2 (US EPA 2014).

Environmental Advantages

A smaller substation (22.2 acres rather than the proposed 34 acres) would require less ground disturbance, which would result in reduced effects on air quality from fugitive dust and vehicle and equipment emissions. This alternative and TE/VS Project would use the same 500-kV transmission lines to connect to the Serrano–Valley 500-kV Transmission Line, resulting in reduced cumulative effects on air quality from the construction of duplicate 500-kV transmission lines. In addition, ASP Alternative A may reduce cumulative visual effects on I-15, which is an eligible State Scenic Highway (Caltrans 2011) by reducing the amount of transmission lines visible to motorists and other sensitive viewer groups.

Environmental Disadvantages

The Lee Lake Site may be moderately susceptible to liquefaction (County of Riverside 2008a). In addition, the 500-kV transmission lines may need to be constructed over Lee Lake, which could present engineering and maintenance issues and result in visual and other environmental effects. Effects from increased fire risk or risk of accident involving the release of transformer oil, contaminants, or hazardous materials would be similar to those of the proposed Alberhill Project. Effects on jurisdictional and potentially jurisdictional waterways would be similar with respect to the proposed 500-kV lines, which would traverse drainages into Temescal Wash (Figure 2). The Lee Lake Site, however, is crossed by an intermittent drainage into Temescal Wash (NHD 2010). These issues will be evaluated further in the EIR.

Conclusion

RETAINED. ASP Alternative A would be feasible, meet the project objectives, reduce effects on air quality, and reduce cumulative air quality and aesthetic effects. Therefore, this alternative was retained for further consideration in the EIR.

ASP Alternative B – All Gas-Insulated Switchgear at Proposed Alberhill Substation Site

This alternative was identified by the CPUC. Under this alternative, a 500/115-kV substation with all gas-insulated switchgear for an ultimate build out of three transformers and one spare would be constructed at the proposed Alberhill Substation site. The amount of SF_6 required for the proposed Alberhill Substation would be 51,200 pounds. Under this alternative, the applicant

estimates that 65,000 pounds of SF_6 would be required. Hence, an increase of 13,800 pounds of SF_6 would be required for operation of the proposed Alberhill Substation under ASP Alternative B. This alternative would require an approximate 22.2-acre site. The transmission and subtransmission lines for this alternative would be the same as those for the proposed Alberhill Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative B would reduce the acreage required for the substation (22.2 acres rather than the proposed 34 acres). The smaller substation size would reduce the amount of ground disturbance and soil import required for the proposed Alberhill Substation; therefore, effects on air quality would be reduced. Effects on I-15, an eligible State Scenic Highway (Caltrans 2011), may also be reduced.

Environmental Disadvantages

Construction and operation under this alternative would result in the same environmental effects identified for the proposed Alberhill Project, with the exception of the environmental advantages discussed above.

Conclusion

RETAINED. ASP Alternative B would be feasible, reduce effects on air quality, and meet the project objectives. It may also reduce effects on aesthetics. In addition, the proposed Alberhill Project may result in cumulatively considerable effects on air quality and aesthetics that may be reduced by this alternative. Therefore, this alternative was retained for further consideration in the EIR.

ASP Alternative C – Reduced Capacity Alberhill Substation (One Fewer Transformer)

This alternative was identified by the CPUC. Under this alternative, the proposed Alberhill Substation would be constructed at the proposed Alberhill Substation site for an ultimate build out of two transformers and one spare transformer. This alternative would require an approximately 33-acre site. The transmission and subtransmission routes for ASP Alternative C would be the same as those for the proposed Alberhill Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective. In addition, the applicant projected that a second load-serving transformer would not be required at the proposed Alberhill Substation until sometime between 2024 and 2029 and that a third load-serving transformer would not be required until between 2037 and 2050. The applicant's current, near-term projections extend 10 years through 2023, beyond which the applicant stated that forecasts are less certain. Although electrical demand has increased yearly since the applicant's recorded drop in demand in 2008 (Table 1), it is not clear that electrical demand will continue to increase for the next 25 to 35 years at a rate that indicates a third load-serving transformer would be required prior to 2050.

Environmental Advantages

ASP Alternative C would require at least one fewer acre of land disturbance and less imported soil to construct than the proposed Alberhill Substation. The applicant estimates a 3 percent reduction in the substation footprint, which would reduce effects on air quality from fugitive dust and equipment and vehicle emissions.

Effects on aesthetics may also be reduced because one fewer 560-MVA 500/115-kV transformer (approximately 37 feet tall) and fewer 115-kV dead-end structures (approximately 60 feet tall

each) would be installed. Additionally, up to five fewer 115-kV subtransmission lines would ultimately extend from the proposed Alberhill Substation.[11] Each of these components would be viewable from I-15, an eligible State Scenic Highway (Caltrans 2011). Each of the 560-MVA 500/115-kV transformers would contain approximately 33,550 gallons of transformer oil. With one fewer transformer, at least 33,000 fewer gallons of transformer oil would be located at the proposed Alberhill Substation site.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those associated with the proposed Alberhill Project except for the environmental advantages discussed above. Should the proposed Alberhill Substation wall need to be expanded for the installation of a fourth transformer, additional environmental effects could occur, but the applicant has indicated that they are uncertain whether a fourth transformer (as a spare) would be required for the proposed substation.

Conclusion

RETAINED. ASP Alternative C would be feasible, meet the project objectives, and reduce effects on air quality and aesthetics and from the risk of accident conditions involving the release of hazardous materials. In addition, the proposed Alberhill Project may result in cumulatively considerable effects on air quality and aesthetics that may be reduced by this alternative. Therefore, this alternative was retained for further consideration in the EIR.

ASP Alternative D – All Open-Air Insulated Switchgear at the Proposed Substation Site

This alternative was identified by the CPUC. Under this alternative, the proposed Alberhill Substation would be constructed for an ultimate build out of three transformers and one spare at the proposed Alberhill Substation site but all the 500-kV switchgear would be open-air insulated instead of gas insulated. This alternative would require an approximate 40-acre site. The

[11] The CPUC estimates that 12 to 15 115-kV subtransmission lines may extend from the proposed Alberhill Substation in the future if it is expanded, and three load-serving 500/115-kV transformers are operational. The initial build of the proposed substation, with one load-serving 500/115-kV transformer, would accommodate five 115-kV subtransmission lines.

transmission and subtransmission line routes for ASP Alternative D would be the same as for the proposed Alberhill Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be legally and economically feasible but may not be technically feasible. The applicant stated that to obtain the additional 6 acres of flat land required to construct an all open-air insulated substation at the proposed site would require the removal of more than one million cubic yards of rock and soil. Hills surrounding the proposed site would need to be excavated, which would substantially decrease slope stability.

Environmental Advantages

ASP Alternative D would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project (Table 3). The alternative would reduce GHG emissions, but GHG emissions have not been identified as a potentially significant impact of the proposed project.

Environmental Disadvantages

ASP Alternative D would increase the acreage required for the substation (40 acres rather than the proposed 34 acres). The increased area of ground disturbance and need for additional imported soil would increase effects on air quality because of increased vehicle and equipment emissions and fugitive dust. The applicant stated that to obtain the additional 6 acres of flat land required to construct an all open-air insulated substation at the proposed site would require the removal of more than one million cubic yards of rock and soil. Hills surrounding the proposed site would need to be excavated, which could substantially alter drainage patterns and cause erosion in addition to increasing aesthetic impacts.

Conclusion

ELIMINATED. ASP Alternative D would meet the project objectives but may not be feasible. In addition, this alternative would not reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative E – Valley Substation Upgrade

This alternative includes three possible methods to expand the electrical capacity of Valley Substation, one of which was identified by the CPUC and two of which were identified by the applicant: 1) install another 560-MVA 500/115-kV transformer at Valley Substation; 2) connect to the Inland Empire Energy Center (IEEC; approximately 0.5 miles west of Valley Substation); or 3) connect to Edison Mission Energy's proposed Sun Valley 115-kV Power Generation facility (approximately 600 feet south of Valley Substation). The IEEC interconnection to Valley Substation would require an additional transformer at Valley Substation to step down the electricity generated at the IEEC from 500 to 115 kV. Consideration of the IEEC interconnection is therefore reviewed under the Additional Valley South Transformer method discussed below.

Additional Valley South Transformer / IEEC Interconnection

For these two Valley Substation Upgrade methods, an additional load-serving transformer would be installed at Valley Substation to serve the Valley South 115-kV System. This alternative was identified in the PEA. The additional transformer would raise the system's load-serving capacity by approximately 561 MVA (from 1,119 to 1,680 MVA). A new substation would not be constructed, and the length of proposed 500-kV transmission lines would be reduced from 3 miles to 0.5 miles if connecting a new transformer at Valley Substation to the IEEC. No new 500-kV transmission lines would be required for installation of a Valley South transformer without connection to the IEEC. No modification would be required for 115-kV Segments ASP1 through ASP4 (approximately 11.5 miles), but 115-kV Segments ASP5, ASP6, and ASP7 (approximately 8.7 miles) would still be constructed as proposed to make use of the additional 115-kV electricity made available by installation of a new Valley South transformer.

An additional 2.5 miles of 115-kV lines would be reconductored along the Valley–Newcomb–Skylark 115-kV subtransmission line. The applicant stated that within a few years, an additional 15 miles of 115-kV subtransmission lines that are approaching capacity would also need to be reconductored. Under the proposed Alberhill Project, approximately 21 miles of 115-kV subtransmission lines would be reconductored, all of which would require new or replaced structures. The net increase in 115-kV subtransmission line reconductoring under this alternative in comparison to the proposed Alberhill Project would be approximately 6 miles.

Sun Valley 115-kV Power Generation Facility

For this Valley Substation Upgrade method, which was identified by the CPUC, the Sun Valley 115-kV Power Generation (Sun Valley) facility proposed by Edison Mission Energy would be connected to the Valley South 115-kV System at Valley Substation. The Sun Valley interconnection would have the potential to raise the Valley South 115-kV System's capacity by approximately 508 MVA (from 1,119 MVA to 1,627 MVA). The 500-megawatt Sun Valley facility would be designed for peaking power generation during periods of high electric demand, which generally occur in the summer during daytime hours.

The Sun Valley facility would be constructed on 20 acres located approximately 600 feet south of Valley Substation. A 600-foot-long 115-kV subtransmission line with one offsite powerline structure would be constructed, and a 750-foot-long natural gas pipeline would be installed. As described for the Additional Valley South Transformer method, above, the net increase in 115-kV subtransmission line reconductoring required to make use of the additional 115-kV electricity from the Sun Valley facility would be approximately 6 miles.

The Sun Valley project's application with the California Energy Commission, however, is currently suspended and has been idle since 2008. Sufficient emission reduction credits were not available in the South Coast Air Quality Management District for the project to be permitted. A new offset strategy is being developed, and once ready, Edison Mission Energy stated that it will resubmit its permit application with the air quality district (Garner 2011). Subsequently, Edison Mission Energy is expected to request that its application be reopened with the California Energy Commission.

Consideration of CEQA Criteria

Project Objectives

ASP Alternative E would not meet ~~most of~~ the Alberhill Project objectives (Section 1.5.1). This alternative would not relieve projected electrical demand ~~but~~ and would not include a new 500/115-kV substation within the ENA or maintain system ties between a new 115-kV system and the Valley South 115-kV System.

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective. The applicant stated in the PEA that this alternative may not be technically feasible because of the short-circuit rating of the Valley South 115-kV bus and increased likelihood of induction motor stalling events. The 2010 short circuit value of the Valley South 115-kV bus was calculated at 32 kiloamps (kA) with the two existing 560-MVA 500/115-kV transformers. The substation's 115-kV bus is rated at 50 kA. Installation of an additional Valley South transformer would raise the short circuit level by approximately 16 kA to 48 kA. Based on this information from the applicant, the CPUC has determined that although the increase in the Valley South 115-kV bus short circuit value would approach the maximum short circuit value, it would not exceed it.

The applicant stated that installation of an additional Valley South transformer would also increase the likelihood of *induction motor stalling events*—instances of delayed voltage recovery generally caused by customer air conditioning use. The CPUC is aware of the induction motor stalling phenomenon but has determined that the issue, on its own, may not make this alternative infeasible.

Environmental Advantages

Under this alternative, the proposed Alberhill Substation and several miles of new 500-kV transmission lines would not be constructed. Effects on motorists' views from I-15, an eligible State Scenic Highway (Caltrans 2011), would be reduced. In addition, it is assumed that less ground would be disturbed during construction of this alternative than during construction of the proposed Alberhill Project, which would reduce effects on air quality from fugitive dust and vehicle and equipment emissions. The risk of accidental release of transformer oil would be reduced because only one 560-MVA 500/115-kV transformer would be installed if the Additional Valley South Transformer method is selected or no additional transformers would be installed if the Sun Valley method is selected.

Environmental Disadvantages

Although the proposed Alberhill Substation and several miles of new 500-kV transmission lines would not be constructed, 26 miles of 115-kV subtransmission line reconductoring with structure replacement would be required to make output from an additional Valley South transformer

usable. Approximately 5 of the 26 miles of 115-kV subtransmission line would be located near SR-74, which is an eligible State Scenic Highway (Caltrans 2011). However, it is assumed that the net effect on aesthetics would be reduced under this alternative because the 115-kV subtransmission lines to be reconductored along SR-74 already exist. The 115-kV routes near I-15 would be the same as for the proposed Alberhill Project. The proposed substation and 500-kV transmission lines would create new features along I-15 rather than upgrade or add to existing features.

If the IEEC or Sun Valley facilities provide electricity to the Valley South 115-kV System, adverse effects on air quality from the burning of natural gas may outweigh the reduction of fugitive dust discussed in the Environmental Advantages section above. Further analysis, however, would be required to make this determination. Further analysis along the 115-kV routes associated with this alternative would also be required to determine whether effects from crossing jurisdictional or potentially jurisdictional waterways or wetlands would be reduced.

Effects from increased fire risk would be similar to those of the proposed Alberhill Project if an additional transformer is installed at Valley Substation. For this alternative, the 5-mile 115-kV subtransmission line segment along SR-74 would be within a Very High Fire Hazard Severity Zone (CAL FIRE 2007). Effects from increased fire risk may increase if the IEEC or Sun Valley facilities provide electricity to the Valley South 115-kV System because of the burning of natural gas, but further analysis would be required to make this determination.

Conclusion

ELIMINATED. ASP Alternative E would be feasible and may reduce potentially significant effects on aesthetics and from fugitive dust and the risk of accident conditions involving the release of hazardous materials. However, this alternative would not meet the project objectives; therefore, it was eliminated from further consideration in the EIR.

ASP Alternative F – Transfer Demand to Valley North System

This alternative was presented in the PEA. ASP Alternative F would transfer electrical demand from two 115/12-kV substations (Newcomb and Sun City substations; Figure 1) served by the Valley South 115-kV System to the Valley North 115-kV System. This alternative would require

establishing 115-kV connections between the two systems by constructing up to 15 miles of new 115-kV subtransmission lines. It would not require the construction and operation of a new 500/115-kV substation or 500-kV transmission lines.

Under this alternative, the resultant reduction in load on the Valley South 115-kV System would keep demand below the operating limits of both the Valley North and South 115-kV systems beyond 2016. The applicant projects, however, that prior to the end of the planning period in 2023, a project similar to the proposed Alberhill System Project would be required and the Newcomb and Sun City substations would be transferred back to the Valley South 115-kV System to avoid overloading the Valley North 115-kV System.

Consideration of CEQA Criteria

Project Objectives

This alternative would not meet the three Alberhill Project objectives (Section 1.5.1). It would not relieve projected electrical demand through the applicant's planning period (Table 1), include construction of a new 500/115-kV substation, or maintain systems ties between a new system and the Valley South 115-kV System.

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

There are no environmental advantages to this alternative. Based on the applicant's estimates, the proposed Alberhill Project or a similar project would need to be constructed prior to 2023.

Environmental Disadvantages

Under this alternative, construction of the proposed Alberhill Substation and several miles of new 500-kV transmission lines would be delayed, but the applicant estimates that construction would still occur prior to 2023. Construction of the proposed 21 miles of 115-kV subtransmission line would also be delayed, but an additional 15 miles of 115-kV subtransmission line would be constructed to temporarily transfer two 115/12-kV substations from the Valley South 115-kV System to the Valley North 115-kV System. Construction and operation under this alternative would result in environmental effects similar to those identified

for the proposed Alberhill Project, but additional effects on air quality would occur because of fugitive dust and vehicle and equipment emissions from construction of an additional 15 miles of 115-kV subtransmission lines.

Conclusion

ELIMINATED. ASP Alternative F would be feasible, but it would not meet the project objectives or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative G – Auld System Project

This alternative was presented in the PEA and included in the applicant's report to the California ISO on the proposed Alberhill System Project (SCE 2011a, 2011b). This alternative is similar to the proposed Alberhill Project, with the exception that the Auld 500/115-kV Substation would be constructed substantially further south from the 500-kV source lines. It would require two 14-mile-long, 500-kV transmission lines that would extend from a proposed Auld Substation site to connect to one of the existing 500-kV transmission lines near Valley Substation. The Auld 500/115-kV Substation would be located near the existing 115/12-kV Auld Substation. New ROW would be required for the 28 miles of new 500-kV transmission lines. It is assumed that 115-kV subtransmission line and telecommunication line requirements for the Auld System Project would be similar to those of the proposed Alberhill System Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

The California ISO Board of Governors rejected the Auld System Project as an alternative to the proposed Alberhill Project because of the length of time required to permit and construct the 500-kV transmission lines. The California ISO report to the Board of Governors on the proposed Alberhill System Project states that the Auld System Project would be difficult to permit because of the need to acquire 28 miles of ROW through heavily populated areas and the construction time would be much longer (California ISO 2009).

The applicant stated that another reason the Auld System Project was rejected by the California ISO is that the proposed design would originate both 500-kV source lines from Valley Substation. The California ISO system planners told the applicant that this method of service to a new Auld 500/115-kV Substation would not be approved because of reliability concerns. The lines would also need to follow diverse paths (use separate ROWs) rather than share one ROW to meet reliability criteria. The applicant has not yet prepared an alternative method of service; however, based on the existing 500-kV systems in the area, the applicant anticipates that service would likely be provided by the 500-kV transmission lines originating from either the Serrano 500-kV System or Devers 500-kV System. These 500-kV transmission lines are located west and east/northeast of Valley Substation, respectively. In either case, each of the 500-kV transmission lines would likely be substantially longer than 14 miles. Although, once redesigned, the alternative may be feasible to construct, it is likely that it would not be feasible to construct in time to meet an operational need date of 2018 (Table 1).

Environmental Advantages

There are no known environmental advantages to this alternative. Conceptual Auld 500/115-kV Substation site and 500-kV transmission line routes have not been developed by the applicant. It is known, however, that the 500-kV transmission lines would be at least four times as long as the proposed 500-kV transmission lines and that the Auld 500/115-kV Substation would be similar in size to the proposed Alberhill 500/115-kV Substation. It is assumed that 115-kV subtransmission line requirements would be similar to the proposed 115-kV subtransmission lines, but the applicant has not developed conceptual 115-kV line requirements for the Auld System Project.

Environmental Disadvantages

ASP Alternative G would require two new 500-kV transmission lines that would each be at least 14 miles long. The additional ground disturbance needed to construct the 500-kV transmission lines would likely increase fugitive dust and vehicle and equipment emissions. Conceptual Auld 500/115-kV Substation site and 500-kV transmission line routes, however, have not been developed by the applicant. Although it appears likely that effects on air quality would increase because of the longer 500-kV transmission lines, it is not possible to determine whether

environmental effects would increase or decrease for each resource area without further design details from the applicant.

Conclusion

ELIMINATED. ASP Alternative G would meet the project objectives but may not be feasible, and it is reasonable to assume that effects would be similar to or greater than those of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative H – Lee Lake Substation Site (Proposed Alberhill Substation Design)

Under this alternative, a substation would be constructed at a 22.2-acre site located adjacent to Lee Lake (Figures 2 and 4). Nevada Hydro's proposed TE/VS Project would include a switchyard on the northwestern section of the same site (Nevada Hydro 2011). The proposed Alberhill Substation would include open-air insulated 115-kV switchracks. The applicant also stated that the shape of the property would be infeasible for construction of the proposed substation. See also the discussion for ASP Alternative A (Lee Lake Substation Site, All Gas-Insulated Switchgear).

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

SCE stated that the site is too small for construction of the Alberhill Substation as proposed. The CPUC concurs with the applicant that, as proposed, a new 500/115-kV substation with gas-insulated 500-kV switchracks and open-air insulated 115-kV switchracks would require more area than available at the Lee Lake Substation site. Therefore, this alternative would not be feasible to construct.

Environmental Advantages

Refer to the discussion of ASP Alternative A (Lee Lake Substation Site, All Gas-Insulated Switchgear).

Environmental Disadvantages

Refer to the discussion of ASP Alternative A (Lee Lake Substation Site, All Gas-Insulated Switchgear).

Conclusion

ELIMINATED. ASP Alternative H would meet the project objectives and reduce environmental effects, but it would not be feasible. Therefore, this alternative was eliminated from further consideration.

ASP Alternative I – Gavilan Hills Site (Northwest of Proposed Alberhill Substation Site)

This alternative was presented in the PEA. Under this alternative, the proposed Alberhill Substation would be constructed on a west-facing slope of the Gavilan Hills (Figure 2). The alternative site consists of two 80-acre parcels, totaling 160 acres. The 500-kV transmission lines would be approximately 2 miles longer because they would be routed to avoid the Lake Mathews/Estelle Mountain Core Reserve. Under this alternative, 115-kV Segment ASP2 would extend approximately 1 mile farther north than proposed to reach the Gavilan Hills site. Under this alternative, 115-kV Segments ASP1 and ASP3 through ASP8 would be constructed as described for the proposed Alberhill Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative I would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

ASP Alternative I would not be located adjacent to an existing paved road and would require cutting into a hillside and extensive grading. The additional ground disturbance would likely increase effects on air quality, and the longer 500-kV transmission lines would increase effects on aesthetics along I-15, an eligible State Scenic Highway (Caltrans 2011). Effects on jurisdictional and potentially jurisdictional waterways would be similar with respect to the proposed 500-kV lines, which would traverse drainages into Temescal Wash. The ASP Alternative I substation site, however, is crossed by an intermittent drainage into Temescal Wash, and the proposed substation site is not (NHD 2010).

Conclusion

ELIMINATED. ASP Alternative I would be feasible and meet the project objectives but would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative J – East of the Proposed Alberhill Substation Site

This alternative was presented in the PEA. Under this alternative, the proposed Alberhill Substation would be constructed on a 45-acre site located adjacent to, and east of, the proposed substation site (Figure 2). The applicant stated that blasting and extensive grading would be required to prepare the site for the proposed substation. The site may require all gas-insulated switchgear (for both the 500-kV and 115-kV switchracks) to conserve space. The two 500-kV transmission lines would each be 0.25 to 0.5 miles shorter than as proposed. Under this alternative, 115-kV Segment ASP2, a 115-kV subtransmission line segment that requires no structure replacement, would be approximately 0.25 miles shorter than as proposed. Under this alternative, 115-kV Segments ASP1 and ASP3 through ASP8 would be constructed as described for the proposed Alberhill Project.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative J would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

ASP Alternative J would require less ground disturbance for the 500-kV transmission lines, but ground disturbance for the proposed Alberhill Substation would require blasting and extensive grading for site preparation. It is assumed that effects on air quality would be similar to the proposed Alberhill Project. Although the 500-kV transmission lines would be shorter, effects on aesthetics would not be substantially reduced. In addition, the blasting and removal of cut materials required for ASP Alternative J may adversely affect aesthetics. Effects on jurisdictional and potentially jurisdictional waterways would be similar with respect to the proposed 500-kV lines, which would traverse a drainage into Temescal Wash. The ASP Alternative J substation site, however, is crossed by an intermittent drainage into Temescal Wash, and the proposed substation site is not (NHD 2010).

Conclusion

ELIMINATED. ASP Alternative J would be feasible and meet the project objectives but would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative K – 115-kV Segment ASP8 Substation Site

This alternative was identified by the CPUC. This alternative would be located on land adjacent to the proposed 115-kV Segment ASP8 (Figure 2) within the City of Menifee northwest of the intersection of Murrieta Road and McLaughlin Road. The land is designated as Medium Density Residential to the west of the intersection and Light Industrial to the east of the intersection (County of Riverside 2003a). The site is flat and sufficiently sized. Roadside site visits by the CPUC and Google aerial and street-view imagery indicate that the site would likely require less grading than the proposed Alberhill Substation site and that there are no structures onsite.

Houses, however, would be located within a few hundred feet of each side of the proposed 34-acre substation if constructed at the site (Google Earth 2014).

At the ASP Alternative K site, the proposed Alberhill Substation would be adjacent to the exiting Serrano–Valley 500-kV Transmission Line, existing Valley–Elsinore–Ivyglen 115-kV Subtransmission Line, and Valley–Ivyglen 115-kV Subtransmission Line (approved for construction in 2011). The alternative would require the construction of two 500-kV transmission lines that would each be less than 0.25 miles long.

Under this alternative, 115-kV Segments ASP5 through ASP8 would be constructed as proposed (8.7 miles). In addition, 115-kV Segment ASP3 would be extended to Elsinore Substation (1.25 miles), and up to 2 miles of 115-kV subtransmission lines would be required to connect the proposed substation from the alternative site to the existing Valley–Elsinore–Ivyglen 115-kV Subtransmission Line and the Valley–Ivyglen 115-kV Subtransmission Line (approved for construction in 2011). Prior to 2018, the applicant stated that an additional 18 miles of 115-kV subtransmission line would be required to make the increased electrical output from the proposed substation under ASP Alternative K usable, which would include the proposed 115-kV Segment ASP4. Proposed 115-kV Segments ASP1 and ASP2 would not be required. In total, ASP Alternative K would require approximately 30 miles of 115-kV subtransmission line construction, and the proposed Alberhill Project would require approximately 21 miles.

Consideration of CEQA Criteria

Project Objectives

ASP Alternative K would not meet two of the three Alberhill Project objectives (Section 1.5.1). It would ~~relieve projected electrical demand but would not~~ construct a new 500/115-kV substation within the applicant's ENA (Figure 1)<u>, but it would not relieve projected electrical demand</u> ~~-~~or maintain system ties between a new 115-kV system and the Valley South 115-kV System. The alternative site would be located on the edge of the ENA a few miles west of Valley Substation, and if constructed at this site, the proposed 500/115-kV substation under ASP Alternative K would not be located near any of the existing 115/12-kV substations that it is proposed to serve or the existing load center identified by the applicant along the I-15 corridor. The applicant projects that electrical demand will continue to grow along the I-15 corridor.

If the proposed Alberhill Substation were constructed at the alternative site, the applicant stated that system ties between the new Alberhill 115-kV system and the Valley South 115-kV System could be partially but not fully maintained. Two of the 115/12-kV substations (Newcomb and Skylark) could be transferred back to Valley Substation, but the other three 115/12-kV substations (Elsinore, Fogarty, and Ivyglen) could not. The reserve tie line, a segment of the Valley–Elsinore–Ivyglen 115-kV Subtransmission Line that would be energized but not load serving after construction of the proposed Alberhill Project, would no longer be available in reserve. Instead, under ASP Alternative K, it would be used to connect the proposed Alberhill Substation to the 115-kV System, which it would serve. Without use of the reserve line, the remaining 115-kV lines between the Valley, Newcomb, and Skylark Substations would not have the capacity to serve the remainder of the 115-kV System (i.e., the Elsinore, Fogarty, and Ivyglen Substations).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative K would avoid the construction of 2 to 3 miles of 500-kV transmission lines from the substation site to the Serrano–Valley 500-kV Transmission Line. This alternative may also require less grading to prepare the site for construction of the proposed Alberhill Substation, which would reduce effects on air quality. Because an additional 10 miles of 115-kV subtransmission line construction would be required, however, effects on air quality may be similar to those associated with the proposed Alberhill Project.

Preliminary review of the ASP Alternative K substation site indicates that effects on jurisdictional and potentially jurisdictional drainages would be avoided (NHD 2010). In addition, construction and operation of the proposed substation at the alternative site would not be visible to motorists on I-15, which would avoid potentially significant effects on aesthetics along an eligible State Scenic Highway.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Alberhill Project, with the exception of the environmental advantages discussed above. Although the alternative substation site would be located within a High Fire Hazard Severity Zone instead of a Very High Fire Hazard Severity Zone, most of the additional 115-kV subtransmission line construction would occur within Very High Fire Hazard Severity Zones (CAL FIRE 2007).

Conclusion

ELIMINATED. ASP Alternative K would be feasible, reduce effects on aesthetics, and reduce cumulative effects on aesthetics. However, this alternative would not meet most of the project objectives. Therefore, this alternative was eliminated from further consideration.

ASP Alternative L – Adjacent to Fogarty Substation Site, Alternative M – Substation Site Near Lake Street (Castle & Cooke Property)

These alternatives were identified by the public during scoping. Under these alternatives, a 500/115-kV substation, as described for the proposed Alberhill Project, would be constructed near Lake Street or adjacent to Fogarty Substation.[12] The two 500-kV transmission lines for these alternatives would each be at least 2 miles longer than as proposed and would cross I-15 (an eligible State Scenic Highway) to loop into the Serrano–Valley 500-kV Transmission Line (Figure 2). Under this alternative, 115-kV Segment ASP1 would be 0.25 to 0.5 miles longer, connecting to 115-kV Segment ASP2 near the intersection of Coal Avenue and Terra Cotta Road. Under this alternative, 115-kV Segment ASP2, a 115-kV subtransmission line segment that requires no structure replacement, would be approximately 3 miles shorter than as proposed, while 115-kV Segments ASP3 through ASP8 would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

[12] The applicant began construction of the Fogarty Substation in 2011.

Feasibility

These alternatives would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative s L and M would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

ASP Alternatives L and M would require at least 4 miles of additional 500-kV transmission lines, which would increase effects on air quality from fugitive dust and vehicle and equipment emissions. These alternatives would require longer 500-kV transmission lines, and the 500-kV transmission lines would cross I-15, both of which would increase the visibility of the transmission lines to motorists. Although the proposed Alberhill Substation may not be visible from I-15, effects on aesthetics along I-15 may increase because the 500-kV transmission lines would cross I-15. Effects on jurisdictional and potentially jurisdictional waterways would also increase because the 500-kV lines would traverse a number of drainages into Temescal Wash (NHD 2010). For the other resource areas discussed in this report (Table 3), construction and operation of these alternatives would result in similar environmental effects to those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative s L and M would be feasible and meet the project objectives. The alternatives, however, would not avoid or reduce a potentially significant effect of the proposed Alberhill Project; therefore, they were eliminated from further consideration.

ASP Alternative N – 500-kV Line N1

This alternative was identified in the PEA. Line N1 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would traverse areas with steeper topographic features, requiring helicopter construction. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

Several towers for 500-kV Line N1 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible.[13]

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

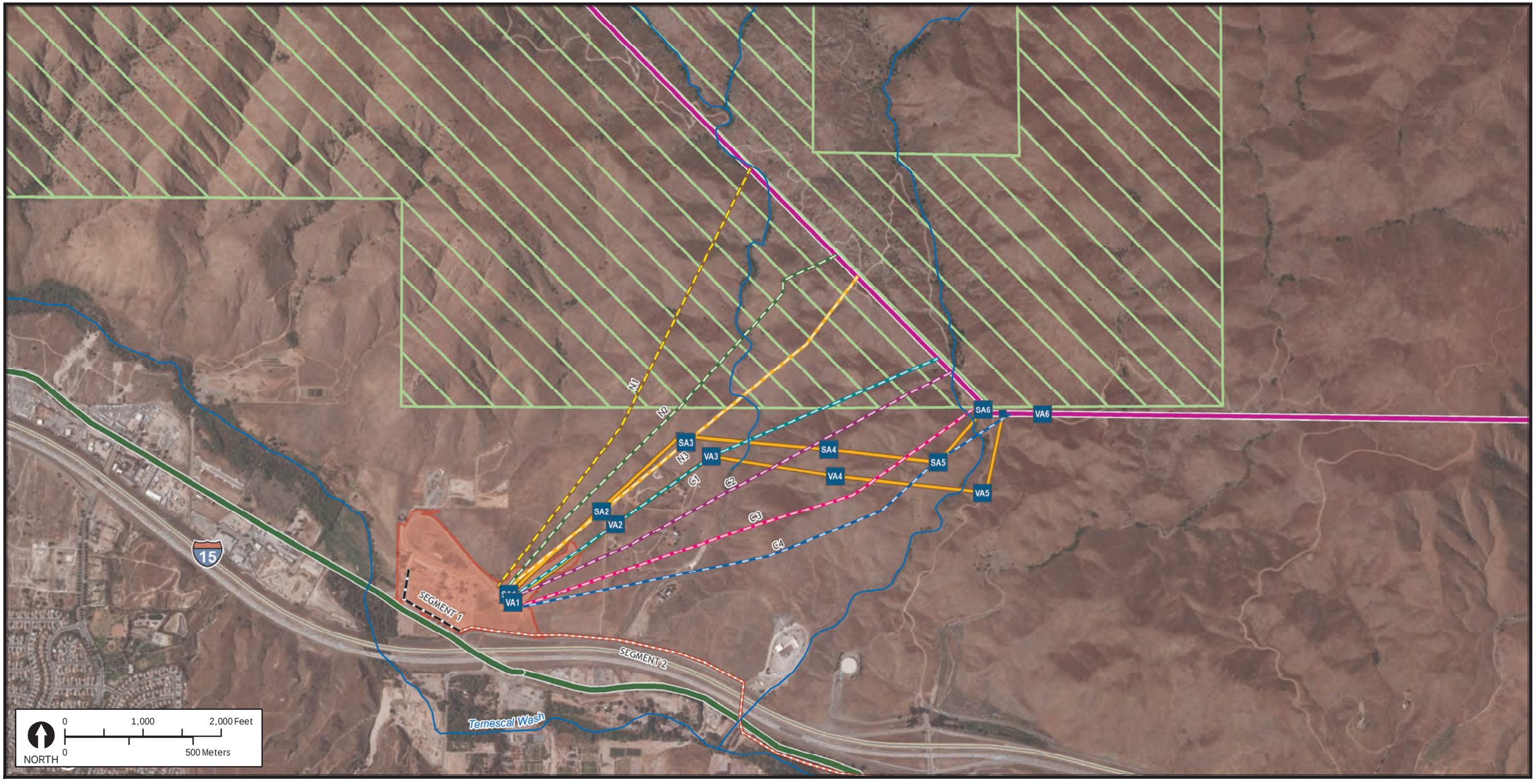
Environmental Disadvantages

The Riverside County Habitat Conservation Agency currently manages several core reserves that have been set aside for Stephens' Kangaroo Rat conservation and habitat preservation, including the Lake Mathews/Estelle Mountain Core Reserve (RCHCA n.d., RCHCA 1996). Under this alternative, 500-kV Line N1 would create an additional significant effect on biological resources and land use by creating a conflict with the policies and regulations of the Stephens' Kangaroo Rat Habitat Conservation Plan (HCP) for the Lake Mathews/Estelle Mountain Core Reserve.

Although 500-kV Line N1 would be 0.5 miles shorter than the proposed transmission lines, it would cross areas with steeper topographic features, requiring helicopter construction. The applicant has not identified tower locations for 500-kV Line N1. It is assumed that effects on drainages from tower or access road construction would be similar to those of the proposed Alberhill Project. Drainages identified using the National Hydrography Dataset are shown on Figure 5. Effects on air quality, hydrology, and the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would be similar to those of the proposed Alberhill Project.

[13] Entities are allowed to operate and maintain existing infrastructure within the core reserve (see Riverside County Habitat Conservation Agency Stephens' Kangaroo Rat HCP Section 5.c.1.t), but public agencies are the only entities allowed to build new infrastructure within the Lake Mathews/Estelle Mountain Core Reserve (HCP Section 5.c.1.s). SCE is not a public agency.

Path: \\prtbhp1\GIS\SanFrancisco\CPUC\Alberhill\Maps\MXDs\Alternatives_Screening\500_kV_alternatives.mxd



Riverside County Habitat Conservation Agency core reserves
Highway
Proposed Alberhill Substation
Proposed 500-kV Tower Location
Stream/drainage (National Hydrography Dataset 2010)
Proposed 500-kV Transmission Line
Proposed double-circuit of a single-circuit 115-kV subtransmission line without structure replacement (Proposed Valley-Ivyglen Project)
New single-circuit 115-kV subtransmission line
Existing 115-kV transmission line
Existing 500-kV Serrano-Valley Transmission Line

Proposed Alternative
ASP Alt Q - C1
ASP Alt R - C2
ASP Alt S - C3
ASP Alt T - C4
ASP Alt N - N1
ASP Alt O - N2
ASP Alt P - N3

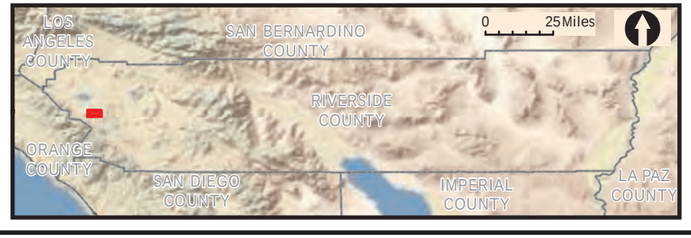


Figure 5
ASP Alternatives for 500-kV Transmission Line
Alberhill and Valley–Ivyglen Projects
Riverside County, California

ecology and environment, inc.
Global Environmental Specialists

Proposed and existing transmission and subtransmission line locations are approximate.

Conclusion

ELIMINATED. ASP Alternative N would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative O – 500-kV Line N2

This alternative was identified in the PEA. Under this alternative, 500-kV Line N2 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would require a greater number of dead-end structures, and some tower sites may not be accessible by road, requiring helicopter construction. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

Several towers for 500-kV Line N2 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible. Refer to the discussion for ASP Alternative N.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Refer to the discussion for ASP Alternative N.

Conclusion

ELIMINATED. ASP Alternative O would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative P – 500-kV Line N3

This alternative was identified in the PEA. Line N3 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would be straighter, minimizing the need for large-sized towers. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

Several towers for 500-kV Line N3 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible. Refer to the discussion for ASP Alternative N.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Although this alternative transmission line route would be straighter, it would be approximately 0.5 miles shorter than either of the proposed transmission lines, and the applicant stated that fewer large-sized towers may be installed along the route, it is not anticipated that the difference in effects on air quality and aesthetics would be substantially lessened. In addition, the applicant has not identified tower locations for 500-kV Line N3, and it is assumed that effects on drainages from tower or access road construction would be similar to those of the proposed Alberhill Project. Drainages identified using the National Hydrography Dataset are shown on Figure 5. Effects on air quality, aesthetics, hydrology, and the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would be similar to those of the proposed Alberhill Project.

Refer to the discussion under ASP Alternative N regarding additional significant effects on biological resources and land use by creating a conflict with the policies and regulations of the Stephens' Kangaroo Rat HCP for the Lake Mathews/Estelle Mountain Core Reserve.

Conclusion

ELIMINATED. ASP Alternative P would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative Q – 500-kV Line C1

This alternative was identified in the PEA. Under this alternative, 500-kV Line C1 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would also be straighter, minimizing the need for large-sized towers. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

One or more towers for 500-kV Line C1 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible. Refer to the discussion for ASP Alternative N.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Refer to the discussion under ASP Alternative P.

Conclusion

ELIMINATED. ASP Alternative Q would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative R – 500-kV Line C2

This alternative was identified in the PEA. Under this alternative, 500-kV Line C2 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would be straighter, minimizing the need for large-sized towers. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

One or more towers for 500-kV Line C1 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible. Refer to the discussion for ASP Alternative N.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Refer to the discussion under ASP Alternative P.

Conclusion

ELIMINATED. ASP Alternative R would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative S – 500-kV Line C3

This alternative was identified in the PEA. 500-kV Line C3 (Figure 5) would be approximately 0.5 miles shorter than either of the proposed transmission lines. This alternative transmission line route would be straighter, minimizing the need for large-sized towers. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

One or more towers for 500-kV Line C1 would be installed within the Lake Mathews/Estelle Mountain Core Reserve; therefore, this alternative would not be feasible. Refer to the discussion for ASP Alternative N.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Refer to the discussion under ASP Alternative P. In addition, refer to the discussion of ASP Alternative Y's environmental disadvantages where a potentially jurisdictional drainage was identified in 2011 by a United States Army Corps of Engineers (USACE) representative (Figure 6). The applicant has not identified tower locations for 500-kV Line C3, and it is assumed that effects on the drainage identified in 2011 by the USACE would be similar to the effects on potentially jurisdictional drainages by the proposed access road to 500-kV Tower SA-5.

Conclusion

ELIMINATED. ASP Alternative S would not be feasible and would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative T – 500-kV Line C4

This alternative was identified in the PEA. Line C4 (Figure 5) would be shorter than either of the proposed transmission lines, but the longest of the alternative 500-kV routes presented in this report. The substation and 115-kV subtransmission lines would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

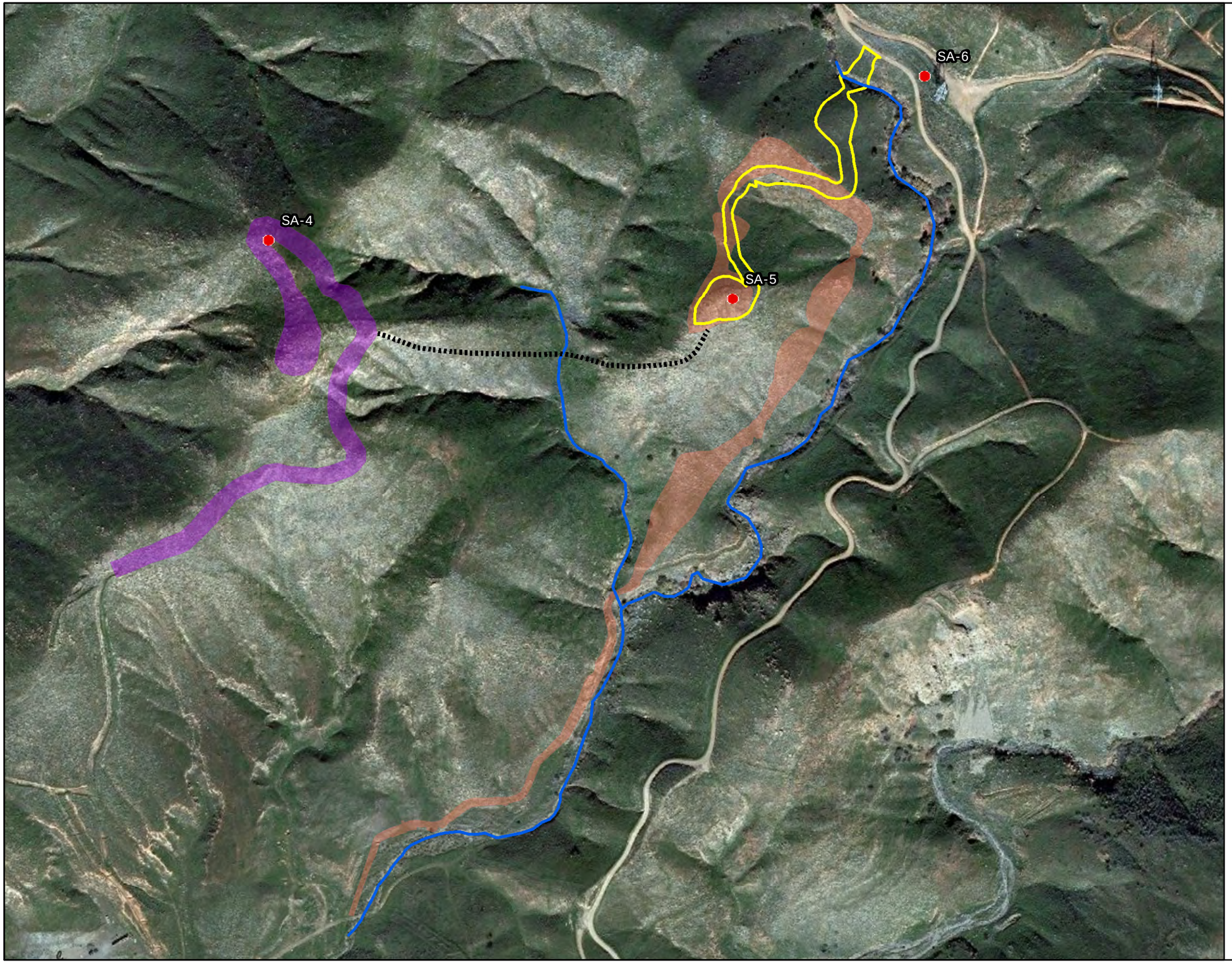
This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Line C4 would use tower site SA-5 (proposed). The access road to Tower SA-5 would cross a potentially jurisdictional drainage (Figure 6). Effects on hydrology and the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would be similar to those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative T would not avoid or reduce a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.



Legend

- Tower Location
- Waters of the US/State
- ASP Alternative Z
- ASP Alternative Z1
- Proposed Access to SA-4 and VA-4
- Proposed Access Road to SA-5

200 100 0 200 Feet

Data Source
SCE - Site Boundary and Transmission Data
ESRI - Aerial Imagery

2

Z:\Projects\2012_surveys\Alberhill\ArcGIS\Preliminary\tower4 proposed access.mxd

ASP Alternative U – One Double-Circuit Transmission Line (500-kV Line VA)

This alternative was identified by the CPUC. Under this alternative, one double-circuit 500-kV transmission line would be constructed from the proposed Alberhill Substation to the Serrano–Valley 500-kV Transmission Line instead of two single-circuit 500-kV transmission lines. The substation and 115-kV subtransmission lines would be constructed as proposed.

Under ASP Alternative U, only one double-circuit 500-kV transmission line would be installed for the proposed initial build out, and ultimately, fewer 500-kV transmission structures may be installed in proximity to the proposed Alberhill Substation. The Applicant included accommodations for terminating a future Serrano–Valley No. 2 500-kV transmission line at the proposed Alberhill Substation. If an application for a Serrano–Valley No. 2 500-kV transmission line is submitted and construction is approved, it would connect to the proposed Alberhill Substation along two additional 500-kV transmission lines.

The applicant stated that it had considered placing the two proposed 500-kV transmission lines on a single line of double-circuit towers, but dismissed this as an alternative because it would decrease reliability. Under this alternative, a single tower failure along 500-kV Transmission Line VA would terminate electrical service from the Serrano–Valley 500-kV Transmission Line to the proposed Alberhill Substation. The applicant stated that reliability would be increased by serving the proposed Alberhill Substation with two separate 500-kV routes, as proposed, because if either transmission line failed to provide service, the other line would still be operational.

Reliability would be further decreased with two load-serving 560-MVA transformers in operation at the proposed Alberhill Substation. With only one load-serving 560 MVA transformer at the proposed Alberhill Substation, and assuming that 500-kV Line SA was not constructed, service from the proposed Alberhill Substation could be covered by the Valley South 115-kV System if 500-kV Line VA went out of service. With two load-serving 560-MVA transformers, however, 115-kV service from the proposed Alberhill Substation could not be covered by the Valley South 115-kV System because there is only one spare 560-MVA transformer available at Valley Substation.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

The 500-kV transmission components of the proposed Alberhill Substation would be subject to NERC and WECC planning standards. These standards specify that transmission lines must meet N-1 reliability criteria. An N-1 event occurs when the loss of a single transmission element (e.g., a transmission line or a transformer) results in the loss of electrical service from the associated transmission system. In this case, under ASP Alternative U, if 500-kV Line VA went out of service, and two load-serving 560-MVA transformers were serving load at the proposed Alberhill Substation, the Valley South 115-kV system could not cover for the Alberhill 115-kV System, and the Alberhill 115-kV System service area would lose electrical power. There is only one spare 560-MVA transformer available at Valley Substation. Therefore, this alternative would not be feasible.

Environmental Advantages

Only one 500-kV transmission line would be constructed, resulting in reduced effects on air quality from fugitive dust and vehicle and equipment emissions. In addition, unlike the route proposed for 500-kV Line SA, the proposed route for 500-kV Line VA would not affect a potentially jurisdictional drainage. Effects on air quality, biological resources, and hydrology would be reduced under this alternative.

Environmental Disadvantages

Although one fewer 500-kV transmission lines would be constructed under this alternative, the towers for one double-circuit 500-kV transmission line would be taller than those for two single-circuit 500-kV transmission lines. Therefore, effects on aesthetics may not be reduced. Additionally, under ASP Alternative U, the 500-kV transmission line would still be constructed in a Very High Fire Hazard Severity Zone. Therefore, construction and operation under this alternative would result in environmental effects similar to those of the proposed Alberhill Project, with the exception of the environmental advantages discussed above.

Conclusion

ELIMINATED. ASP Alternative U would meet the project objectives and reduce potentially significant effects of the proposed Alberhill Project but would not be feasible because it would not meet reliability criteria established by NERC and WECC. Therefore, this alternative was eliminated from further consideration.

ASP Alternative V – 500-kV Monopoles

Under this alternative, which was identified by the CPUC, monopoles (e.g., tubular steel poles [TSPs]) instead of lattice steel towers would be installed at the proposed 500-kV tower locations nearest to I-15 or at each 500-kV tower location along the proposed 500-kV transmission line routes (Figure 5).

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

Dead-end structures, which are higher-strength structures used at powerline termination points or where powerlines make sharp changes in direction, are required at 500-kV tower locations SA1, VA1, SA3, VA3, SA5, VA5, SA6, and VA6 (Figure 5). It would not be feasible to install monopole structures at the tower locations nearest to I-15 (tower locations SA1 and VA1) or at each tower location along the proposed 500-kV transmission line routes. Therefore, this alternative would not be feasible to construct.

Environmental Advantages

Effects on I-15, an eligible State Scenic Highway (Caltrans 2011), may be reduced with the installation of monopoles instead of lattice steel towers at the tower locations nearest to I-15. Monopoles would be less visually obtrusive and more consistent in design, form, line, and texture with the setting at the proposed Alberhill Substation site and the existing wood utility poles viewable from I-15.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Alberhill Project, with the exception of the environmental advantages discussed above.

Conclusion

ELIMINATED. ASP Alternative V would meet the project objectives and reduce effects on aesthetics, but it would not be feasible. Therefore, this alternative was eliminated from further consideration.

ASP Alternative W – Byers Road 115-kV Routing (Holland Road)

This alternative was identified in the PEA. Sections of 115-kV Segments ASP5 and ASP6 would be constructed along Waldon Road and Byers Road (Figure 2). Under this alternative, 115-kV Segment ASP5 would be installed north starting from the intersection of Bundy Canyon Road and Waldon Road and then east for approximately 0.5 miles along Waldon Road to the intersection with Byers Road. The 115-kV subtransmission line would then be installed north along Byers Road for approximately 2 miles to the intersection with Holland Road. From there, the line would be installed east along Holland Road for approximately 0.5 miles to Murrieta Road and then north along the remainder of 115-kV Segment ASP6 as proposed along Murrieta Road.

Existing distribution line structures would be replaced with 115-kV structures, and the distribution line would be underbuilt on the 115-kV structures. The substation, 500-kV transmission lines, and other 115-kV subtransmission segments would be constructed as proposed. ASP Alternative W would be approximately 3 miles long. Parcels along the route are presently undeveloped or used for rural residential purposes (Figure 7).

Figure 7 Viewpoints along Byers Road (Proposed Alberhill Project)

a. Northern view of Byers Road towards the Byers Road and Corson Avenue intersection.

b. Southwestern view of Byers Road at Byers Road and Corson Avenue intersection.

c. Southeastern view of Byers Road toward the Byers Road and Craig Avenue intersection.

d. Southern view of Byers Road toward the Byers Road and Rolling Hills intersection.

Source: Google 2014

Byers Road Route Variation Dismissed from Further Consideration

The City of Menifee proposed a route variation similar to ASP Alternative W except that 115-kV Segment ASP5 would connect to Murrieta Road from Byers Road along Craig Avenue instead of Holland Road. Craig Avenue is located about 0.5 miles south of Holland Road. Similar to Holland Road, Craig Avenue has existing distribution line structures that would be replaced with 115-kV structures, and the distribution line would be underbuilt on the 115-kV

structures and parcels along the route that are presently undeveloped or used for rural residential purposes (Figure 7).

The CPUC dismissed this route variation because it would not result in any new or additional environmental advantage compared to ASP Alternative W and would have the same environmental disadvantages as ASP Alternative W. Therefore, it was not considered further in this report.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Visual effects from ASP Alternative W would be similar to or greater than those along proposed 115-kV Segments ASP5 and ASP6. Figure 7 shows the existing setting along Byers Road in Menifee, California. The views are typical of the rural residential communities located throughout the Perris Valley region. The visual character along Byers Road is primarily rural residential. Residences, residential facilities, and distribution lines are visible in foreground and middleground views, and low-lying hills are visible in background views (Figure 7).

When analyzing the visual effects of a proposed Alberhill Project, the intensity of change in the *vividness*, *intactness*, and *unity* are reviewed. Vividness, unity, and intactness are terms used to describe a landscapes visual quality. Vividness is defined as the memory of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. Intactness is defined as the integrity of the visual order in the natural and human-built landscape, and the extent to which the landscape is free from encroaching elements. Unity

is defined as the degree to which the aesthetics of the landscape join to form a coherent, harmonious visual pattern. The term also refers to the degree of inter-compatibility between landscape elements as a whole (FHWA 1988).

The intactness of views along Byers Road is moderate, consisting generally of a mix of open rural lands and scattered rural residences. Wood power poles, fences, scattered mature trees, native scrub vegetation, open fields, and scattered rural residences are typical along Byers Road. There is a moderate degree of unity in the views: the forms, colors, lines, and textures of structures, including residences, fences, roads, and wood power poles, are representative of rural residential areas in the region and generally mimic and complement the natural elements and features in the surrounding landscape. The vividness of views in the foreground and middleground are low, as views of open rural land and rural residences are typical throughout the area, and distinctive visual elements are generally absent. The vividness of background views of low-lying hills east of Byers Road is moderate to high (Figure 7d). Viewer groups along Byers Road would primarily be local residents—a viewer group with high visual sensitivity.

The proposed 115-kV subtransmission line poles would be larger (65 to 91 feet tall) than the existing wood poles along Byers Road and Holland Road. The steel material, increased height, and underbuilt distribution elements of the poles would cause them to be substantially more noticeable and contrast strongly in form, line, color, and texture with existing elements in the surrounding landscape. Also, the new structures would be highly visible in foreground and middleground views from residences and by viewers traveling on Byers Road and Holland Road. Installation of the poles would reduce the intactness and unity of the view from moderate to low by introducing new elements with forms, lines, textures, and colors substantially different from those of existing elements in the view. This reduction in intactness and unity would result in a substantial reduction in visual quality and character in immediate foreground views for viewers with high visual sensitivity. Therefore, the introduction of a new 115-kV subtransmission line along Byers Road and Holland Road would result in effects on aesthetics that would be similar to or greater than those of the proposed Alberhill Project.

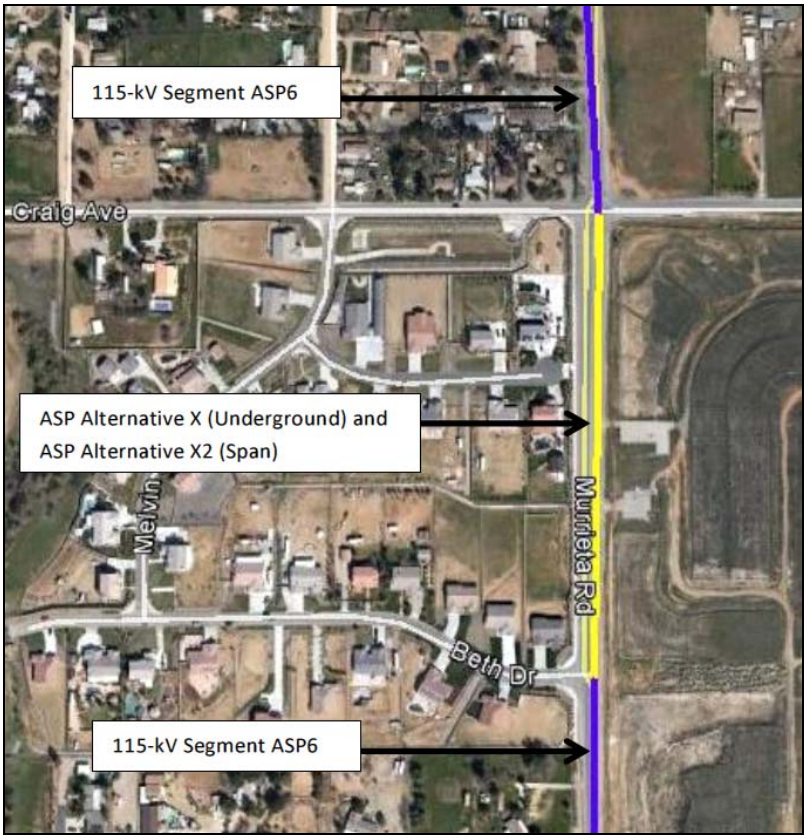
Conclusion

ELIMINATED. ASP Alternative W would be feasible and meet the project objectives but would not avoid or substantially lessen a significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative X – Underground 115-kV Segment ASP6 between Craig Avenue and Beth Drive

This alternative was identified by the City of Menifee. Under this alternative, a section of 115-kV Segment ASP6 between Craig Avenue and Beth Drive along Murrieta Road (approximately 0.25 miles) would be installed underground in new conduit (Figure 8). The section of 115-kV Segment ASP6 would not be installed in the existing underground conduit located between Craig Avenue and Beth Drive along Murrieta Road because the existing conduit is designed to contain distribution lines that operate at a substantially lower voltage than the proposed 115-kV subtransmission lines (SCE 2011a).

Figure 8 ASP Alternative X and ASP Alternative X2



Sources: Google 2014, SCE 2014

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

Undergrounding 115-kV Segment ASP6 between Craig Avenue and Beth Drive along Murrieta Road (approximately 0.25 miles) may avoid a potentially significant effect on views from the Calder Ranch residential development. Views from Calder Ranch are currently unobstructed, as there are no utility lines along Murrieta Road between Craig Avenue and Beth Drive. In a letter to the CPUC, the City of Menifee states that the electrical lines along Murrieta Road between Craig Avenue and Beth Drive were converted from overhead to underground utilities in September 2009, and the effort was financed, in part, by the Calder Ranch developer, Capital Pacific Homes (Allison 2012; SCE 2011a).

Environmental Disadvantages

Trenching and ground disturbing activities required to install the section of 115-kV Segment ASP6 between Craig Avenue and Beth Drive along Murrieta Road underground would result in greater effects on air quality than the proposed Alberhill Project. Effects on the other resource areas discussed in this report would be similar to those of the proposed project, with the exception of the environmental advantages discussed above.

Conclusion

RETAINED. ASP Alternative X would be feasible, meet the project objectives, and may reduce potentially significant effects on aesthetics. Therefore, this alternative was retained for further consideration in the EIR.

ASP Alternative X1 – Underground 115-kV Segment ASP6

This alternative was identified by the public during scoping. Under this alternative, 115-kV Segment ASP6 (approximately 3 miles long) would be installed underground in new conduit.

The substation, 500-kV transmission lines, and other 115-kV segments would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

ASP Alternative X1 would not substantially lessen a potentially significant effect of the proposed Alberhill Project. Views along 115-kV Segment ASP6 are dominated by commercial buildings; utility lines; residential communities; rural residential communities; and flat, undeveloped, unvegetated land. Views along 115-kV Segment ASP6 show mixed types of urban development that are common throughout the Perris Valley region. In general, intactness and unity of views are low to moderate, and vividness of views is low.[14] Background views of low-lying hills are typically obstructed by urban development in foreground and middleground views.

Viewer groups along 115-kV Segment ASP6 would include local residents as well as regional residents and those from more distant areas traveling between I-15, I-215, and the cities of Lake Elsinore, Menifee, Wildomar, Perris, Temecula, and Murrieta. Local residents would have a high visual sensitivity, while regional residents and travelers would have low to moderate visual sensitivity. The sensitivity of viewer groups is considered, among other factors, in terms of their physical location in relation to components of a proposed Alberhill Project, the duration of views, and viewer group values.

Effects of 115-kV Segment ASP6 on aesthetics with respect to the Calder Ranch residential development along Murrieta Road between Beth Drive and Craig Avenue (approximately 0.25 miles) are addressed by ASP Alternative X, which will be retained for further consideration in the EIR. ASP Alternative X1, in contrast, would not substantially lessen a potentially significant

[14] Refer to the analysis for ASP Alternative W for definitions of the terms *vividness*, *intactness*, and *unity*.

effect on aesthetics when considering the entire, approximately 3-mile 115-kV Segment ASP6 route.

Environmental Disadvantages

Trenching and ground disturbing activities required to install 115-kV Segment ASP6 underground would result in greater effects on air quality than installing 115-kV Segment ASP6 overhead. The existing views along 115-kV Segment ASP6 are dominated by commercial establishments; residences; gated or walled residential communities; transportation infrastructure; and utility infrastructure, including distribution powerlines, telecommunications lines, and streetlights. Effects on the other resource areas discussed in this report would be similar to those of the proposed Alberhill Project, with the exception of the environmental advantage discussed above.

Conclusion

ELIMINATED. ASP Alternative X1 would be feasible and meet the project objectives but would not substantially lessen a potentially significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration. Note that effects on aesthetics with respect to the Calder Ranch residential development are addressed by ASP Alternative X, which will be retained for further consideration in the EIR.

ASP Alternative X2 – Span 115-kV Segment ASP6 Between Craig Avenue and Beth Drive

This alternative was identified by the CPUC. Under this alternative, conductor that would be installed along 115-kV Segment ASP6 would span the area between Beth Drive and Craig Avenue along Murrieta Road (approximately 0.25 miles). No new utility structures would be installed between Beth Drive and Craig Avenue along Murrieta Road (Figure 8). The subtransmission structures required to span conductor between Beth Drive and Craig Avenue along Murrieta Road would be substantially larger (up to 130 feet tall) than the structures proposed for 115-kV Segment ASP6 (up to 91 feet tall). The substation, 500-kV transmission lines, the remaining portion of 115-kV Segment ASP6, and other 115-kV subtransmission line segments would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project. Refer to the following discussion of environmental disadvantages.

Environmental Disadvantages

The height of the 115-kV structures required to span the area between Beth Drive and Craig Avenue along Murrieta Road would be substantially greater than the height of the proposed 115-kV structures and existing, wood distribution structures. The larger structures would contrast strongly in form, line, color, and texture with existing landscape elements viewable from the Calder Ranch residential development and other areas along Murrieta Road. Effects on the other resource areas discussed in this report would be similar to those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative X2 would be feasible and meet the project objectives but would not avoid or substantially lessen a significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative Y – Collier Avenue 115-kV Subtransmission Line Route

This alternative was identified by the public during scoping. Under this alternative, 115-kV Segment ASP2 between Terra Cotta Road/Pierce Street and Riverside Drive would be constructed along Collier Avenue (Figure 2). The substation, 500-kV transmission lines, and other 115-kV subtransmission line segments would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

Effects on air quality would likely increase under this alternative because structures that would support two 115-kV circuits would need to be installed, resulting in additional fugitive dust and vehicle and equipment emissions. No potentially significant visual effect is anticipated along 115-kV Segment ASP2; therefore, a potentially significant visual effect would not be avoided by this alternative. Effects on the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would be similar to those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative Y would be feasible and meet the project objectives but would not avoid or substantially lessen a significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative Z – Access Road from 500-kV Tower SA-4 to Tower SA-5

This alternative was identified by SCE. Under this alternative, 500-kV transmission tower SA-5 would be accessed using a route that would extend the proposed access road to 500-kV transmission tower SA-4 (Figure 6). The substation, 500-kV transmission lines, and other 115-kV subtransmission line segments would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

The applicant stated that during a 2011 site visit by a USACE representative, Jim Mace, it was determined that a potentially jurisdictional drainage in addition to those identified using the National Hydrography Dataset (Figure 5) is located between the proposed sites for 500-kV Towers SA-4 and SA-5 (SCE 2011a). ASP Alternative Z would require crossing this potentially jurisdictional drainage and would require a culvert as proposed for the access road to 500-kV Tower SA-5 or a similar structure. Additionally, ASP Alternative Z is steeper than the proposed access road to 500-kV Tower SA-5, and the applicant stated that it would require more land disturbance to construct. The additional land disturbance may increase effects on air quality. Effects on air quality and the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would either be similar to or greater than those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative Z would be feasible and meet the project objectives but would not avoid or substantially lessen a significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative Z1 – Southern Access Road to 500-kV Tower SA-5

This alternative was identified by SCE. Under this alternative, 500-kV Tower SA-5 would be accessed using a route that would originate from Lake Street, approximately 0.5 miles south of

the proposed access route to Tower SA-5. The route would be approximately 0.75 miles long and parallel the west side of a potentially jurisdictional drainage (Figure 6). The substation, 500-kV transmission lines, and other 115-kV subtransmission line segments would be constructed as proposed.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Alberhill Project objectives (Section 1.5.1).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would not avoid or substantially lessen a potentially significant effect of the proposed Alberhill Project.

Environmental Disadvantages

The route would cross a potentially jurisdictional drainage identified during a 2011 site visit by a USACE representative, Jim Mace (SCE 2011a; Figure 6). ASP Alternative Z1 would require crossing this potentially jurisdictional drainage and would require a culvert as proposed for the access road to 500-kV Tower SA-5 or a similar structure. An crossing of the potentially jurisdictional drainage is present along the alternative route, but the applicant stated that it would need to be replaced if the route is selected for access road construction. Multiple smaller drainages are present along the route that may require additional land disturbance for the installation of culverts. The additional land disturbance may increase effects on air quality. Effects on hydrology, air quality, and the other resource areas discussed in this report (Table 3) from construction and operation under this alternative would either be similar to or greater than those of the proposed Alberhill Project.

Conclusion

ELIMINATED. ASP Alternative Z1 would be feasible and meet the project objectives but would not avoid or substantially lessen a significant effect of the proposed Alberhill Project. Therefore, this alternative was eliminated from further consideration.

ASP Alternative AA – Demand Management and Energy Conservation Programs

Under ASP Alternative AA, demand management and energy conservation programs would be implemented instead of the proposed Alberhill Project. Demand management and energy conservation programs refer to *demand response programs* designed to shift energy use to off-peak times and/or reduce overall energy use; the installation of *high-efficiency appliances* (e.g., heating and cooling systems and energy-efficient lighting); the installation *insulation and weatherization*; and *customer behavior changes* (e.g., customers that turn off lights more frequently because of increased customer awareness of their electrical usage). No components of the proposed Alberhill Project would be constructed under this alternative. This alternative would meet CPUC Code Section 1002.3 requirements (Section 1.1.2, "Alternatives to Transmission Facilities").

Consideration of CEQA Criteria

Project Objectives

This alternative would not meet ~~two of~~ the ~~three~~ Alberhill Project objectives (Section 1.5.1). ~~It may be capable of relieving projected electrical demand but would not include the construction of a new substation or maintain system ties between a new 115-kV system and the Valley South 115-kV System.~~ The ability of ASP Alternative AA to relieve projected electrical demand is further discussed below under, "Feasibility."

Feasibility

The applicant has deployed *SmartConnect* meters (smart meters) to customers with demands less than 200 kilowatts within the Wildomar and Menifee service districts of the Valley South ENA (Figure 2) that allow customers to participate in the applicant's demand management and energy conservation programs, including the *Save Power Day Incentive*; *Summer Advantage Incentive*; *Time-of-Use Rates*; the programmable communicating thermostat (PCT)-enabled *PCT Summer Discount Plan*; *Web Presentment Tools* (e.g., bill-to-date, projected next bill, and usage reports); *Budget Assistant* (*Projected Next Bill* feature); and *In-Home Graphical Display* services. For customers with demands greater than 200 kilowatts, the applicant offers *Automated Demand Response* and *Technical Assistance and Technology Incentive* programs.

Approximately 500,000 customers within the Wildomar and Menifee service areas of the Valley South ENA are enrolled in one or more of the programs listed above. The applicant reported on the aggregate effects of these programs within several service areas in a 2012 annual report (including Wildomar), but the report did not include applicant demand management and conservation effects data that are specific to the Valley South ENA. Budget Assistant program participants demonstrated an overall 1.5 percent usage reduction due to energy conservation. Customers using the applicant's Web Presentment Tools did not demonstrate statistically significant energy conservation (SCE 2012). Results from the applicant's other demand management and energy conservation programs and services are expected to be included in the applicant's 2013 or subsequent annual reports. The applicant stated, however, that they do not have a definitive way of measuring an exact or approximate amount of coincident peak demand that is reduced through the implementation demand management and energy efficiency programs.

To the extent that demand management and energy efficiency programs have been implemented by customers, however, the effects are reflected in the measured peak demand recorded annually for Valley Substation and each of the substations served by the Valley South 115-kV System. The applicant's load projections for the Valley South 115-kV System (Table 1) are based on recorded peak demands at these substations. In addition, anticipated increases in demand management program participation and energy efficiency installations within the ENA over time are accounted for in the applicant's load projections for the Valley South 115-kV System.

To achieve the reductions in electrical demand required to avoid forecast exceedance of the operating limit of the two Valley South 500/115-kV transformers in the event of a 1-in-5 year heat storm as discussed in Section 1.2.2, it is assumed that demand management and energy efficiency program participation alone would be insufficient. Customers must also habitually carry out demand management and energy conservation behaviors to reach the required reductions. Participation in the programs provides the opportunity for such behaviors but does not guarantee them. Therefore, because a reliable outcome from the implementation of this alternative would be subject to the actions of numerous other parties that the applicant has no reasonable ability to control, this alternative is not considered a feasible alternative to the proposed transmission facilities.

Environmental Advantages

No components of the proposed Alberhill Project would be constructed. It is assumed that all potentially significant effects from construction and operation of the proposed Alberhill Project would be avoided or reduced.

Environmental Disadvantages

No environmental disadvantages were identified.

Conclusion

ELIMINATED. ASP Alternative AA would not be feasible or meet ~~most of~~ the project objectives; therefore, it was eliminated from further consideration.

ASP Alternative BB – Distributed, Local, and Renewable Generation

Under ASP Alternative BB, electricity production would be provided that is onsite or close to the load center that could be interconnected at distribution, subtransmission, or transmission system voltages. Electricity might be generated by solar panels; wind turbines; natural gas and other fuels used by conventional generation facilities; fuel cells; or other technologies. Distributed generation facilities (smaller than 50 megawatts; CEC 2000) and smaller-scale local generation (e.g., residential rooftop solar photovoltaic generation) would be employed. Power generation and/or storage facilities would not require new transmission lines or substations to provide electricity pursuant to CPUC Code Section 1002.3 requirements (Section 1.1.2, "Alternatives to Transmission Facilities"). No components of the proposed Alberhill Project would be constructed under this alternative.

Consideration of CEQA Criteria

Project Objectives

This alternative would not meet ~~two of~~ the ~~three~~ Alberhill Project objectives (Section 1.5.1). ~~It may be capable of relieving projected electrical demand but would not include the construction of a new substation or maintain system ties between a new 115-kV system and the Valley South 115-kV System.~~ The ability of ASP Alternative BB to relieve projected electrical demand is further discussed below under "Feasibility."

Feasibility

This alternative would require the deployment of many small-scale and medium-scale generation systems within the load centers of the Valley South 115-kV System ENA. The applicant's customers who participate in the *Net Energy Metering* (NEM) program are an example. California's electric utility customers receive incentives (e.g., financial credits) when they install and operate solar electric, wind turbine, biogas, or fuel cell systems (CPUC 2014). The applicant records and projects electrical generation capacity from its NEM customers (Table 5).

Table 5 Recorded and Forecast Net Energy Metering Generation for the Valley South Electrical Needs Area in Megawatts

	2005–2012 [1]	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-residential	6.30	0.99	1.14	1.31	1.50	1.73	1.99	2.29	2.63	3.02
Residential	6.20	0.94	1.09	1.25	1.44	1.65	1.90	2.18	2.51	2.89
Total Capacity	**12.50**	**14.82**	**17.05**	**19.60**	**22.54**	**25.92**	**29.81**	**34.28**	**39.43**	**45.34**

Source: SCE 2011a
Note:
[1] Installed Net Energy Metering capacity in megawatts within the Valley South 115-kV System Electrical Needs Area as of August 29, 2012.

The data presented in Table 5 were incorporated into the applicant's annual planning process and are reflected in the load projections for the Valley South 115-kV System (Table 1). The data shown in Table 5 and accounted for in Table 1 include generation from residential self-generation projects, non-residential self-generation projects, and all other renewable generation projects within the Valley South 115-kV System ENA. According to the applicant, there are no other renewable energy projects to account for in load projections for the ENA.

Given that the data presented in Table 5 have already been accounted for in load projections, and that they represent a small percentage of peak electrical demand projected for the Valley South 115-kV System, it is not anticipated that the addition of 22.54 megawatts of electricity from NEM customers in 2016 or 25.92 megawatts in 2017 would be sufficient for ASP Alternative BB to relieve projected electrical demand (Table 1). Additionally, the applicant estimates that roughly 12 percent of installed solar-generating capacity may be available during peak electrical demand periods because of weather and the timing of optimal sun exposure as compared to peak

electrical demand periods. Peak demand typically occurs late in the afternoon or early evening, while optimal sun exposure for solar generation typically occurs between 11:00 am and 1:00 pm.

The applicant reported that less than 0.05 megawatts of wind generation capacity is installed within the ENA, and no geothermal power plants are located within the ENA. No new distributed generation facilities powered by natural gas and other fuels used by conventional generation facilities have been constructed within the ENA. Even if a new electrical generation facility was constructed, the applicant requires three years of data from operation during peak electrical load periods to determine whether the new facility is reliable (SCE 2011a).

In summary, the amount of local and distributed generation within the ENA is not projected to be large enough to offset demand on the Valley South 115-kV System that would exceed its operating limit in the event of a 1-in-5 year heat storm, as discussed in Section 1.2. Even if distributed generation facilities were built in time to achieve the required load reductions for the Valley South 115-kV System (Table 1), the applicant stated that substation capacity would be a limiting factor. Substation expansion may be required to make additional electricity from distributed generation projects within the ENA useful. Additionally, the potential for and timing of new local and distributed generation projects within the ENA is uncertain. The development of such projects would require actions by numerous parties other than the applicant, and the applicant does not have control over those parties actions. Therefore, this alternative is not considered a feasible alternative to the proposed transmission facilities.

Environmental Advantages

No components of the proposed Alberhill Project would be constructed. It is uncertain, however, what effects would occur from construction and operation of the conventional, renewable, distributed, and/or local generation facilities that would be required for this alternative. No assumptions about environmental advantages were made for this analysis.

Environmental Disadvantages

No environmental disadvantages were identified for this alternative.

Conclusion

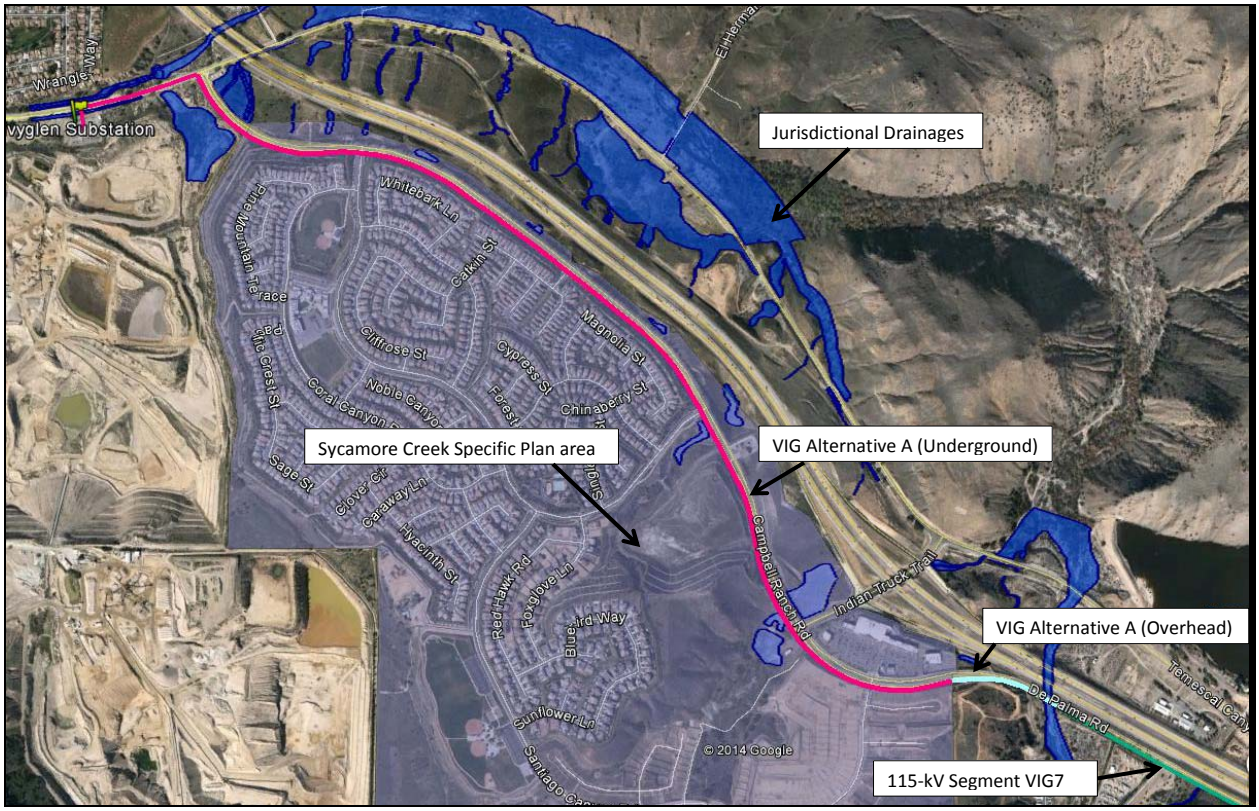
ELIMINATED. ASP Alternative BB would not be feasible or meet the project objectives; therefore, it was eliminated from further consideration.

3.2 Alternatives to the Proposed Valley–Ivyglen Project

VIG Alternative A – Campbell Ranch Road (115-kV Segment VIG8)

This alternative was identified by the CPUC based on its review of the PFM (SCE 2014) and an alternative segment considered in the original Valley–Ivyglen Draft EIR (Segment W-5; CPUC 2009). Under this alternative, 115-kV Segment VIG8 would be installed in approximately 10,500 feet of new underground conduit along the west side of De Palma Road and Campbell Ranch Road (Figure 9).

Figure 9 VIG Alternative A



Sources: Google 2014, SCE 2014, USFWS 2014

This alternative would begin approximately 1,800 feet east of the intersection of De Palma Road and Santiago Canyon Road at proposed Structure VIG566. Under this alternative, proposed

Structure VIG566 would be a lightweight steel (LWS) pole rather than a TSP because an I-15 crossing at this location would not be required. The proposed overhead line would continue north along De Palma Road for approximately 1,000 feet on LWS poles, then descend to an underground position. The alternative would proceed north in a new underground conduit along De Palma Road and Campbell Ranch Road to Temescal Canyon Road. The installation would generally follow the proposed fiber optic line route for 115-kV Segment VIG8, but would be on the west side of Campbell Ranch Road and De Palma Road instead of the east side. VIG Alternative A would be installed as proposed from the intersection of Campbell Ranch Road and Temescal Canyon Road west into Ivyglen Substation. This alternative would require approximately 10,500 feet of duct bank, 10 vaults, two TSP risers, and the replacement of approximately seven existing wood poles with seven TSPs.

A similar alternative was eliminated from full consideration in the comparison of alternatives chapter of the original Valley–Ivyglen Draft EIR (CPUC 2009) because the new overhead 115-kV subtransmission line structures would exceed 50 feet in height and thus could create a land use conflict with the Sycamore Creek Specific Plan No. 256 zoning ordinance, as described further below. VIG Alternative A would only include aboveground structures along De Palma Road, just south of the Sycamore Creek Specific Plan area (Figure 9) and would descend into an underground conduit prior to entering the Sycamore Creek Specific Plan area, therefore not resulting in a land use conflict.

Sycamore Creek Specific Plan (Riverside County Specific Plan No. 256)

Sycamore Creek is a 717-acre master-planned community in unincorporated Riverside County located adjacent to I-15 about 4 miles north of the city of Lake Elsinore and less than 0.25 miles southeast of Ivyglen Substation. The Sycamore Creek Specific Plan approves the construction of more than 1,700 homes (Foremost Communities 2014). The Riverside County Zoning Ordinance was amended to include the Sycamore Creek Specific Plan No. 256 zoning ordinance (Ordinance No. 348.4111) in 2003. The Sycamore Creek Specific Plan No. 256 zoning ordinance does not allow for the construction of structures more than 50 feet high without approval through a conditional use permit, zoning change, and/or zoning variance. The installation of underground electrical lines is not restricted by the zoning ordinance.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative A would not require the proposed overhead crossing of I-15 near Lee Lake or the 10 temporary shoofly line poles along 115-kV Segment VIG7. In addition, it would require approximately 11 fewer TSPs, four fewer wood poles, and two fewer LWS poles than the proposed Valley–Ivyglen Project. As a result, this alternative would substantially reduce a potentially significant effect on aesthetics along I-15, an eligible State Scenic Highway (Caltrans 2011). Additionally, helicopter use would be reduced under this alternative because there would be fewer aboveground structures to construct, which would reduce effects on air traffic.

Based on a desktop analysis, this alternative would avoid or substantially reduce potentially significant effects on biological resources and hydrology, including potentially jurisdictional waterways. This alternative would also reduce the length of proposed subtransmission line that would be located within a Very High Fire Hazard Severity Zone.

Environmental Disadvantages

Although VIG Alternative A would be approximately 1,000 feet shorter than the proposed Valley–Ivyglen Project, this alternative would require approximately 1,000 feet of additional trenching because the subtransmission line section to be installed underground would be longer. Therefore, it is anticipated that effects on air quality would be similar to those of the proposed Valley–Ivyglen Project. Noise levels generated during construction of VIG Alternative A may have a greater effect on sensitive receptors compared to the proposed Valley–Ivyglen Project because of this alternative's proximity to residences. These issues will be evaluated further in the EIR.

This alternative would not conflict with the Sycamore Creek Specific Plan structure height restrictions because the subtransmission line would be installed in an underground conduit. As a

result, this alternative would not have greater or reduced effects on Sycamore Creek Specific Plan No. 256 zoning ordinance in comparison to the proposed 115-kV Segment VIG8 route.

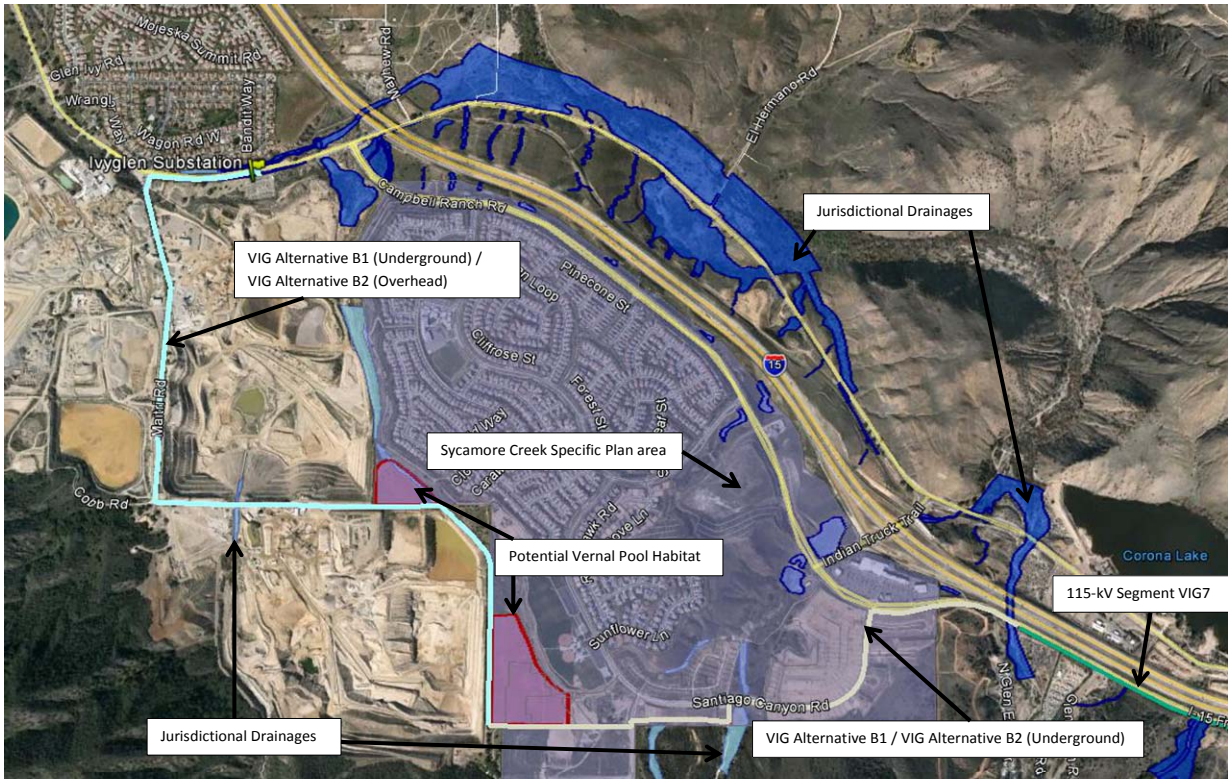
Conclusion

RETAINED. VIG Alternative A would be feasible, meet the project objectives, and could reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative B1 – Underground along Santiago Canyon Road (115-kV Segment VIG8)

This alternative was identified by the CPUC. Under this alternative, 115-kV Segment VIG8 would be installed in approximately 3.5 miles of new underground conduit and approximately 12 vaults along De Palma Road, Santiago Canyon Road, and Maitri Road, as well as an unnamed dirt road (Figure 10). A TSP riser would be installed at the beginning and end of the underground conduit installation.

Figure 10 VIG Alternative B1 and VIG Alternative B2



Sources: Google 2014; SCE 2014; USFWS 2014

This alternative would begin approximately 1,800 feet east of the intersection of De Palma Road and Santiago Canyon Road, where the proposed overhead line would descend to an underground position and proceed north in a new underground conduit along De Palma Road to Santiago Canyon Road. The alignment would continue southwest along Santiago Canyon Road approximately 2,500 feet to an existing (unnamed) road. The alignment would then turn south along unnamed road for approximately 275 feet and then continue west for approximately 3,000 feet and then north for approximately 2,000 feet. The alignment would then angle to the northwest for approximately 800 feet before turning west on Maitri Road. The alignment would then follow Maitri Road to Temescal Canyon Road. From there it would continue east on Temescal Canyon Road to Ivyglen Substation.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative B1 would not require the proposed overhead crossing of I-15 near Lee Lake or the 10 temporary shoofly line poles along 115-kV Segment VIG7 and would require approximately eight fewer TSPs, four fewer wood poles, and two fewer LWS poles. As a result, this alternative would substantially reduce a potentially significant effect on aesthetics along I-15, an eligible State Scenic Highway (Caltrans 2011). Additionally, helicopter use would be reduced under this alternative because there would be fewer aboveground structures to construct, which would reduce a potentially significant effect on air traffic. This alternative would also reduce the length of proposed subtransmission line that would be located within a Very High Fire Hazard Severity Zone.

Environmental Disadvantages

VIG Alternative B1 would be approximately 1.1 miles longer than the proposed Valley–Ivyglen Project, which would result in more ground disturbance and greater effects on air quality. In addition, approximately four additional underground vaults would be required.

Based on a desktop analysis, this alternative would cross and potentially impact up to four jurisdictional features and two suitable fairy shrimp habitat areas (Figure 10). Impacts on potentially jurisdictional waterways are assumed to be similar to those of the proposed Valley–Ivyglen Project. Noise levels generated during construction of VIG Alternative B1 may have a greater effect on sensitive receptors compared to the proposed Valley–Ivyglen Project because of this alternative's proximity to residences. Additionally, this alternative could affect mining activities west of the Sycamore Creek Specific Plan area.

This alternative would not conflict with the Sycamore Creek Specific Plan structure height restrictions because the subtransmission line would be installed in an underground conduit. As a result, this alternative would not have greater or reduced effects on Sycamore Creek Specific Plan No. 256 zoning ordinance in comparison to the proposed 115-kV Segment VIG8 route.

Conclusion

RETAINED. VIG Alternative B1 would be feasible, meet the project objectives, and could reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative B2 – Santiago Canyon Road Underground and Overhead (115-kV Segment VIG8)

This alternative was identified by the CPUC. Under this alternative, 115-kV Segment VIG8 would be installed on new poles and in new underground conduit for approximately 3.5 miles along De Palma Road, Santiago Canyon Road, and Maitri Road, as well as an unnamed dirt road (Figure 10). This alternative would require approximately 1.5 miles of new underground duct bank, five vaults, two TSP risers, 60 to 65 LWS poles ranging in height between 75 and 95 feet, and 8 to 10 TSPs ranging in height between 70 and 85 feet.

This alternative would begin approximately 1,800 feet east of the intersection of De Palma Road and Santiago Canyon Road, where the proposed overhead line would descend to an underground position and proceed north in new underground conduit along De Palma Road to Santiago Canyon Road. The alignment would continue southwest along Santiago Canyon Road approximately 2,500 feet to an existing unnamed road. The alignment would then turn south along the unnamed road for approximately 275 feet and rise to an overhead position. The

alternative would then proceed west. The alignment would continue west for approximately 3,000 feet and then turn north for approximately 2,000 feet. The alignment would then angle northwest for approximately 800 feet before turning west on Maitri Road. The alignment would then follow Maitri Road to Temescal Canyon Road. From there, it would continue east on Temescal Canyon Road to Ivyglen Substation.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative B2 would not require the proposed overhead crossing of I-15 near Lee Lake or the 10 temporary shoofly line poles along 115-kV Segment VIG7. Although it would require approximately 60 more LWS poles than the proposed Valley–Ivyglen Project, it is not anticipated that the LWS poles would be visible from I-15. Therefore, this alternative could reduce a potentially significant effect on aesthetics along I-15, an eligible State Scenic Highway (Caltrans 2011). This alternative would also reduce the length of proposed subtransmission line that would be located within a Very High Fire Hazard Severity Zone.

Environmental Disadvantages

VIG Alternative B2 would be approximately 1.1 miles longer and would require approximately 60 more LWS poles than the proposed Valley–Ivyglen Project. Because of the additional LWS poles, the use of helicopters during construction would likely be increased. Therefore, this alternative would result in greater effects on air quality from the increased disturbance and helicopter use and greater effects on air traffic from the increased helicopter use.

Based on a desktop analysis, this alternative would cross and potentially impact up to four jurisdictional features and two suitable fairy shrimp habitat areas (Figure 10). Impacts on potentially jurisdictional waterways under this alternative are assumed to be similar to those of the proposed Valley–Ivyglen Project. Noise levels generated during construction of VIG

Alternative B2 may have a greater effect on sensitive receptors compared to the proposed Valley–Ivyglen Project because of this alternative's proximity to residences. Additionally, this alternative could affect mining activities west of the Sycamore Creek Specific Plan area.

This alternative would not conflict with the Sycamore Creek Specific Plan structure height restrictions because the subtransmission line would be installed in an underground conduit. As a result, this alternative would not have greater or reduced effects on Sycamore Creek Specific Plan No. 256 zoning ordinance in comparison to the proposed 115-kV Segment VIG8 route.

This alternative would not conflict with the Sycamore Creek Specific Plan structure height restrictions because the subtransmission line would be installed in an underground conduit. As a result, this alternative would not have greater or lower likelihood of conflicting with the Sycamore Creek Specific Plan No. 256 zoning ordinance in comparison to the proposed 115-kV Segment VIG8 route.

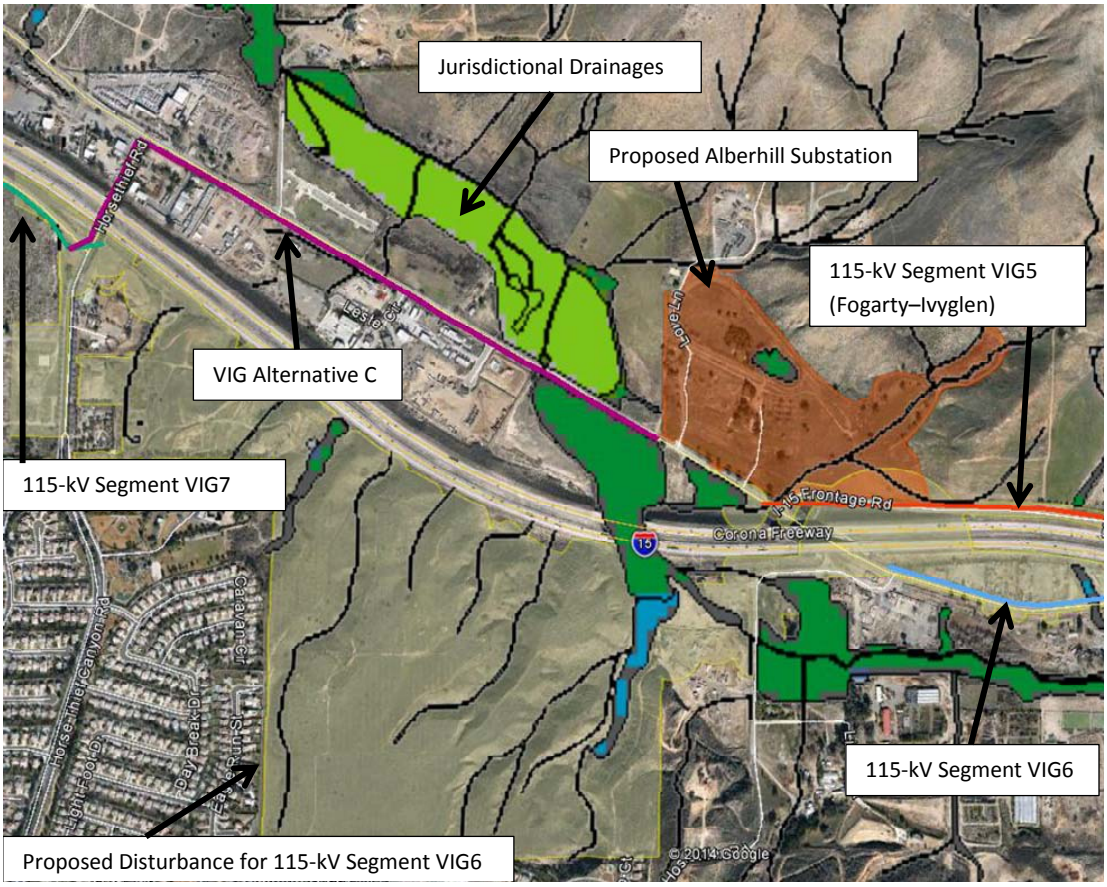
Conclusion

RETAINED. VIG Alternative B2 would be feasible, meet the project objectives, and could reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative C – Underground along Temescal Canyon Road and Horsethief Canyon Road (115-kV Segment VIG6)

This alternative was identified by the CPUC based on its review of the PFM (SCE 2014) and an alternative segment considered in the original Valley–Ivyglen Draft EIR (Segments W-3A and W-7; CPUC 2009). Under this alternative, wood poles along a 0.75-mile section of the Valley–Elsinore–Fogarty–Ivyglen 115-kV line along Temescal Canyon Road near the western corner of the proposed Alberhill Substation site (Figure 11) would be removed, and new underground conduit capable of supporting two 115-kV circuits (the Valley–Elsinore–Fogarty–Ivyglen 115-kV line and proposed Valley–Ivyglen 115-kV line) would be installed. From the intersection of Temescal Canyon Road and Horsethief Road, the subtransmission line would follow Horsethief Road below an I-15 overpass for approximately 915 feet. It would then transition to an overhead position at De Palma Road and connect to 115-kV Segment VIG7.

Figure 11 VIG Alternative C



Sources: Google 2014; SCE 2014; USFWS 2014

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative C would require approximately 25 fewer LWS poles, 12 fewer TSPs, and three fewer guy poles than the proposed Valley–Ivyglen Project. As a result, this alternative would substantially reduce a potentially significant effect on aesthetics along an eligible State Scenic Highway (Caltrans 2011). VIG Alternative C would result in less ground disturbance than the proposed Valley–Ivyglen Project because access along the VIG Alternative C route would be

provided by an established road. The use of helicopters during construction would be reduced because aboveground structures would not be installed along the VIG Alternative C route. This alternative would likely reduce effects on air quality because of the reduced disturbance area and reduced helicopter use. Effects on air traffic would also be reduced because of the reduced helicopter use.

VIG Alternative C would avoid potentially significant effects on biological resources and hydrology including potentially jurisdictional waterways on the south side of I-15. However, based on a desktop analysis, this alternative may impact jurisdictional drainages located adjacent to Temescal Canyon Road. It is assumed effects on biological resources and hydrology ~~would~~ could be reduced under this alternative compared to the proposed Valley–Ivyglen Project, as disturbance would primarily occur within and along existing roads; however, impacts on biological resources and hydrology would require more detailed analysis.

VIG Alternative C would not locate pole structures along the tops of a visually significant ridgeline or hilltops adjacent to an eligible State Scenic Highway (Riverside County General Plan Policy 11.1(d)) or within 50 feet of an eligible State Scenic Highway (Riverside County General Plan Policy 13.4), which would avoid potentially significant effects on land use. This alternative would also reduce the length of proposed subtransmission line that would be located within a Very High Fire Hazard Severity Zone.

Environmental Disadvantages

No environmental disadvantages were identified for this alternative during the alternative screening process.

Conclusion

RETAINED. VIG Alternative C would be feasible, meet the project objectives, and could reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative D – Underground Route along Lake Street Segment (115-kV Segment VIG5)

This alternative was identified by the CPUC based on information provided by Castle & Cooke in response to the applicant's submittal of the PFM (SCE 2014; Castle & Cooke 2014). Under this alternative, an approximately 1,000-foot segment of 115-kV Segment 5 along Lake Street would be installed in a new underground conduit between proposed Structures VIG453 and proposed Structure VIG456. The underground conduit would accommodate the proposed 115-kV subtransmission lines for both the Valley–Ivyglen Project and Alberhill Project. The underground conduit would be located under the future Lake Street alignment, as adopted in the City of Lake Elsinore's Vesting Tentative Tract No. 35001 in December 2012.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative D would not reduce a potential significant impact of the proposed project.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Valley–Ivyglen Project. Although VIG Alternative D2 would result in approximately 1,000 feet of additional undergrounding, effects on air quality from this alternative are anticipated.

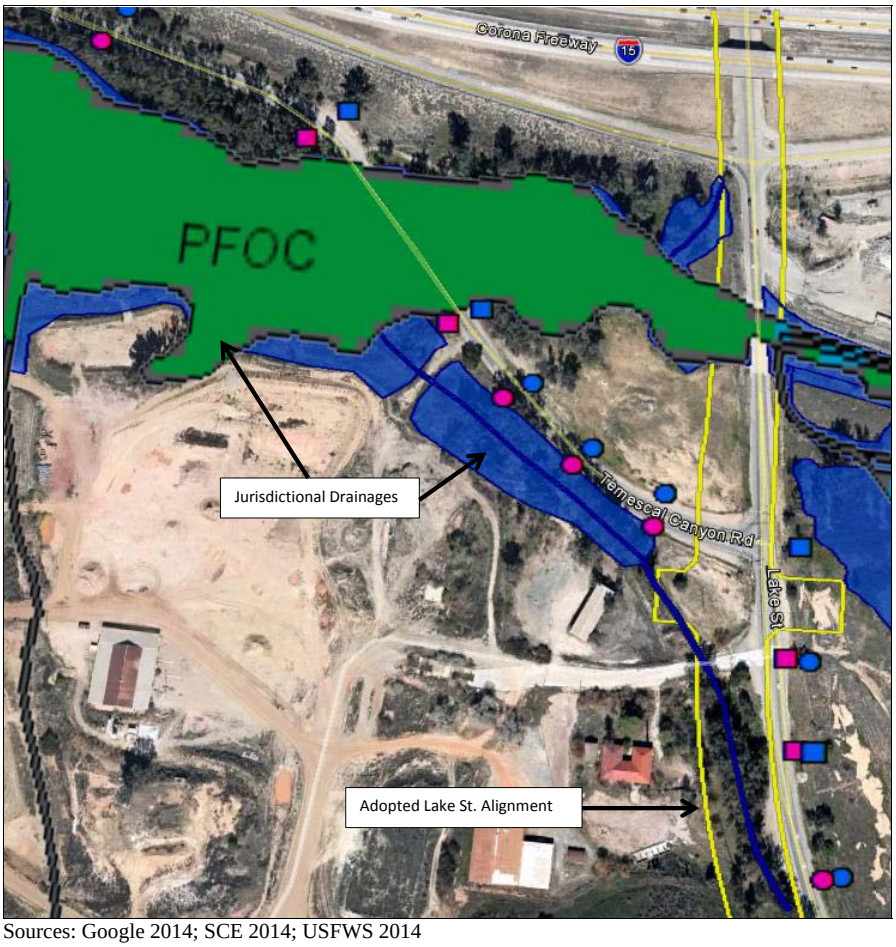
Conclusion

ELIMINATED. VIG Alternative D would meet the project objectives, would be feasible, but would not reduce a potentially significant effect. Therefore, this alternative was eliminated from further consideration in the EIR.

VIG Alternative E – Temescal Canyon Road and Lake Street Routing Alternative (115-kV Segment VIG5)

Under this alternative, 115-kV Segment VIG5 would be installed along Temescal Canyon Road from the intersection of Temescal Canyon Road and Lake Street as shown by the proposed structure locations identified on Figure 12.

Figure 12 VIG Alternative E



Sources: Google 2014; SCE 2014; USFWS 2014

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

This alternative would require approximately two fewer Valley–Elsinore–Fogarty–Ivyglen 115-kV structures and approximately three fewer new Valley–Ivyglen 115-kV structures along Lake Street and adjacent to the I-15 eastbound off-ramp. As a result, this alternative would reduce a potentially significant effect on aesthetics along an eligible State Scenic Highway (Caltrans 2011). Because of the fewer aboveground structures, the use of helicopters during construction would likely be reduced. This alternative would reduce effects on air quality because of the reduced amount of land disturbance and reduced helicopter use and would also reduce effects on air traffic because of the reduced helicopter use.

Similar to the proposed Valley–Ivyglen Project, this alternative would span the sensitive wetland areas along the Temescal Canyon Road. Therefore, effects on biological resources and hydrology would be similar to those of the proposed Valley–Ivyglen Project.

Environmental Disadvantages

No environmental disadvantages were identified.

Conclusion

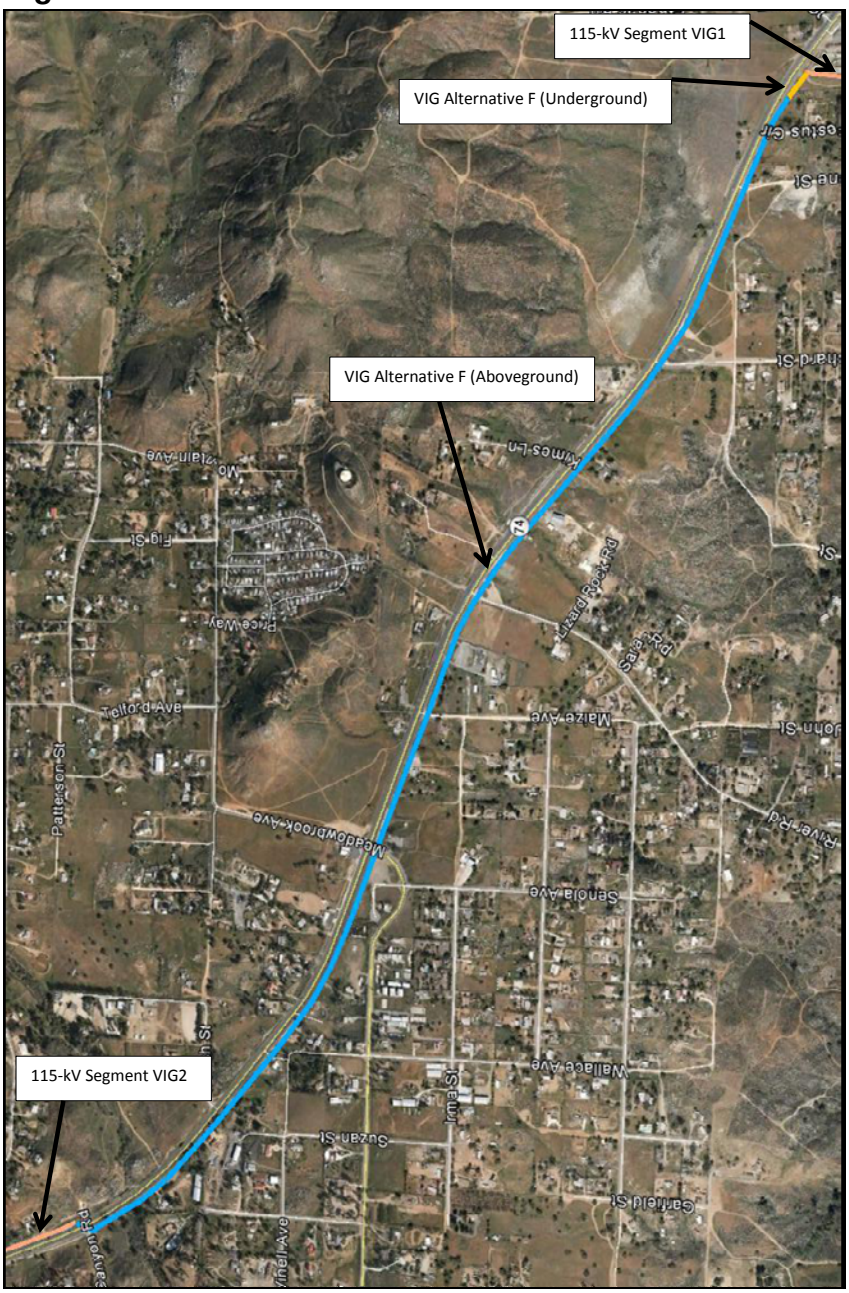
RETAINED. VIG Alternative E would meet the project objectives, would be feasible, and would reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative F – East Side of SR-74 to Wasson Canyon Road (115-kV Segment VIG2)

This alternative was identified by the CPUC based on its review of the PFM (SCE 2014) and an alternative segment considered in the original Valley–Ivyglen Draft EIR (Segment C-7; CPUC 2009). Under this alternative, the western terminus of 115-kV Segment VIG1 would end on the east side of SR-74 instead of the west side of SR-74 as proposed and would descend to an underground position. Furthermore, 115-k V Segment VIG2 would begin with 225 feet of new underground conduit. It would be installed under the existing Serrano–Valley 500-kV Transmission Line and extend south along the east side of SR-74. The alignment would then rise to an overhead position and continue south along the east side of SR-74 following an existing

electrical and communications distribution line route to a point near the intersection of SR-74 and Wasson Canyon Road (approximately 2 miles southwest of 115-kV Segment VIG1), where it would cross SR-74 and then continue as proposed on the west side of SR-74 (Figure 13).

Figure 13 VIG Alternative F



Sources: Google 2014, SCE 2014

East Side of SR-74 Route Variation Dismissed from Further Consideration

The CPUC considered an alternative similar to VIG Alternative F that included an alignment that would follow existing electrical and communications distribution line routes adjacent to the east

side of SR-74 to a point near SR-74 and Wasson Canyon Road, where it would cross SR-74 and then continue as proposed on the west side of SR-74. However, this variation included an overhead crossing of the Serrano–Valley 500-kV line instead of an underground crossing under the Serrano–Valley 500-kV line. This variation would require that 115-kV Segment VIG1 cross SR-74 twice prior to the start of 115-kV Segment VIG2 on the east side of SR-74 because of CPUC General Order 95 conductor clearance requirements. The CPUC dismissed this variation because it would require two overhead crossings of SR-74 and would not offer any environmental advantages in comparison to VIG Alternative F. Therefore this variation would not be environmentally superior with respect to VIG Alternative F, and it is not considered further in this report.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

VIG Alternative F would not require the proposed overhead crossing of SR-74 near the western terminus of 115-kV Segment VIG1, would reduce the number of overhead guy line crossings along SR-74, and would require approximately four fewer LWS poles and 10 fewer guy poles. This alternative would reduce potentially significant effects on aesthetics and land use along SR-74, an eligible State Scenic Highway (Caltrans 2011). This alternative would also reduce the length of proposed subtransmission line that would be located within a Very High Fire Hazard Severity Zone. VIG Alternative F would approximately 1,000 feet shorter than the proposed 115-kV Segment VIG2 route.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Valley–Ivyglen Project, with the exception of the environmental advantages discussed above. VIG Alternative F would require approximately 225

feet of additional trenching; however, it would also require fewer structure installations, and the route would be shorter. Therefore, effects on air quality from this alternative are anticipated to be similar to those of the proposed Valley–Ivyglen Project.

Conclusion

RETAINED. This alternative would meet the project objectives, would be feasible, and would reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative G – Setback along SR-74 (115-kV Segment VIG2)

This alternative was identified by the CPUC. The Valley–Ivyglen Project, as approved by CPUC Decision 10-08-009 (CPUC 2010a), would closely follow the alignment of an existing distribution line along SR-74 or would otherwise be set back from SR-74 as shown in Figure 14 and in Figures B.3-4 and C.2-6 of the Draft EIR (CPUC 2009). Under this alternative, 115-kV Segment VIG2 would be set back from SR-74 in the following two areas as previously approved:

1. Along the northwest side of SR-74 between Trellis Lane and Rosetta Canyon Drive for a distance of approximately 600 feet north of El Toro Cut Off Road and 1,000 feet south of El Toro Cut Off Road. At the greatest distance, the setback from SR-74's roadway surface at this location would be approximately 200 feet; and
2. Along the northwest side of SR-74 between Ardenwood Way and Allan Street. At the greatest distance, the setback from SR-74's roadway surface at this location would be approximately 130 feet.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Figure 14 VIG Alternative G

Sources: Google 2014, SCE 2014

Environmental Advantages

Under VIG Alternative G, 12 fewer structures than under the proposed Valley–Ivyglen Project would be located within 50 feet of SR-74, an eligible State Scenic Highway. This would reduce a potentially significant conflict with Riverside County General Plan Policy LU 13.4 (County of Riverside 2008b). This alternative would also reduce a potentially significant effect on aesthetics along an eligible State Scenic Highway.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Valley–Ivyglen Project, with the exception of the environmental advantages discussed above. The setback near El Toro Cut Off Road would be approximately 100 feet longer than the proposed route, and the setback south of Ardenwood Road would be approximately 60 feet longer than the proposed route. The same number of new 115-kV structures would likely be installed under this alternative as under the proposed Valley–Ivyglen Project. Approximately 20 wood distribution line poles would be removed that would have remained in place as currently proposed. The additional length and additional pole removal would be minimal, however, and it is not anticipated that effects on air quality would be substantially different than those of the proposed Valley–Ivyglen Project.

A potential jurisdictional drainage is located along a section of the setback near El Toro Cut Off Road (SCE 2013), but it appears that this drainage could be avoided by careful project siting. Therefore, potential effects on biological resources and hydrology would likely be similar to those of the proposed Valley–Ivyglen Project.

Conclusion

RETAINED. VIG Alternative G would be feasible, meet the project objectives, and reduce potentially significant effects of the proposed Valley–Ivyglen Project. Therefore, this alternative was retained for further consideration in the EIR.

VIG Alternative H – Adjacent to I-15 Instead of on Hilltops (115-kV Segment VIG6)

This alternative was identified by the CPUC. The Valley–Ivyglen Project, as approved by CPUC Decision 10-08-009 (CPUC 2010a), required that overhead structures for the 115-kV Valley–Ivyglen Subtransmission Line be located off ridgelines (Applicant Proposed Measure AES-SCE-4). The 115-kV subtransmission line route was approved for installation within approximately 50 feet of the south side of the I-15, an eligible State Scenic Highway, such that it avoided hilltops (Figure B.3-6a, CPUC 2009).

115-kV Segment VIG6, as now proposed, would be installed along the hilltops adjacent to the south side of I-15 because an existing 33-kV distribution line is located along this alignment. The

wood distribution line poles would be removed and the distribution line relocated and underbuilt on the proposed 115-kV LWS poles. The applicant prepared visual simulations (Figures 16a and 16b) to illustrate the difference in potential effects on aesthetic resources along I-15 from installing LWS poles along the ridgeline or along the south side of the I-15 ROW. For both alignments, the applicant would remove the existing distribution poles and relocate the distribution line to the new 115-kV structures.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

No environmental advantages were identified.

Environmental Disadvantages

VIG Alternative H would reduce effects on land use because it would comply with Riverside County General Plan Policy 11.1(d), which protects visually significant ridgelines and hilltops (County of Riverside 2008b). However, this alternative would create a potentially significant effect on land use because the new 115-kV structures would be installed within 50 feet of the I-15 ROW, which would conflict with the County of Riverside General Plan Policy LU-13.4 requirement of a 50-foot setback from designated and eligible state and county scenic highways. Therefore, this alternative's overall effect on land use would be similar to the proposed Valley–Ivyglen Project.

The simulations presented in Figures 16a and 16b indicate that the potentially adverse effect on aesthetic resources of motorists travelling south on I-15 would likely be more severe with the installation of LWS poles immediately adjacent to the south side of the highway ROW. The new LWS poles (approximately 65 to 115 feet above ground level) would be more noticeable to motorists if located adjacent to the roadway (Figure 16) because they would be located within the foreground viewshed instead of set back within the middleground as shown in Figure 15.

Existing view from Interstate 15 near Horsethief Canyon Road looking southeast

Visual Simulation of Proposed Project (Segment 6)

Figure g-7b
Existing View and Visual Simulation from Interstate 15 near Horsethief Canyon Road

Existing view from Interstate 15 near Horsethief Canyon Road looking southeast

Visual Simulation of Approved Project Route (Segment 6)

Figure 16

Potential effects on air quality, biological resources, and hydrology would be similar to those that may occur under the proposed Valley–Ivyglen Project because the existing distribution line poles would be removed under both the proposed Valley–Ivyglen Project and the alternative.

Conclusion

ELIMINATED. VIG Alternative H would be feasible and meet the project objectives but would not avoid or reduce a potentially significant effect of the proposed Valley–Ivyglen Project; therefore, it was eliminated from further consideration.

VIG Alternative I – Double-Circuit Overhead Line (115-kV Segment VIG8)

This alternative was identified by the CPUC. As described under the proposed Valley–Ivyglen Project, the applicant would replace approximately 10 Fogarty–Ivyglen 115-kV Subtransmission Line structures with TSPs capable of supporting a double-circuit line along the northernmost section of 115-kV Segment VIG7 to accommodate both the Fogarty–Ivyglen 115-kV line and proposed Valley–Ivyglen 115-kV line. Under VIG Alternative I, replacement of the existing Fogarty–Ivyglen 115-kV line structures would continue along the length of 115-kV Segment VIG8 (approximately 1.9 miles) and into Ivyglen Substation. The installation of TSPs instead of LWS poles along 115-kV Segment VIG8 would meet the applicant's design criteria requirements for double-circuit subtransmission lines located along a roadway that provide the only source of electrical service to a substation. TSPs reduce the risk of vehicle collision removing a subtransmission line from service.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

A temporary shoofly line would not be required for this alternative because the existing, single-circuit Fogarty–Ivyglen 115-kV line would remain in service while the proposed double-circuit

structures are installed on either the southern or northern side of the ultimate 128-foot-wide roadway ROW. Although this would reduce impacts on air quality because less land would be disturbed and less equipment would be used during construction, impacts on air quality would also increase under this alternative as described in the Environmental Disadvantages section below. Overall, it is anticipated that impacts on air quality would similar to those of the proposed Valley–Ivyglen Project.

Environmental Disadvantages

According to the Riverside County General Plan, Temescal Canyon Road, which currently has two lanes and is approximately 50 to 60 feet wide, is planned to be widened to a four-lane arterial roadway that will be approximately 128 feet wide (County of Riverside 2003b). This alternative would require that the new overhead structures be installed outside the future Temescal Canyon Road footprint (i.e., farther from the existing roadway surface than if the proposed underground conduit were installed). VIG Alternative I would result in effects on air quality similar to those of the proposed Valley–Ivyglen Project due to the large disturbance areas that are required for the construction of TSP poles while avoiding the future alignment of Temescal Canyon Road. The new double-circuit TSPs would be visible from I-15, and this alternative would have a greater effect on aesthetics and land use along an eligible State Scenic Highway (Caltrans 2011) than the proposed Valley–Ivyglen Project.

Because VIG Alternative I would require that the TSPs be installed outside the planned 128-foot-wide Temescal Canyon Road ROW, it is likely that the TSP installations would impact the potentially jurisdictional wetland areas and drainages along Temescal Canyon Road as much as or more than the installation of new underground conduit as proposed.

Conclusion

ELIMINATED. VIG Alternative I would be feasible and meet the project objectives but would not avoid or reduce a potentially significant effect of the proposed Valley–Ivyglen Project; therefore, it was eliminated from further consideration.

VIG Alternative J – TSPs instead of Guy Poles along SR-74 (115-kV Segment VIG2)

This alternative was identified by the CPUC. Under this alternative, TSPs would be installed along 115-kV Segment VIG2 instead of installing approximately 22 LWS poles and associated guy poles. The applicant estimates that 22 to 25 TSPs would be installed that range in height from 65 to 90 feet. Span lengths between the 115-kV structures would remain as proposed (approximately 200 feet).

Consideration of CEQA Criteria

Project Objectives

This alternative would meet each of the three Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a technical, legal, and economic perspective.

Environmental Advantages

No environmental advantages were identified for this alternative.

Environmental Disadvantages

VIG Alternative J would have similar or greater adverse effects on motorists' views from SR-74 compared to the proposed Valley–Ivyglen Project. Although this alternative would not require 22 guy poles and associated overhead guy line crossings, the TSPs would be substantially wider than LWS poles, ranging in diameter from 5 to 8 feet at ground level instead of 1.5 to 2.5 feet at ground, and would be more visible to motorists. In addition, the applicant anticipates that the existing distribution line along SR-74 would not be relocated to the new TSPs under this alternative because the TSPs would not be designed to support underbuilt components. Under the proposed Valley–Ivyglen Project, the existing wood distribution poles would be removed, but under VIG Alternative J, the existing wood poles would likely remain in place. For this reason, a much larger number of utility structures would ultimately be located along SR-74 under VIG Alternative J than the proposed Valley–Ivyglen Project.

VIG Alternative J would have similar or greater effects on air quality compared to the proposed Valley–Ivyglen Project because construction of the TSPs requires concrete foundations and

larger work areas than are required for LWS poles. The proposed LWS poles would be buried directly into the soil and do not require concrete foundations.

Conclusion

ELIMINATED. VIG Alternative J would be feasible and meet the project objectives but would not avoid or reduce a potentially significant effect of the proposed Valley–Ivyglen Project; therefore, it was eliminated from further consideration.

VIG Alternative K – Reroute Valley-Ivyglen Subtransmission line Along Existing 500-kV Serrano-Valley ROW

This alternative was identified by the public. Under this alternative, the Valley-Ivyglen subtransmission line would share SCE's existing ROW for the 500-kV Serrano-Valley transmission line from Valley Substation heading west to where the 500-kV Serrano-Valley ROW intersects with I-15. The subtransmission line would then travel south along I-15 to the Ivyglen Substation.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet most of the Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be infeasible from a legal perspective. SCE's existing ROW for the 500-kV Serrano-Valley transmission line traverse Lake Mathews-Estelle Mountain Stephens Kangaroo Rat core reserve. The Implementation Agreement and Habitat Conservation Plan (HCP) have no provisions that allow an investor-owned utility to build within the core reserve. However, entities are allowed to operate and maintain existing infrastructure within the core reserve (HCP Section 5.c.1.t).

Environmental Advantages

No environmental advantages were identified for this alternative.

Environmental Disadvantages

VIG Alternative K would have similar effects on aesthetics as identified for the proposed project since construction and operation of the alternative would temporarily and permanently impact resources along I-15 and SR-74. Impacts on air quality would be similar or greater than the proposed project. Although, the alignment of the VIG Alternative K would be slightly shorter than the proposed project, the alternative alignment would traverse undeveloped hillsides, which would likely require increased helicopter use, blasting, and more access road improvements. VIG Alternative K would traverse the SKR core reserve and undeveloped hillsides, which would increase impacts on biological resources and hydrology compared to the proposed project.

Other environmental disadvantages associated with the proposed project would also apply to VIG Alternative K.

Conclusion

ELIMINATED. VIG Alternative K would meet most of the project objectives, but would not avoid or reduce a potentially significant effect of the proposed Valley–Ivyglen Project and would not be legally feasible; therefore, it was eliminated from further consideration.

VIG Alternative L – Reroute along Terra Cotta 33-kV Distribution Line

This alternative was identified by the CPUC. Under this alternative, segment 115-kV VIG5 would be rerouted through the Pacific Clay property to follow an existing 33-kV distribution alignment. It is assumed the existing 33-kV line would be undergrounded as part of a residential development planned for the area. If the 115-kV Segment VIG5 continued along the current 33-kV distribution alignment, this alternative would follow this alignment:

- From Nichols Road, the 115-kV alignment would continue northwest across Lake Street onto the Pacific Clay property.
- The alternative alignment would then traverse the Pacific Clay property in a northwesterly direction for about 1.7 miles.
- The alternative alignment would then pass through various land uses, including nursery and residential, for about 0.4 miles until it would cross Hostettler Road.

- From Hostettler Road, the alignment would go northwest for about 0.2 miles where it would terminate at the proposed 115-kV Segment VIG6 about 650 feet west of Hostettler Road.

This realignment would replace approximately 1.75 miles of 115-kV Segment VIG5 along Lake Street and Temescal Canyon Road. The Valley–Elsinore–Fogarty–Ivyglen 115-kV line would remain as currently configured along Lake Street, and no structures would be replaced. As part of this alternative, about 0.9 miles of 115-kV Segment VIG6 would also not need to be constructed along Temescal Canyon Road.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet most of the Valley–Ivyglen Project objectives (Section 1.5.2).

Feasibility

This alternative would be feasible from a legal, and economic perspective, but its technical implementation may be remote and speculative. The applicant has indicated that the 33-kV distribution line through the Pacific Clay Mine property would be relocated at the developer's request. The applicant has not received a relocation request as of July 2015, and the proposed schedule and future underground alignment of the 33-kV distribution line are unknown. Thus, this alternative would not be currently feasible due to the lack of information about the ultimate underground configuration of the 33-kV distribution line.

Environmental Advantages

This alternative would avoid a potentially significant aesthetic impact on Lake Street and I-15 because a fewer numbers of structures would be installed on Lake Street than the proposed project. This alternative would also reduce the number of structures visible from I-15.

Environmental Disadvantages

This alternative could result in additional air quality emissions due to additional trenching to underground the alignment. This alternative may also result in additional traffic impacts due to additional undergrounding.

Conclusion

ELIMINATED. This alternative would reduce a significant impact and would meet most of the project objectives, but its implementation is remote and speculative. This alternative is therefore dismissed from consideration in the EIR.

VIG Alternative M – Underground along the Entire Proposed Project Alignment

This alternative was identified by the public during scoping. VIG Alternative M would include installation of the entire 115-kV line within new underground conduit along the proposed project alignment.

Consideration of CEQA Criteria

Project Objectives

Alternative M would meet most of the objectives of the Valley–Ivyglen Project.

Feasibility

This alternative ~~would~~ could be feasible from a technical, legal, and economic perspective.

Environmental Advantages

Alternative M would reduce significant visual impacts along I-15, SR-74, and Lake Street.

Environmental Disadvantages

This alternative would substantially increase environmental impacts on various resources due to the amount of trenching required. Alternative M would result in increased fugitive dust emissions, impacts on biological and cultural resources, and disturbance to local geology and hydrology during construction compared to the proposed project. In areas where Alternative M would be located adjacent to or within roadways, temporary land closures and potentially temporary full road closures would be required to facilitate construction activities. These closures may also impact emergency vehicle access.

Conclusion

RETAINED. VIG Alternative M ~~would~~ could be feasible, would meet the project objectives, and could reduce potentially significant effects of the proposed Valley–Ivyglen Project. Although the results of this preliminary screening analysis are inconclusive and it is unclear whether this alternative would be feasible, due to public interest, ~~Therefore,~~ this alternative was nevertheless retained for further consideration in the EIR.

4 Summary of Alternative Screening Results

This section presents a summary of the conclusions from Section 3. ~~Each alternative identified by the applicant, CPUC, and public are listed in Tables 6 and 7, along with a summary of the screening results for each alternative.~~

4.1 Alternatives Carried Forward for Analysis in the EIR

Based on the analysis presented in this report, the following alternatives will be carried forward for full analysis in the EIR:

- ASP Alternative A: Lee Lake Substation Site (All Gas-Insulated Switchgear)
- ASP Alternative B: All Gas-Insulated Switchgear at Proposed Alberhill Substation Site
- ASP Alternative C: Reduced Capacity Substation (One Less Transformer)
- ASP Alternative X: Underground 115-kV Segment ASP6 Between Craig Avenue and Beth Drive
- VIG Alternative A: Campbell Ranch Road (115-kV Segment VIG8)
- VIG Alternative B1: Underground along Santiago Canyon Road (115-kV Segment VIG8)
- VIG Alternative B2: Santiago Canyon Road Underground and Overhead (115-kV Segment VIG8)
- VIG Alternative C: Underground along Temescal Canyon Road and Horsethief Canyon Road (115-kV Segment VIG6)
- VIG Alternative E: Temescal Canyon Road and Lake Street Routing Alternative (115-kV Segment VIG5)
- VIG Alternative F: East Side of SR-74 to Wasson Canyon Road (115-kV Segment VIG2)
- VIG Alternative G: Setback along SR-74 (115-kV Segment VIG2)
- VIG Alternative M: Underground along the Entire Proposed Project Alignment

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
A (ASP)	Lee Lake Substation Site (All Gas-Insulated Switchgear)	Yes	No	X	X	X	Yes	S (I-15, Lee Lake)	S (reduced acres and import soil)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S- (air, visual)
B (ASP)	All Gas-Insulated Switchgear at Proposed Substation Site	Yes	No	X	X	X	Yes	S- (I-15)	S- (reduced acres and import soil)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S- (visual, air)
C (ASP)	Reduced Capacity Alberhill Substation (One Less Transformer)	Yes	No	X	X	X	Yes	S- (I-15)	S- (reduced acres and import soil)	S (Temescal Wash, drainages)	S- (less transformer oil)	S (Temescal Wash, drainages)	S- (visual, air)
D (ASP)	All Open-Air Insulated Switchgear at Proposed Substation Site	No (feasibility, effects not reduced)	No	X	X	X	No	S+ (larger footprint near I-15)	S+ (larger footprint)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S+ (visual, air)
E (ASP)	Valley Substation Upgrade [1]	No (objectives)	Yes	X	–	–	Yes [2]	S-	S- (reduced acres and import soil)	n/s	S- (less transformer oil)	n/s	S- (air, visual)

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
F (ASP)	Transfer Demand to Valley North System	No (objectives, effects not reduced)	Yes	–	–	–	Yes	S (I-15)	S+ (15 more miles of 115 kV line)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S+ (air)
G (ASP)	Auld System Project	No (feasibility, effects may not be reduced)	Yes	X	X	X	No	S (3)	S+	S (2)	S (2)	S (2)	S+ (air)
H (ASP)	Lee Lake Substation Site (Proposed Substation Design)	No (feasibility)	Yes	X	X	X	No (substation size)	S (I-15, Lee Lake)	S (reduced acres and import soil)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S (air, visual)
I (ASP)	Gavilan Hills Site (Northwest of Proposed Substation Site)	No (effects not reduced)	Yes	X	X	X	Yes	S+ (I-15)	S+ (longer 500-kV lines)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S+ (visual, air)
J (ASP)	East of the Proposed Substation Site	No (effects not reduced)	Yes	X	X	X	Yes	S (I-15)	S	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S (visual, air)
K (ASP)	115-kV Segment A SP8 Substation Site	No (objectives)	No	X			Yes	S	S (shorter 500-kV lines but longer 115-kV lines)	S	S (additional 115-kV lines in VHFHSZ)	S	S (visual)

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
L (ASP)	Adjacent to Fogarty Substation Site	No (effects not reduced)	No (scoping)	X	X	X	Yes	S+ (longer 500-kV lines, cross I-15)	S+ (longer 500-kV lines)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S+ (visual, air)
M (ASP)	Substation Site Near Lake Street (Castle & Cooke Property)	No (effects not reduced)	No (scoping)	X	X	X	Yes	S+ (longer 500-kV lines, cross I-15)	S+ (longer 500-kV lines)	S (Temescal Wash, drainages)	S (VHFHSZ, transformer oil)	S (Temescal Wash, drainages)	S+ (visual, air)
N (ASP)	500-kV Line N1	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
O (ASP)	500-kV Line N2	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
P (ASP)	500-kV Line N3	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
Q (ASP)	500-kV Line C1	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
R (ASP)	500-kV Line C2	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
S (ASP)	500-kV Line C3	No (feasibility, effects not reduced)	Yes	X	X	X	No (SKR core reserve)	S	S	S+ (SKR core reserve, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
T (ASP)	500-kV Line C4	No (effects not reduced)	Yes	X	X	X	Yes	S	S	S (Temescal Wash, drainages)	S (VHFHSZ)	S (Temescal Wash, drainages)	S
U (ASP)	One Double-Circuit Transmission Line (500-kV Line VA)	No (feasibility)	No	X	X	X	No (NERC/ WECC standards, N-1)	S (I-15)	S (only one 500-kV line)	S-	S (VHFHSZ)	S-	S- (air)
V (ASP)	500-kV Monopoles	No (feasibility)	No	X	X	X	No	S- (I-15)	S	S	S	S	S- (visual)
W (ASP)	Byers Road 115-kV Routing (Holland Road)	No (effects not reduced)	Yes	X	X	X	Yes	S	S	S	S	S	S
X (ASP)	Underground 115-kV Segment A SP6 Between Craig Avenue and Beth Drive	**Yes**	No (City of Menifee)	X	X	X	Yes	S- (Calder Ranch)	S+	S	S	S	S+ (air)
X1 (ASP)	Underground 115-kV Segment A SP6	No (effects not reduced, see Alternative X)	No (scoping)	X	X	X	Yes	S	S+	S	S	S	S+ (air)

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
X2 (ASP)	Span 115-kV Segment A SP6 Between Craig Avenue and Beth Drive	No (effects not reduced)	No (CPUC)	X	X	X	Yes	S	S	S	S	S	S
Y (ASP)	Collier Avenue 115-kV Subtransmission Line Route	No (effects not reduced)	No (scoping)	X	X	X	Yes	S	S+	S	S	S	S+ (air)
Z (ASP)	Access Road from 500-kV Tower SA-4 to 500-kV SA-5	No (effects not reduced)	No	X	X	X	Yes	S	S	S (jurisdictional drainage)	S (VHFHSZ)	S (jurisdictional drainage)	S
Z1 (ASP)	Southern Access Road to 500-kV Tower SA-5	No (effects not reduced)	No	X	X	X	Yes	S	S	S (jurisdictional drainage)	S (VHFHSZ)	S (jurisdictional drainage)	S
AA (ASP)	Demand Management and Energy Conservation Programs	No (objectives)	No	X	–	–	Yes	S	S	S	S	S	S

Table 6 Summary of Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetic	Air Quality	Biological	Hazards	Hydrology	Cumulative
BB (ASP)	Distributed, Local, and Renewable Generation	No (objectives)	No	X			Yes	n/s	n/s	n/s	n/s	n/s	n/s

Source: Ecology & Environment

Key: ASP = Alberhill System Project, I-15 = Interstate 15, kV = kilovolt, N-1 = Refers to NERC and WECC planning standards that require electrical service to continue in the event that a single element of a transmission system goes out of service, n/s = Not specified or unclear, NERC = North American Electric Reliability Corporation, Obj. = objective; PEA = Proponent's Environmental Assessment, S = Significance (equal to, greater than, or less than as proposed), SKR = Stephens' Kangaroo Rat, VHFHSZ = Very High Fire Hazard Severity Zone (CAL FIRE), WECC = Western Electricity Coordinating Council,

Notes:

[1] This alternative, as described in the PEA, only discussed the installation of a new 560 megavolt ampere transformer at Valley Substation. During the CPUC's independent review of the proposed Alberhill Project, interconnection with the proposed Edison Mission Energy Sun Valley 115-kV Power Generation facility or the existing Inland Empire Energy Center (500-kV power-generation facility) were also considered as upgrades to Valley Substation.

[2] The analysis presented in this screening report concludes that this alternative is feasible, but the potential for exceedance of the short circuit rating of the Valley South 115-kV bus and increased induction motor stalling events require further evaluation. It is also assumed that the Sun Valley 115-kV Power Generation facility would be feasible to permit in the South Coast Air Quality Management District.

[3] Conceptual substation site and 500-kV transmission line routes have not been developed by the applicant. Although it appears likely that effects on air quality would increase because of the longer 500-kV lines, it is not possible to determine whether environmental effects would increase or decrease for the other resource areas without further design details for the Auld System Project.

Table 7 Summary of Alternatives to the Proposed Valley–Ivyglen Project

Alternative		Carried Forward	In PMR	Meets Objectives	Feasible	Environmental Effects								
						Aesthetics	Air Quality	Biological	Hazards	Hydrology	Land Use	Noise	Traffic	Cumulative
A (VIG)	Campbell Ranch Road (115-kV Segment VIG8)	Yes	No [1]	Yes	Yes	S (no I-15 crossing)	S	S (jurisdictional drainages)	S (VHFHSZ)	S (jurisdictional drainages)	S	S+ (closer receptors)	S (no I-15 crossing, less helicopter use)	S (aesthetics, jurisdictional drainages)
B1 (VIG)	Underground along Santiago Canyon Road (115-kV Segment VIG8)	Yes	No	Yes	Yes	S (no I-15 crossing)	S+ (longer route)	S	S (VHFHSZ)	S	S	S+ (closer receptors)	S (no I-15 crossing)	S (aesthetics)
B2 (VIG)	Santiago Canyon Road Underground and Overhead (115-kV Segment VIG8)	Yes	No	Yes	Yes	S (no I-15 crossing)	S+ (longer route)	S	S (VHFHSZ)	S	S	S+ (closer receptors)	S (no I-15 crossing)	S (aesthetics)
C (VIG)	Underground along Temescal Canyon Road and Horsethief Canyon Road (115-kV Segment VIG6)	Yes	No [1]	Yes	Yes	S (no overhead structures, I-15)	S (shorter route)	S (jurisdictional drainages)	S (VHFHSZ)	S (jurisdictional drainages)	S (no structures on hilltops or in Scenic highway ROW)	S	S	S (aesthetics, jurisdictional drainages)
D (VIG)	Underground Route along Lake Street Segment (115-kV Segment VIG5)	No	No	Yes	Yes	S	S	S	S	S	S	S	S	S
E (VIG)	Temescal Canyon Road and Lake Street Routing Alternative (115-kV Segment VIG5)	Yes	No	Yes	Yes	S (fewer overhead structures, I-15)	S (fewer structures)	S	S	S	S	S	S (less helicopter use)	S (aesthetics)

Table 7 Summary of Alternatives to the Proposed Valley–Ivyglen Project

Alternative		Carried Forward	In PMR	Meets Objectives	Feasible	Environmental Effects								
						Aesthetics	Air Quality	Biological	Hazards	Hydrology	Land Use	Noise	Traffic	Cumulative
F (VIG)	East Side of SR-74 to Wasson Canyon Road (115-kV Segment VIG2)	Yes	No	Yes	Yes	S- (fewer overhead structures, SR-74)	S	S	S- (VHFHSZ)	S	S	S	S	S- (aesthetics)
G (VIG)	Setback along SR-74 (115-kV Segment VIG2)	Yes	No	Yes	Yes	S- (setback from SR-74)	S	S	S	S	S- (no structures in Scenic highway ROW)	S	S	S- (aesthetics)
H (VIG)	Adjacent to I-15 Instead of on Hilltops (115-kV Segment VIG6)	No	No	Yes	Yes	S+ (foreground view from I-15)	S	S	S	S	S	S	S	S+ (aesthetics)
I (VIG)	Double-Circuit Overhead Line (115-kV Segment VIG8)	No	No	Yes	Yes	S+ (more overhead structures, I-15)	S	S+ (jurisdictional drainages)	S	S+ (jurisdictional drainages)	S	S+ (more helicopter use)	S+ (more helicopter use)	S+ (aesthetics)
J (VIG)	TSPs instead of Guy Poles along SR-74 (115-kV Segment VIG2)	No	No	Yes	Yes	S+ (larger structures along SR-74)	S+ (TSPs require concrete foundations)	S	S	S	S	S	S	S+ (aesthetics)
K (VIG)	Reroute Valley-Ivyglen Subtransmission line Along Existing 500-kV Serrano-Valley ROW	No	No	Yes	No	S	S+ (more ground disturbance)	S+ (SKR core reserve, jurisdictional drainages)	S	S+ (SKR, jurisdictional drainages)	S+ (SKR core reserve)	S	S	S
L	Reroute along Terra Cotta 33-kV Distribution Line	No	No	Yes	No	S- (fewer overhead	S	S	S	S	S	S	S	S

Table 7 Summary of Alternatives to the Proposed Valley–Ivyglen Project

	Alternative	Carried Forward	In PMR	Meets Objectives	Feasible	Environmental Effects								
						Aesthetics	Air Quality	Biological	Hazards	Hydrology	Land Use	Noise	Traffic	Cumulative
						structures, I-15)								
M	Underground along the Entire Proposed Project Alignment	Yes	No	Yes	Yes	S (fewer overhead structures, I-15)	S+ (more ground disturbance)	S+ (jurisdictional drainages)	S	S+ (jurisdictional drainages)	S	S+ (more construction activity)	S+ (more/longer traffic interruptions)	S+ (air quality, traffic)

Source: Ecology & Environment

Key: I-15 = Interstate 15, kV = kilovolt, n/s = Not specified or unclear, PMR = Project Modification Report, S = Significance (equal to, greater than, or less than as proposed), SR-74 = State Route 74, TSP = tubular steel pole, VHFHSZ = Very High Fire Hazard Severity Zone (CAL FIRE), VIG = Valley–Ivyglen Project,

Note: [1] The alternative route or sections of the alternative route were identified in the Valley–Ivyglen Draft EIR (CPUC 2009).

5 References

Allison, Don. 2012. Director of Public Works, City of Menifee, CA. Letter to Jensen Uchida, Project Manager, California Public Utilities Commission, San Francisco, CA. October 10.

California Department of Finance. 2014. E-4 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2014, with 2010 Benchmark. May 2014.

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Fire and Resource Assessment Program. Fire Hazard Severity Zone Riverside County (West). http://www.fire.ca.gov/fire_prevention/fhsz_maps_riversidewest.php. Accessed October 15, 2014.

California Department of Transportation (Caltrans). 2011. California Scenic Highway Mapping System. Updated September 7, 2011. Riverside County. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed October 15, 2014.

California Energy Commission (CEC). 2000. Distributed Generation: CEQA Review and Permit Streamlining (P700-00-019). December.

_____. 2009. Strategic Transmission Investment Plan (CEC-700-2009-011-CMF). December. p. 41.

California Independent System Operator (California ISO). 2009. Memorandum to ISO Board of Governors from Dr. Keith Casey, Vice President of Market & Infrastructure Development, RE: Decision on Alberhill Substation Project. December 9.

_____. 2015. 2014-2015 Transmission Plan. Prepared by Infrastructure Development. Approved by ISO Board of Governors. March 27

California Public Utilities Commission (CPUC). 1995. General Order No. 131-D. August 11.

_____. 2009. Draft Environmental Impact Report: Valley–Ivyglen Subtransmission Line and Fogarty Substation Project. State Clearinghouse No. 2008011082. Prepared by Ecology and Environment, Inc., San Francisco, CA. June.

_____. 2010a. Decision 10-08-009 Granting Southern California Edison Company a Permit to Construct the Fogarty Substation (Application 07-04-028) and the Valley–Ivyglen Subtransmission Line Project (Application 07-01-031). August 12.

_____. 2010b. Final Environmental Impact Report: Valley–Ivyglen Subtransmission Line and Fogarty Substation Project. State Clearinghouse No. 2008011082. Prepared by Ecology and Environment, Inc., San Francisco, CA. May.

_____. 2014. Distributed Generation: Net Energy Metering (NEM). http://www.cpuc.ca.gov/PUC/energy/DistGen/netmetering.htm. April 28. Accessed October 15, 2014.

Castle & Cooke. 2014. Response and Objection of Castle & Cooke Alberhill Ranch, LLC; Castle & Cooke California, Inc.; and Castle & Cooke Lake Elsinore West, Inc. to Southern California Edison Company's Amended Petition for Modification of Decision 10-08-009. June 23.

County of Riverside. 2003a. County of Riverside General Plan: Elsinore Area Land Use Plan. Map. October 7.

_____. 2003b. County of Riverside General Plan Figure C-1: Riverside County Circulation Plan.

_____. 2008b. County of Riverside General Plan: Chapter 3, Land Use Element. December.

_____. 2008a. Generalized Liquefaction (Figure). County of Riverside General Plan. Safety Element: Chapter 6. December.

Garner, Ashley. 2011. Galati Blek, LLP. Submission to California Energy Commission. Edison Mission Energy's Request for Suspension, Sun Valley Energy Project (Docket 05-AFC-3). Sacramento, CA. May 10.

Google. 2014. Google Earth. Build 6.2.1.6014 (2/2/2012). Direct X 9.

Federal Highway Administration (FHWA). 1988. Visual Impact Assessment for Highway Projects. Publication No. FHWA-HI-88-054.

Foremost Communities. 2014. Sycamore Creek, Temescal Valley, Riverside County, CA. http://www.foremostcommunities.com/portfolio-sycamore.html. Accessed October 15, 2014.

National Hydrography Dataset (NHD). 2010. United Stated Geological Survey. National Hydrography Dataset Viewer (online). http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd. Accessed October 15, 2014.

Nevada Hydro Company, Inc. (Nevada Hydro). 2011. Proponent's Environmental Assessment for the Talega–Escondido/Valley–Serrano 500-kV Interconnect. February.

Riverside County Habitat Conservation Agency (RCHCA). n.d. Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County, California. http://www.skrplan.org/skr.html. Accessed October 15, 2014.

Riverside County Habitat Conservation Agency (RCHCA) and Signatory Parties. 1996. Implementation Agreement, Riverside County, Long Term Habitat Conservation Plan. April 23.

Southern California Edison (SCE). 2011a. Proponent's Environmental Assessment: Alberhill System Project (April 11), as amended by responses from SCE to CPUC requests for additional information.

_____. 2011b. Appendix C: SCE Report to CAISO - Alberhill System Project. Reprinted in Proponent's Environmental Assessment: Alberhill System Project (April 11), as amended by responses from SCE to CPUC requests for additional information.

_____. 2012. Compliance Filing of Southern California Edison Company (U 338-E) Pursuant to Decision 08-09-039 (Order Instituting Rulemaking Regarding Policies and Protocols for Demand Response Load Impact Estimates, Cost-Effectiveness Methodologies, Megawatt Goals and Alignment with California Independent System Operator Market Design Protocols.). Rosemead, CA. April 30.

_____. 2013. Petition for Modification of Decision 10-08-009 (an August 12, 2010 decision by the CPUC granting SCE a Permit to Construct the Valley–Ivyglen Subtransmission Line and Fogarty Substation Project). April 2, as amended by responses from SCE to CPUC requests for additional information.

_____. 2014. Amended Petition for Modification of Decision 10-08-009. May 23, as amended by responses from SCE to CPUC requests for additional information.

Southern California Association of Governments (SCAG). 2012. Adopted 2012 TTP Growth Forecast. http://www.scag.ca.gov/forecast/index.htm. Accessed October 15,

United States Census Bureau (USCB). 2010. State and County QuickFacts. City of Lake Elsinore, California. http://quickfacts.census.gov/qfd/states/06/0639486.html. Accessed October 15, 2014.

United States Fish and Wildlife Service (USFWS). 2014. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/.

United States Environmental Protection Agency (US EPA). 2014. SF6 Emission Reduction Partnership for Electric Power Systems, Basic Information. http://www.epa.gov/electricpower-sf6/basic.html. Accessed October 15, 2014.

Addendum to the

Valley-Ivyglen and Alberhill Project EIR Alternatives Screening Report

Lead Agency:
California Public Utilities Commission

Prepared by:
Ecology and Environment, Inc.
505 Sansome Street, Suite 300
San Francisco, CA 94111

February 2016

This page intentionally left blank.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

This page intentionally left blank.

1. Introduction and Background

Southern California Edison (SCE, or the applicant) filed an application (A.09-09-022) and Proponent's Environmental Assessment (PEA) with the California Public Utilities Commission (CPUC) on September 30, 2009, to construct the Alberhill System Project (proposed Alberhill Project, or ASP). The applicant filed an amendment to the application on March 15, 2010, (Application A.09-09-022, amended) and filed amended sections of the PEA on April 11, 2011, which were deemed complete on May 26, 2011.

The applicant filed a Petition for Modification (PFM) of CPUC Decision 10-08-009 (CPUC 2010) granting SCE a Permit to Construct the Valley–Ivyglen Subtransmission Line and Fogarty Substation Project on April 2, 2013 (SCE 2013). SCE's application (A.07-01-031) for the Valley–Ivyglen 115-kilovolt (kV) Subtransmission Line Project (proposed Valley–Ivyglen Project, or VIG) was reopened. On May 23, 2014, SCE filed an Amended Petition for Modification (SCE 2014). The CPUC deemed the PFM application complete on April 28, 2015, and determined that an Environmental Impact Report (EIR) would be prepared to evaluate the proposed Valley–Ivyglen Project in accordance with the California Environmental Quality Act (CEQA).

Because the components of the proposed Valley–Ivyglen Project are required for construction of the proposed Alberhill Project, and the two projects may be constructed during the same period, the CPUC determined that it would be appropriate to evaluate the proposed projects pursuant to CEQA in a single document and a combined Alternatives Screening Report.

An Alternatives Screening Report for the Valley–Ivyglen and Alberhill Project EIR (2015 Alternatives Screening Report) was prepared for the CPUC in August 2015. The Alternatives Screening Report documents the alternatives development and screening analysis conducted to determine the range of alternatives for consideration in this EIR. It documents the criteria used to evaluate and select alternatives for further analysis, including their feasibility, the extent to which they would meet most of the basic objectives of the Valley–Ivyglen Project or Alberhill Project, respectively, and their potential to avoid or substantially lessen any of the significant effects of the Valley–Ivyglen Project or Alberhill Project, respectively.

In total, the 2015 Alternatives Screening Report considered 14 alternatives for the proposed Valley–Ivyglen Project and retained nine of them for consideration in the EIR. The 2015 Alternatives Screening Report considered 33 alternatives for the Alberhill Project and retained five of them for consideration in the EIR.

2. Purpose for this Addendum

Since the completion of the 2015 Alternatives Screening Report, two additional alternatives for the Alberhill Project have been identified. The first is a system alternative, and the second is a substation location alternative. The purpose of this addendum is to screen and evaluate these additional alternatives using the same criteria as the 2015 Alternatives Screening Report to determine if the alternatives should be carried forward for evaluation in the Valley-Ivyglen and Alberhill Project EIR.

For a detailed description of the project location and description, electrical demand forecasts, CEQA requirements, and analysis of the other alternatives, refer to the 2015 Alternatives Screening Report.

3. Alternative Screening Process and Criteria

As further detailed in Section 2 of the 2015 Alternatives Screening Report, each alternative was evaluated according to three criteria:

1. Would the alternative accomplish all or most of the project objectives?[1]

2. Would the alternative be feasible (from an economic, legal, and technological perspective)?

3. Would the alternative avoid or substantially lessen any significant effects of the proposed project (including consideration of whether an alternative itself could create significant effects potentially greater than those of the proposed project)?[2]

[1] Objectives of the proposed Alberhill Project are detailed in Section 1.5.1 of the 2015 Alternatives Screening Report.

[2] Significant effects identified in Table 3 of the 2015 Alternative Screening Report were used to screen the alternatives in this addendum.

The CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (Section 15126.6(b)). Under CEQA, it is not required that each alternative meet all of the project objectives or be cost efficient.

4. Alternatives Descriptions and Determinations

This section describes two additional alternatives identified after the initial screening report and explains why they were eliminated or retained for further consideration in the EIR. After screening, if it was determined that a potential alternative to the proposed projects would be unable to meet most of those projects' objectives, would be infeasible, or would not avoid or substantially lessen a potentially significant effect of the proposed projects, it was eliminated from further consideration.

4.1 ASP Alternative CC: Chino-Viejo 220-kV Transmission Line

ASP Alternative CC was identified by the CPUC. Under this alternative, a 220/115-kV substation would be built at the proposed Alberhill Substation location. A new double circuit 220-kV transmission line would be constructed to connect the 220/115-kV Alberhill Substation to the existing 220/66-kV Chino Substation. The 220-kV transmission line between the proposed Alberhill Substation and the existing 220/115-kV Chino Substation in Chino Hills would be at least 23 miles. Alternatively, an 18-mile double circuit 220-kV transmission line would tie the 220/115-kV Alberhill Substation into the existing double circuit Chino-Viejo 220-kV line (Figure 1). The exact distance and route of the new double circuit 220-kV transmission line would depend on existing rights-of-way (ROWs), topography, land uses, and other environmental factors.

It is assumed that 115-kV subtransmission lines and telecommunication line requirements for this alternative would be similar to those of the proposed Alberhill Project.

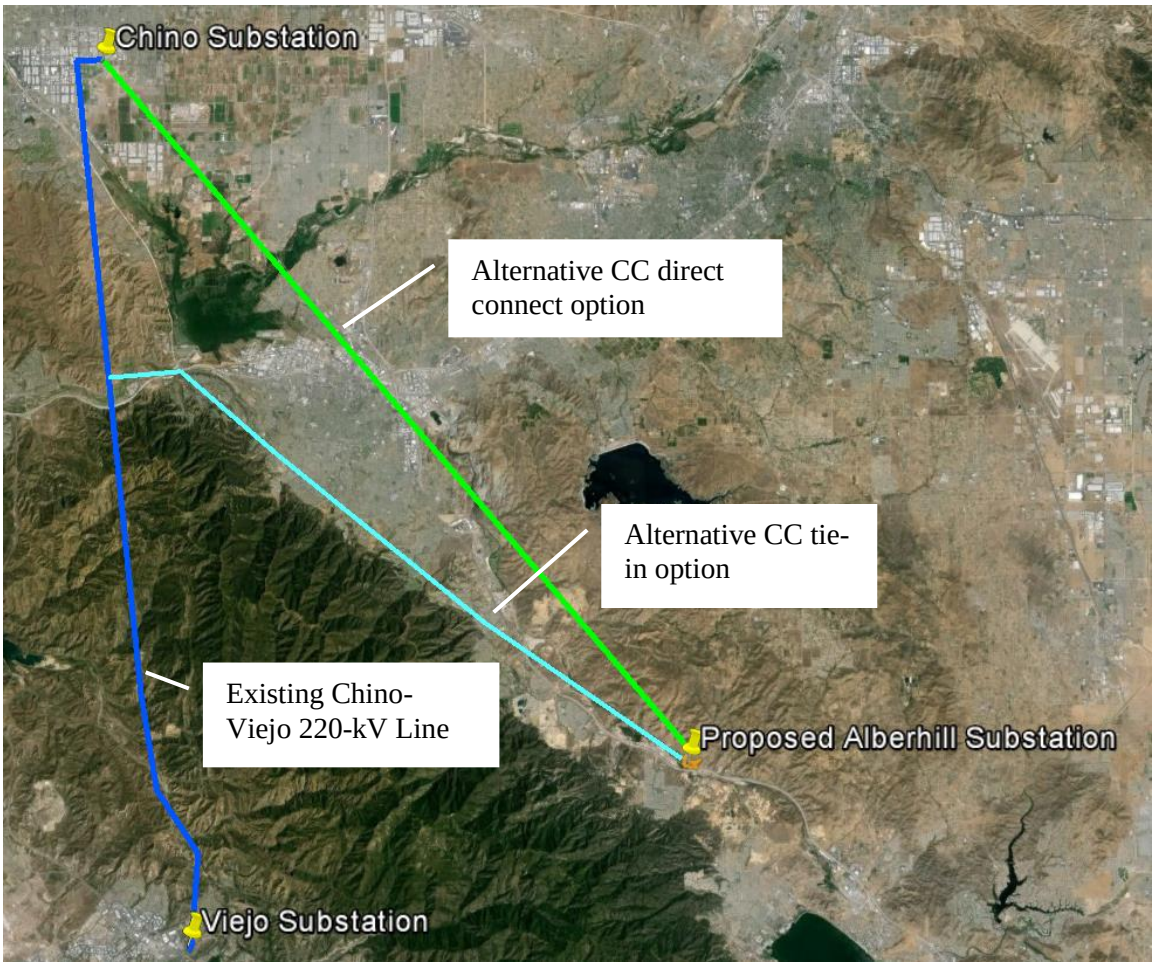


Figure 1 Overview of Alternative CC – Chino-Viejo 220-kV Transmission Line

Consideration of CEQA Criteria

Project Objectives

This alternative would meet most of the project objectives. It would maintain system ties between the new 115-kV System and Valley South 115-kV System and would relieve electrical demand that would exceed operating limit of the Valley South System 500/115-kV transformers. However, this alternative would not meet the project objective of constructing a new 500/115-kV substation in the Electrical Needs Area.

Feasibility

This alternative would not be feasible. The applicant would have to acquire new ROW for a significant portion of the 220-kV transmission line route under either option. It is unlikely that

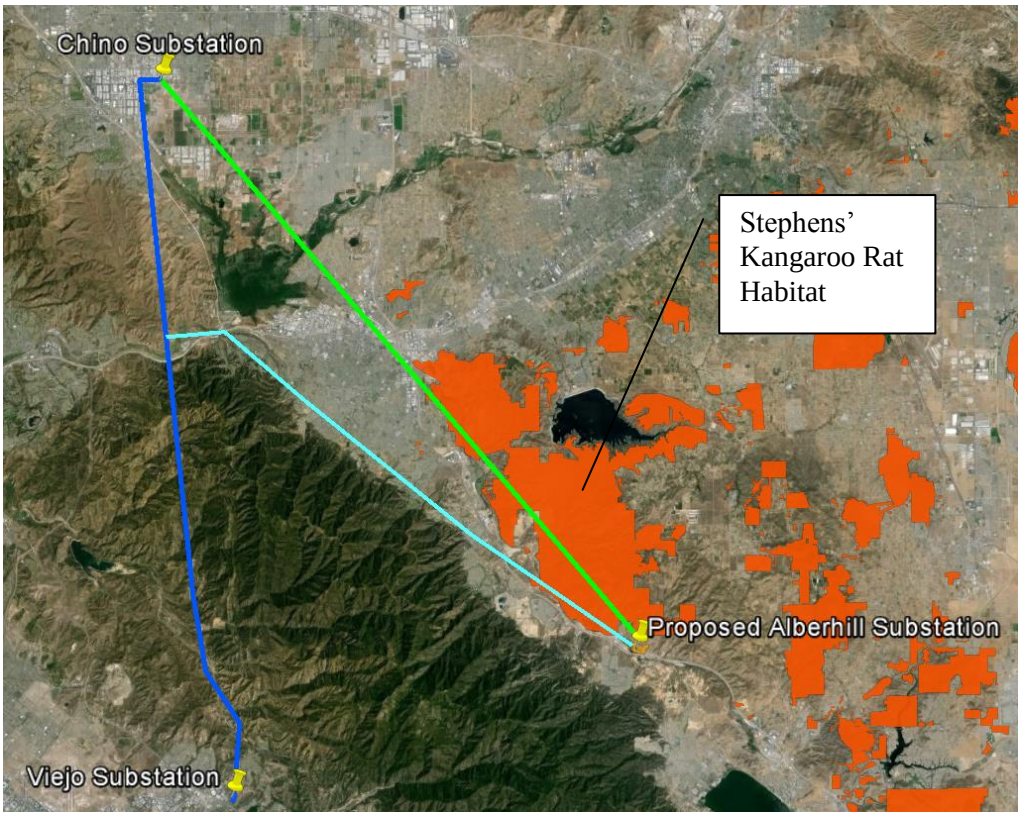
the applicant would be able to obtain the necessary ROW and construct the project in time to meet an operational need date of 2018.

Environmental Advantages

There are no known environmental advantages to this alternative.

Environmental Disadvantages

ASP Alternative CC would require a new double circuit 220-kV transmission line that would be at least 18 miles long, which is approximately six times longer than the two 1.5-mile 500-kV transmission lines required for the proposed project. The additional ground disturbance needed to construct the 220-kV transmission line would increase fugitive dust and vehicle and equipment emissions. The 220-kV transmission line would likely cross the Santa Ana River, and Stephens' kangaroo rat (SKR) habitat (Figure 2). Therefore, impacts on hydrologic and biological resources would increase.



Source: Riverside County Habitat Conservation Agency, 2007

Figure 2 Alternative CC – Chino-Viejo 220-kV Transmission Line Stephens' Kangaroo Rat Habitat

Conclusion

ELIMINATED. ASP Alternative CC would meet most of the objectives, but would not be feasible or reduce a significant impact of the proposed project. Therefore, this alternative was eliminated from further consideration.

4.2 ASP Alternative DD – Serrano Commerce Center Substation Site

ASP Alternative DD was identified by CPUC. Under this alternative, the proposed 550/115-kV Alberhill Substation would be constructed in the area covered by Riverside County Specific Plan No. 353 (Figure 3). 115-kV Segments ASP1 and 1.5 would not be built as proposed. Instead of crossing Interstate 15 (I-15), 115-kV Segment ASP2 would be constructed aboveground along the path of 115-kV Segments VIG6 and VIG7 (refer to the 2015 Alternatives Screening Report). The 115-kV Segment ASP2 would be placed underground with 115-kV Segment VIG8. Additionally, 115-kV Segment ASP2 would transition to an aboveground power line and would be constructed to follow the planned extension of Temescal Canyon Road, as proposed in Specific Plan No. 353, to the Alberhill Substation site. The 500-kV transmission lines would extend from the Alberhill Substation directly north 0.35 miles to tie into the existing Serrano–Valley 500-kV transmission lines. The applicant has indicated there may not be a clear line-of-sight to Santiago Peak and that there may need to be a 185-foot-tall tower installed at Johnstone Peak Communications site instead.

Consideration of CEQA Criteria

Project Objectives

This alternative would meet all three project objectives. It would result in construction of a new 500-/115-kV substation in the Electrical Needs Area, maintain system ties between the new 115-kV System and Valley South 115-kV System, and relieve electrical demand that would exceed the operating limit of the Valley South System 500/115-kV transformers.

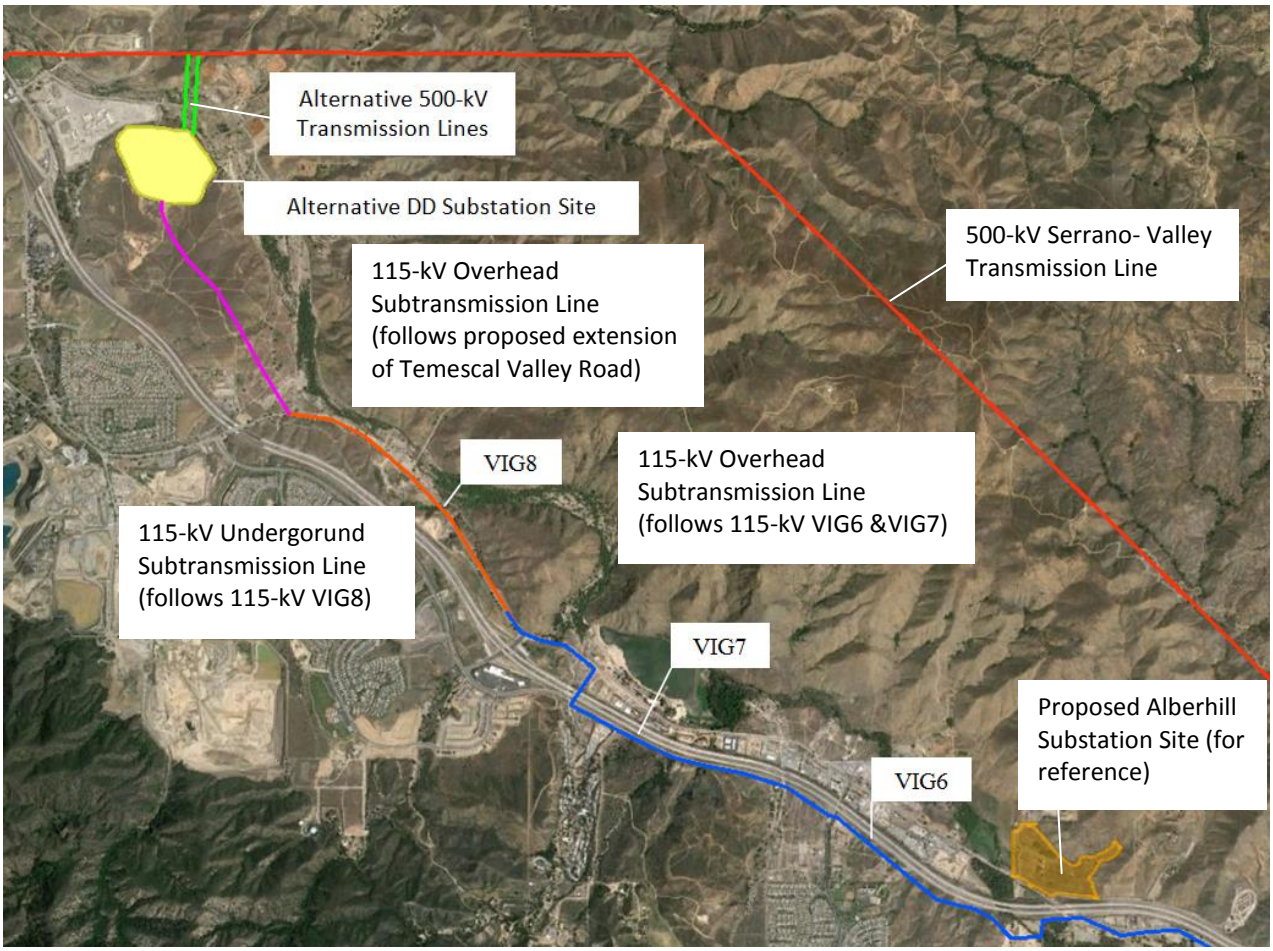


Figure 3 Overview of Alternative DD – Serrano Commerce Center Substation Site

Feasibility

This alternative would likely be feasible from a technical, legal, and economic perspective. If there is no clear line-of-sight between Santiago Peak Communications Site and the Alberhill Substation, a 185-foot tower may be installed instead at Johnstone Peak Communications Site. A physical survey would be required to confirm that there is line-of-sight between the Alberhill Substation site and Johnstone Peak Communications Site.

Environmental Advantages

Under this alternative, the existing topography would shield the substation and 500-kV transmission lines from the sight of motorists traveling along I-15, an Eligible Scenic Highway. The 500-kV transmission lines would avoid high quality SKR habitat, which would reduce impacts on biological resources. Additionally, the shorter 500-kV transmission lines would

substantially reduce impacts from air quality, erosion, and sedimentation as there would be less ground disturbance. Helicopter use during construction would also be decreased under this alternative as the 500-kV transmission lines would be located in less hilly terrain.

Environmental Disadvantages

Construction and operation under this alternative would result in environmental effects similar to those identified for the proposed Alberhill Project.

Conclusion

RETAINED. ASP Alternative DD would be feasible, meet the project objectives, and reduce a potentially significant effect. Therefore, this alternative was retained for further consideration in the EIR.

5 Summary of Alternative Screening Results

5.1 Alternatives Carried Forward for Analysis in the EIR

Alternative DD Serrano Commerce Center Substation Site will be carried forward for full analysis in the EIR.

Table 1 Summary of Additional Alternatives to the Proposed Alberhill Project

Alternatives		Carried Forward	In PEA	Objectives			Feasible	Environmental Effects					
				Obj. #1	Obj. #2	Obj. #3		Aesthetics	Air Quality	Biological	Hazards	Hydrology	Cumulative
CC	Chino-Viejo 220-kV Transmission Line	No	No	Yes	Yes	No	No	S (Alberhill Substation)	S + (more transmission line disturbance)	S + (Alberhill impacts; jurisdictional drainage; SKR habitat)	S	S+ (crosses jurisdictional drainage)	S
DD	Serrano Commerce Center Substation Site	Yes	No	Yes	Yes	Yes	Yes	S -	S (shorter helicopter path)	S-	S	S- (less erosion, sedimentation)	S

Key:
kV = kilovolt
Obj. = Objective
PEA = Proponent's Environmental Assessment
S – = Significance Less Than Proposed Project
S = Significance Equal to Proposed Project
S+ = Significance Greater Than Proposed Project
SKR = Stephens kangaroo rat

6. References

California Public Utilities Commission (CPUC). 2010. Decision 10-08-009 Granting Southern California Edison Company a Permit to Construct the Fogarty Substation (Application 07-04-028) and the Valley–Ivyglen Subtransmission Line Project (Application 07-01-031). August 12.

E & E (Ecology and Environment, Inc.). 2015. Valley-Ivyglen Substransmission Line and Alberhill Systems Project EIR. Alternatives Screening Report. August 2015.

Riverside County Habitat Conservation Agency. 2007. Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County, California. http://www.skrplan.org/skr.html. Accessed November 8, 2012.

Southern California Edison (SCE). 2013. Petition for Modification of Decision 10-08-009 (an August 12, 2010 decision by the CPUC granting SCE a Permit to Construct the Valley–Ivyglen Subtransmission Line and Fogarty Substation Project). April 2, as amended by responses from SCE to CPUC requests for additional information.

_____. 2014. Amended Petition for Modification of Decision 10-08-009. May 23, as amended by responses from SCE to CPUC requests for additional information.

This page intentionally left blank.