Appendix A
Notice of Availability

This page intentionally left blank

STATE OF CALIFORNIA **EDMUND G. BROWN, Governor**

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

To: **State Clearinghouse, Responsible and Trustee Agencies, Property Owners & Interested Parties**

From: **Robert Peterson, CPUC Project Manager**

Subject: **NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DRAFT EIR) AND PUBLIC MEETING: Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (A.15-12-007)**
SCH No. 2016021012

Date: **June 4, 2018**

The California Public Utilities Commission (CPUC) has prepared a Draft Environmental Impact Report (Draft EIR) under the California Environmental Quality Act (CEQA) for consideration of the application filed by Southern California Edison (SCE) to construct, operate, and maintain the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (A.15-12-007, proposed Project). The Draft EIR describes the proposed Project; evaluates and describes the potential environmental impacts associated with the proposed Project's construction, operation, and maintenance; identifies those impacts that could be significant; and presents mitigation measures which, if adopted by the CPUC or other responsible agencies, could avoid or minimize these impacts. The Draft EIR also considers alternatives to the proposed Project, including a No Project Alternative.

Description of the Proposed Project
The proposed Project would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario. The proposed Circle City Substation would be located approximately 0.25-mile south of the corner of Magnolia Avenue and East 6th Street in Corona; the existing Mira Loma Substation is located off Hamner Avenue near the corner of Cantu-Galleano Ranch Road in Ontario. SCE requests authorization to:

- Construct a new 66/12 kV substation (Circle City Substation) and up to six new underground 12 kV distribution getaways that would exit the new Circle City Substation;
- Construct four new 66 kV subtransmission source lines; and a new 66 kV subtransmission line, in a combination of both overhead and underground installations.
    - Two source lines would be approximately 3.5 miles in length, connecting the existing Mira Loma-Corona-Pedley 66 kV Subtransmission Line to the proposed Circle City Substation forming the new Mira Loma-Circle City-Pedley and Circle City-Corona No. 1 66 kV subtransmission lines (the "Pedley Source Lines") within the City of Corona.
    - Two source lines would be approximately 1.2 miles in length, connecting the existing Chase-Corona-Databank 66 kV Subtransmission Line from west of Rimpau Avenue on the south side of Magnolia Avenue to the Circle City Substation forming the new Circle City-Corona No. 2 and Chase-Circle City- Databank 66 kV subtransmission lines within the City of Corona.
- Construct an approximately 10.9-mile 66 kV subtransmission line (the "Mira Loma-Jefferson Subtransmission Line"), using a combination of both overhead and underground installations. The new line would be constructed from SCE's existing Mira Loma Substation in the City of Ontario, to a location near the southwest corner of SCE's existing Corona Substation near the corner of North Cota Street and Railroad Street. This line would run in a southerly direction within San Bernardino and Riverside counties within the cities of Ontario, Eastvale, Chino, Norco, and Corona.

- The Project would also include an upgrade to the Mira Loma Substation, relocation of approximately 1.9 miles of an existing overhead 33 kV distribution line along River Road between Corydon Avenue and North Cota Street in the cities of Norco and Corona to an underground position, and installation of telecommunication facilities to connect the Project to SCE's existing telecommunications system.

The purpose of this Project is to ensure the availability of safe and reliable electrical service and to provide additional capacity to serve long-term forecasted electrical demand requirements in the Electrical Needs Area (ENA), while also maintaining or improving system reliability and providing greater operational flexibility. The ENA includes the cities of Corona and Norco, and the surrounding area of unincorporated Riverside County.

The Project is anticipated to result in significant short-term construction air quality and noise effects, as well as significant long-term operational aesthetics effects.

Availability of Draft EIR
Copies of the Draft EIR are available for public review at the Norco Public Library 3954 Old Hamner Rd., Norco; Eastvale Branch Library7447 Scholar Way, Eastvale; and Corona Public Library 650 D Main St., Corona; and on the Project website at: www.cpuc.ca.gov/Environment/info/esa/Circle_City/index.html.

This website will be used to post all public documents during the environmental review process and to announce any upcoming public meetings. CD copies of the Draft EIR may be requested by telephone at (213) 694-3260 or by e-mail at CircleCityEIR@esassoc.com.

Public Comment on the Draft EIR
The Draft EIR is available for review and comment during a 45-day public comment period (June 4, 2018 through July 20, 2018). The public may present comments and concerns regarding the proposed Project and the adequacy of the Draft EIR. Written comments on the Draft EIR must be postmarked or received by e-mail no later than 5 p.m. on July 20, 2018. Please be sure to include your name, address, and telephone number in your correspondence. Written comments on the Draft EIR should be sent to:

Mr. Robert Peterson
Circle City Project
c/o Matthew Fagundes, Environmental Science Associates
1425 N. McDowell Blvd, Ste 200
Petaluma, CA 94954
Phone: (707) 795-0926
CircleCityEIR@esassoc.com

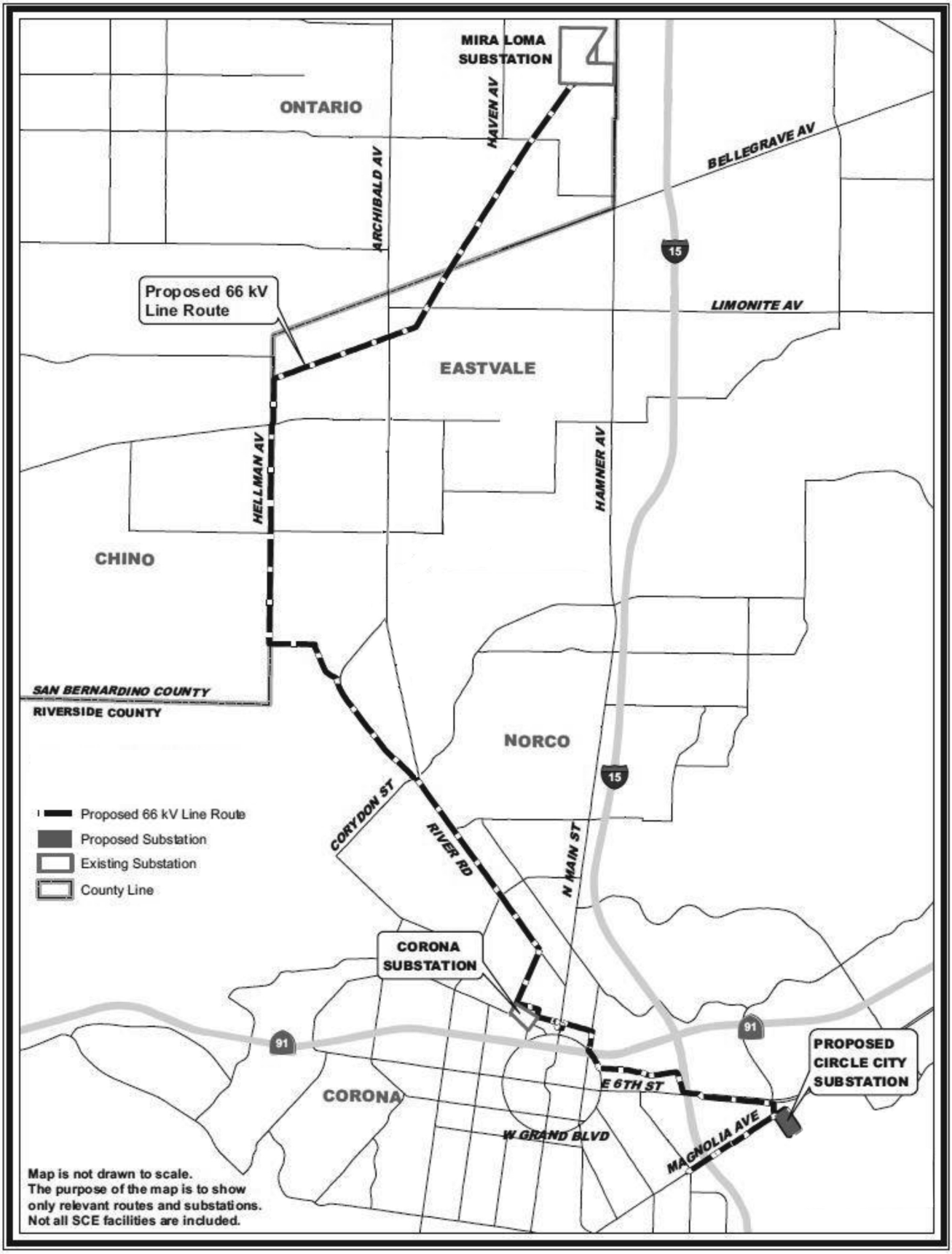
The CPUC will also hold two public comment meetings (presenting identical content) to receive oral and written comments from interested parties. Following the end of the public comment period, responses to all comments received on the Draft EIR and submitted within the specified 45-day review period will be prepared by the CPUC and included in a response to comments document, which together with the Draft EIR, will constitute the Final EIR for the Proposed Project. The public meetings will be held:

Wednesday, June 27, 2018
6:30 p.m. to 8:00 p.m.
Circle City Center
365 N. Main St. Corona, CA 92882

Thursday, June 28, 2018
6:30 p.m. to 8:00 p.m.
Eastvale Community Center
13820 Schleisman Road Eastvale, CA 92880

REMINDER: Draft EIR comments will be accepted by e-mail or mail with postmark through July 20, 2018. Please be sure to include your name, address, and telephone number.

Figure 1



Source: Based on Southern California Edison, 2015. Application of Southern California Edison Company (U 338-E) for a Permit to Construct Electrical Facilities with Voltages between 50 kV and 200 kV: Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project. December 4, 2015.

This page intentionally left blank

Appendix B
Draft EIR Newspaper Legal Advertisements

This page intentionally left blank

CALIFORNIA NEWSPAPER SERVICE BUREAU

D A I L Y J O U R N A L C O R P O R A T I O N

Mailing Address : 915 E FIRST ST, LOS ANGELES, CA 90012
Telephone (800) 788-7840 / Fax (800) 464-2839
Visit us @ www.LegalAdstore.com

Maria Hensel
ENVIRONMENTAL SCIENCE ASSOCIATES
1425 N MCDOWELL BLVD #200
PETALUMA, CA 94954

COPY OF NOTICE

Notice Type: GPN GOVT PUBLIC NOTICE

Ad Description legal ad CPUC CC project

To the right is a copy of the notice you sent to us for publication in the SAN BERNARDINO COUNTY SUN. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

06/04/2018 , 06/18/2018

The charge(s) for this order is as follows. An invoice will be sent after the last date of publication. If you prepaid this order in full, you will not receive an invoice.

Publication	$739.20
Total	$739.20

SBS# 3139668

CALIFORNIA PUBLIC UTILITIES COMMISSION

Public Notification for Release of a Draft Environmental Impact Report and Announcement of Public Comment Meetings for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project

Notice is hereby given that the California Public Utilities Commission (CPUC) has released a Notice of Availability (NOA) for the Draft Environmental Impact Report (EIR) for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (proposed Project) for public review and comment. The Draft EIR addresses potential direct, indirect, and cumulative impacts of the construction, operation, and maintenance of the proposed Project and alternatives. Information to be included in the final EIR will be based on input and comments received during the public comment period, which is open from June 4, 2018 until 5:00 p.m. on July 20, 2018. The Draft EIR is available for public review by request at the following public libraries: Norco Public Library: 3954 Old Hamner Rd. Norco, CA 92860, Eastvale Branch Library: 7447 Scholar Way Eastvale, CA 92880, and the Corona Public Library: 650 D Main St Corona, CA 92882. The Draft EIR is also available for public review on the CPUC's current project website at: www.cpuc.ca.gov/Environment/info/esa/Circle_City/index.html. The website provides access to public documents and information about the environmental review process for the proposed Project and will be updated during the review process to include announcements of upcoming public meetings and other information about the Project. A copy of the NOA may also be requested by telephone at (213) 694-3260. Comments may be submitted in writing to: Robert Peterson, CPUC c/o Matthew Fagundes, ESA, 1425 North McDowell Blvd, Suite 200, Petaluma, CA 94954; or by email to CircleCityEIR@esassoc.com.

Additionally, the CPUC will hold two public meetings, one on Wednesday, June 27, 2018 at Circle City Center, 365 North Main Street, Corona, CA 92880, and one on Thursday, June 28,

A0000047718 67

2018 at the Eastvale Community Center, 13820 Schleisman Road Eastvale, CA 92880. Both public meetings will be held from 6:30 p.m. to 8:00 p.m. to accept comments on the Draft EIR. All members of the public are invited to participate in either meeting.
6/4, 6/18/18

SBS-3139668#

THE PRESS-ENTERPRISE

1825 Chicago Ave, Suite 100
Riverside, CA 92507
951-684-1200
951-368-9018 FAX

PROOF OF PUBLICATION
(2010, 2015.5 C.C.P)

Publication(s): The Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc.: /

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper in general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673, under date of August 25, 1995, Case Number 267864, and under date of September 16, 2013, Case Number RIC 1309013; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

06/04, 06/18/2018

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: June 18, 2018
At: Riverside, California

Legal Advertising Representative, The Press-Enterprise

ESA / ENVIRONMENTAL SCIENCE ASSOCIATES
1425 N. MCDOWELL BLVD., SUITE 200
PETALUMA, CA 94954

Ad Number: 0011127516-01

P.O. Number:

Ad Copy:

California Public Utilities Commission
Public Notification for Release of a Draft Environmental Impact Report and Announcement of Public Comment Meetings for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project

Notice is hereby given that the California Public Utilities Commission (CPUC) has released a Notice of Availability (NOA) for the Draft Environmental Impact Report (EIR) for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (proposed Project) for public review and comment. The Draft EIR addresses potential direct, indirect, and cumulative impacts of the construction, operation, and maintenance of the proposed Project and alternatives. Information to be included in the final EIR will be based on input and comments received during the public comment period, which is open from June 4, 2018 until 5:00 p.m. on July 20, 2018. The Draft EIR is available for public review by request at the following public libraries: **Norco Public Library:** 3954 Old Hamner Rd. Norco, CA 92860, **Eastvale Branch Library:** 7447 Scholar Way Eastvale, CA 92880, and the **Corona Public Library:** 650 D Main St Corona, CA 92882. The Draft EIR is also available for public review on the CPUC's current project website at: www.cpuc.ca.gov/Environment/info/esa/Circle_City/index.html. The website provides access to public documents and information about the environmental review process for the proposed Project and will be updated during the review process to include announcements of upcoming public meetings and other information about the Project. A copy of the NOA may also be requested by telephone at (213) 694-3260. Comments may be submitted in writing to: Robert Peterson, CPUC c/o Matthew Fagundes, ESA, 1425 North McDowell Blvd, Suite 200, Petaluma, CA 94954; or by email to CircleCityEIR@esassoc.com.

Additionally, the CPUC will hold two public meetings, one on **Wednesday, June 27, 2018** at **Circle City Center, 365 North Main Street, Corona, CA 92880,** and one on **Thursday, June 28, 2018** at the **Eastvale Community Center, 13820 Schleisman Road Eastvale, CA 92880.** Both public meetings will be held from **6:30 p.m. to 8:00 p.m.** to accept comments on the Draft EIR. All members of the public are invited to participate in either meeting.

6/4, 6/10

This page intentionally left blank

Appendix C
Public Meeting Sign-In Sheets

This page intentionally left blank

Southern California Edison's Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project
Public Meeting
Hosted by the California Public Utilities Commission (CPUC)

Meeting Location: Circle City Center, 365 N. Main St. Corona, CA 92882

Date/Time: Wednesday, June 27, 2018 from 6:30 p.m. to 8:00 p.m.

Name	Affiliation	Address	Email address
Jack & Sherry Landeman			
Bryan Hartson	Chamber of Commerce, Exec. Asst		[redacted]
Tom R. Fler	Citizen		[redacted]
Jim Pollard	Property Owner	2180 Santa Anita Rd Norco	[redacted]
Michael Bass			[redacted]
Russ Titsworth	Property Owner	2150 Santa Anita Norco, CA. 92860	
Linda Rowin			
Richard Monroe	Property Owner	2252 Santa Anita Rd	[redacted]

Circle City Draft EIR Public Mtg. 6/27/18 Corona

Name	Affiliation	Address	Email address
Jonathan Medina	Live in city		[redacted]
Karen Spiegel	City of Corona	400 S Vicentia Corona, CA 92882	[redacted]
giselle soria	asm. cervantes		

Southern California Edison's Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project
Public Meeting
Hosted by the California Public Utilities Commission (CPUC)

Meeting Location: Eastvale Community Center, 13820 Schleisman Road, Eastvale, CA 92880

Date/Time: Thursday, June 28, 2018 from 6:30 p.m. to 8:00 p.m.

Name	Affiliation	Address	Email address
Jane Anderson		6454 DAFFODIL CT	[redacted]
JIM POLLARD	PROPERTY OWNER	2180 SANTA ANITA RD. NORCO	[redacted]
DAHI KIM	CITY OF EASTVALE	12363 LIMONITE AVE. STE 910 EASTVALE	[redacted]
RALPH DILISIO	PROPERTY OWNER	7828 SHOREHAM ST EASTVALE	[redacted]
CHERY DILISIO	" "	"	[redacted]
TODD RIBBY	PRESIDENT CITY OF EASTVALE		
EUSWINS CORDERO	PRESIDENT CITY OF EASTVALE		[redacted]

6/28/18
6:30–8pm

Eastvale Community Center
13820 Schleisman Rd. Eastvale CA

Name	Affiliation	Address	Email address
Andrea Hove		14095 Lemon Valley Eastvale	[redacted]
Jorge Zavala	City of Eastvale	12363 Limonite Ave Suite 910 Eastvale, CA 91752	[redacted]
Dick Simmons	Resident	7091 Ginko Ct Eastvale Ca 92880	[redacted]
Kai Liu	Resident	7447 Silver Saddle CT,	[redacted]
Qian Li	Resident	7459 Silver saddle CT.	
Jessica Pippin	Resident	14919 Coleman Ct., Eastvale	[redacted]
maggie Wang	Resident	7468 silver saddle. CT eastvale	[redacted]
melody wang	Resident	7468 silver saddle CT corona	
DARREN EDLINGER	CONSULTANT	40810 COUNTY CTR. DR. #200 TEMECULA, CA 92591	[redacted]

Appendix D
Public Meeting Presentation

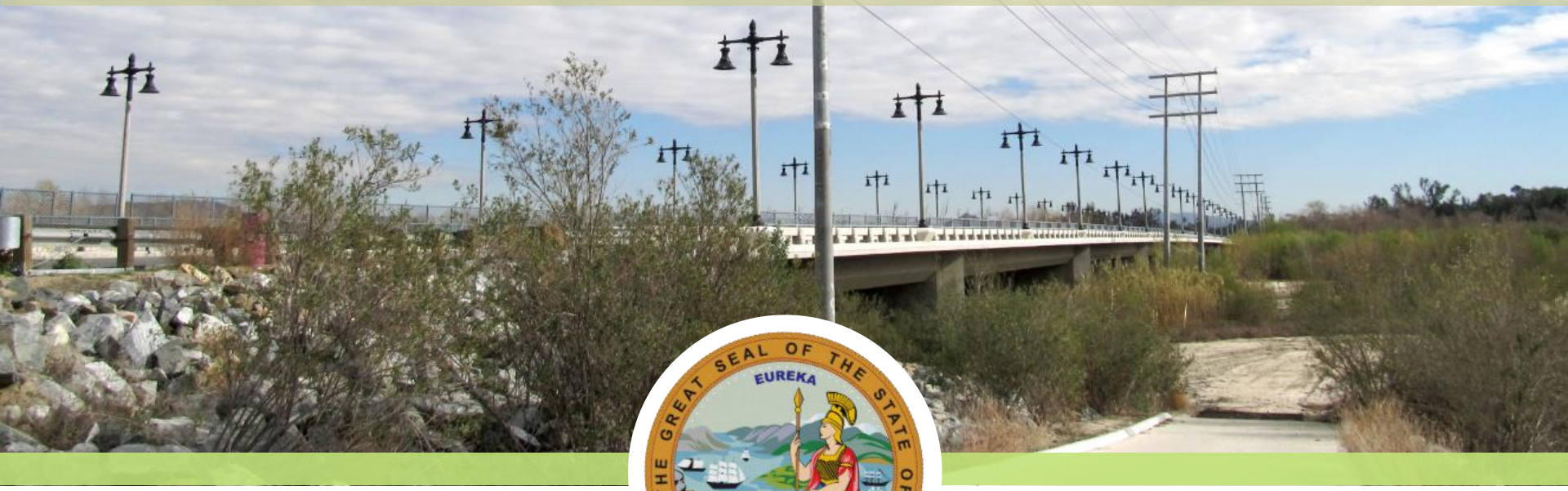
This page intentionally left blank

Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project

(CPUC Application A.15-12-007)

California Public Utilities Commission

DRAFT EIR PUBLIC MEETING



June 27, 2018
Circle City Center
365 N. Main Street
Corona, California

June 28, 2018
Eastvale Community Center
13820 Schleisman Road
Eastvale, California

CEQA Review Team

- Robert Peterson, California Public Utilities Commission (CPUC, the Commission) Project Manager
  - Lead Agency under the California Environmental Quality Act (CEQA)
- Environmental Science Associates (ESA) – Environmental Consultant for the CPUC
  - Matt Fagundes, ESA Project Manager
  - Mike Manka, ESA Project Director
  - Larry Kass, ESA Spanish Interpreter

Meeting Agenda

- Overview of the CPUC's Decision and Review Processes
- Overview of the Draft Environmental Impact Report (EIR)
  - Description of the proposed Project and Alternatives
  - Summary of Environmental Impacts
  - Initial Identification of the Environmentally Superior Alternative
- Public Comments

Who does the CPUC regulate?

CPUC

- Electricity
- Telephone Communication
- Natural Gas
- Water
- Transportation and Rail

Mission:
The CPUC regulates services and utilities, protects consumers, safeguards the environment, and assures Californians' access to safe and reliable utility infrastructure and services.

CPUC Application Review Process

Utility Files Application and PEA (December 2015)

CEQA Environmental Review

- **PEA Review and Deemed Complete**
- **Scoping Meetings** (February 2016)
- **Draft Environmental Document Issued** (June 4, 2018)
- **Comments on Draft Environmental Document (Due by July 20, 2018)**
- **Final Environmental Document Prepared** (Fall 2018)

Contact our CEQA team at:
CircleCityEIR@esassoc.com

Formal Proceeding for Application A.15-12-007

- **Responses/Protests to Application and Motions for Party Status Filed**
- **Applicant and Party Responses to Protests**
- **Pre-Hearing Conference** (March 16, 2016)
- **Scoping Ruling** (Last Updated April 13, 2018)
- **Testimony, Evidentiary Hearings, Briefs (TBD)**

Contact Public Advisor's Office
Public.Advisor@cpuc.ca.gov

- **Proposed Decision**
- **Comments on Proposed Decision**
- **Final Decision and Certification of Final Environmental Document**

Project Terminology

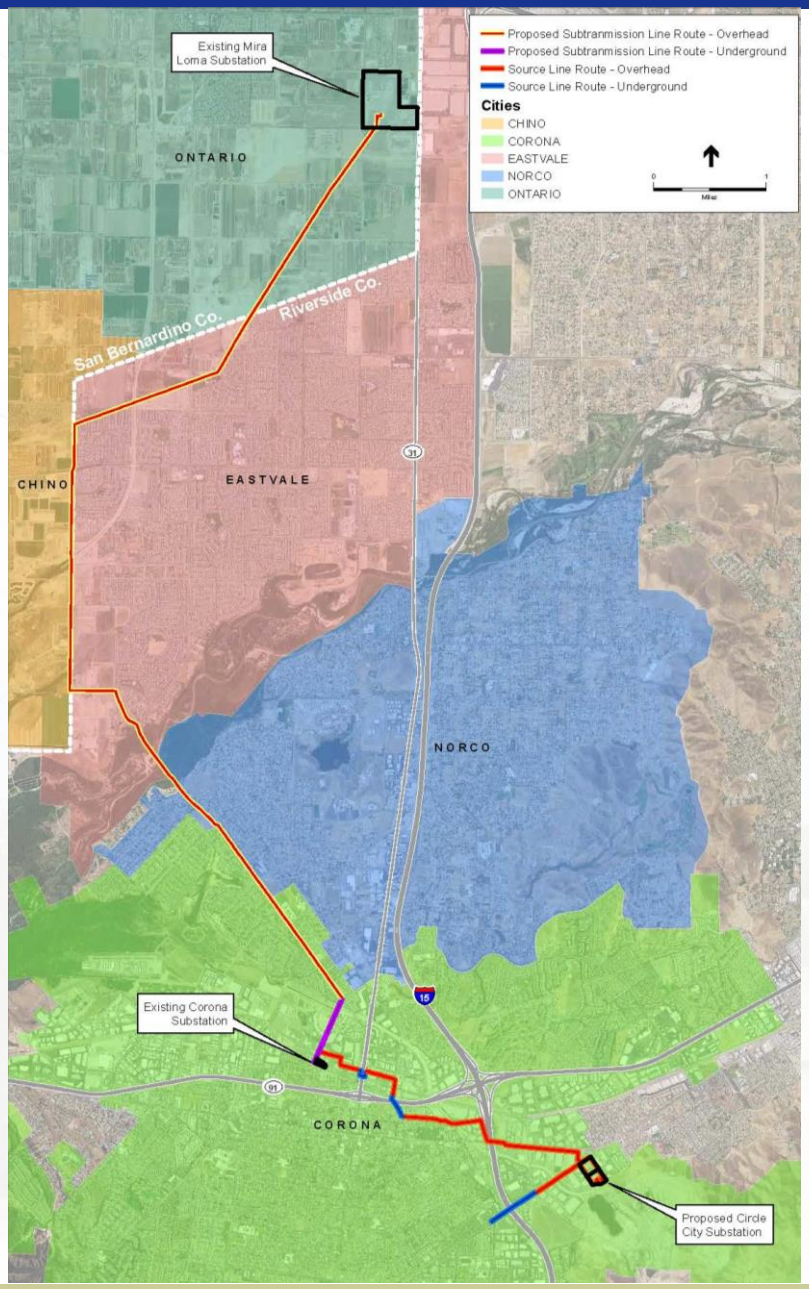
- **Substation** – A substation converts electrical voltage from high voltage to low voltage or reverse;
- **Subtransmission Line** – 66 kilovolt (kV) electrical power line that transmits power between substations, it can be overhead on poles or underground in conduit;
- **Distribution Line** – 12 kV or 33 kV electrical power lines, this is the voltage used to supply power to homes and businesses;
- **Source Lines** – refers to 66 kV electrical power lines that would be developed to supply power to the proposed Circle City Substation.

Proposed Project Objectives

- **Subtransmission Service Objective** – Maintain electrical system reliability by addressing overloads on the Mira Loma-Corona-Jefferson and Mira Loma-Corona 66 kV subtransmission lines that could occur under peak electrical demand conditions during the 2017 to 2026 forecast period; and

- **Distribution Service Objective** – Ensure that the Corona, Jefferson, and Chase substations do not exceed capacity under peak electrical demand conditions through the 2017 to 2026 forecast period.

Proposed Project Location



Circle City Substation and Source Lines

Substation
Pedley Source Lines - Overhead
Pedley Source Lines - Underground
Databank Source Lines - Overhead
Databank Source Lines - Underground
Segment Break

Note: The pole quantities indicated may increase or decrease upon completion of final engineering. Table 3-2: Subtransmission Structure Quantity and Dimensions provides a range of approximate pole quantities based on the preliminary design.

Install: 1 Wood Pole, 11 LWS Poles, 4 TSPs

Corona Substation

Install: 2 Vaults, 790-Foot Duct Bank

Install: 12 LWS Poles, 3 TSPs

Install: 2 Vaults, 1,220-Foot Duct Bank

Remove: 8 Wood Distribution Poles
Install: 1 Wood Pole, 11 LWS Poles, 4 TSPs

Remove: 1 Wood Distribution Pole
Install: 11 LWS Poles, 3 TSPs

Install: 21 LWS Poles, 3 TSPs

Install: 10 LWS Poles, 6 TSPs

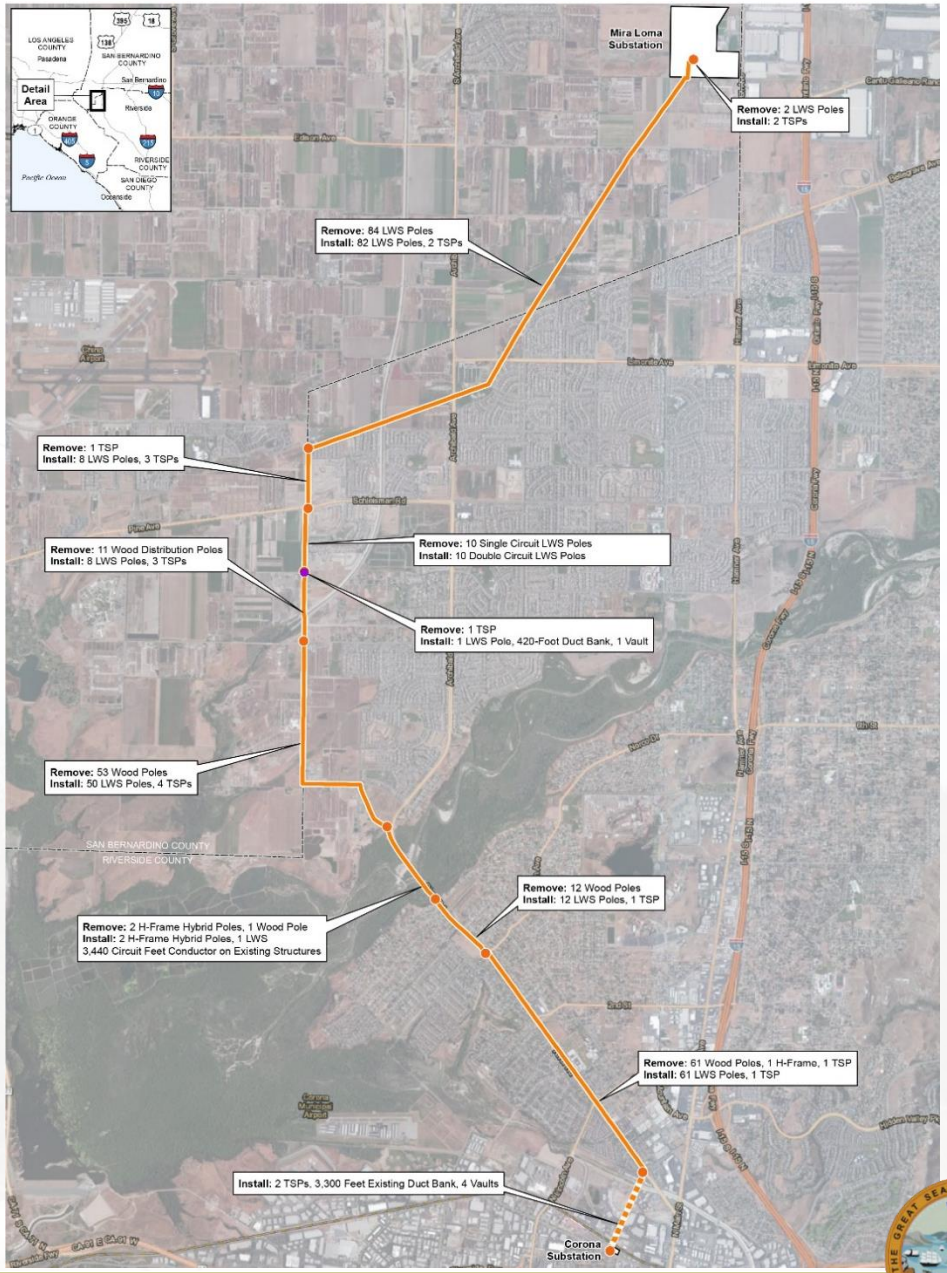
Remove: 3 Wood Distribution Poles,
Install: 18 LWS Poles, 5 TSPs

Circle City Substation (Proposed)

Install: 2 TSPs, 3 Vaults, 2,500-Foot Duct Bank

1:15,000
0 1,000 2,000 Feet

Mira Loma-Jefferson Subtransmission Line



Subtransmission Line Route - Overhead
Subtransmission Line Route - Underground
Subtransmission Line - Underground Crossing
Segment Break*
County Boundary
Substation

*Segment breaks are identified along the subtransmission line route to facilitate describing the removal and installation activities at different locations along the line.

Summary of Impacts

Following is a summary of the impact levels that would be associated with the proposed Project.

No Impact	Land Use and Planning and Public Services.
Less than Significant Impact or Less than Significant Impact with Mitigation	Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Energy Conservation, Geology and Soils, GHG Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Mineral Resources, Population and Housing, Recreation, Transportation and Traffic, Utilities and Service Systems.
Significant Unavoidable Impact	Aesthetics, Air Quality, and Noise.

To approve the proposed Project, the CPUC would be required to prepare a Statement of Overriding Considerations.

Alternatives Screening

Develop a range of alternatives based on input received from the public during scoping. Fourteen alternatives to the proposed Project were identified. The screening of the 14 alternatives was completed using the following methodology:

Step 1: Clarify the description of each alternative.

Step 2: Evaluate each alternative using CEQA criteria:

- Does it meet most of the Project objectives?
- Is it potentially feasible economically, environmentally, legally, socially, and technically?
- Does it avoid or substantially lessen any significant effects of the proposed Project; would it create any greater environmental effects than the proposed Project?

Step 3: Determine whether alternative meets the criteria and, thus, should be carried forward for full analysis in the EIR.

Alternatives Screening (cont.)

Ten of the 14 alternatives passed screening, plus the No Project Alternative, and were carried forward for further analysis in the Draft EIR.

- Alternative A: No Project

Subtransmission Service Objective Alternatives

- Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation;
- Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue;
- Alternative C2: 66 kV Subtransmission Line along Archibald Avenue; and
- Alternative C3: 66 kV Subtransmission-Level Battery Storage.

Alternatives Screening (cont.)

Distribution Service Objective Alternatives

- Alternative D1: 12 kV Distribution-Level Battery Storage;
- Alternative D2: 66/12 kV Substation Site Alternative;
- Alternative E1: Quarry Street 66 kV Source Lines Segment;
- Alternative E2: Underground Pedley 66 kV Source Lines from Interstate 15 to Circle City Substation;
- Alternative E3: Southern 66 kV Source Lines Alignment; and
- Alternative E4: Databank 66 kV Source Lines Only.

Alternatives Screening (cont.)

Subtransmission Service Objective

Subtransmission Service Objective

Proposed Mira Loma-Jefferson 66 kV Subtransmission Line
or
Alternative C1: Underground 66 kV Subtransmission Line Along Hellman Avenue
or
Alternative C2: 66 kV Subtransmission Line along Archibald Avenue
or
Alternative C3: 66 kV Subtransmission-Level Battery Storage

and/or

Alternative B: Subtransmission Line without Substation (Under Alternative B there would be no Substation, Battery Storage, or Substation Source Lines)

and

Distribution Service Objective

Substation or Battery Storage

Choose One of the Following:

Proposed Circle City Substation
or
Alternative D2: Substation Site Alternative

or

Alternative D1: Distribution-Level Battery Storage (Under D1 there would be No Substation Source Lines)

and

Substation Source Lines

Proposed Source Lines

or

One or a Combination of the Following:

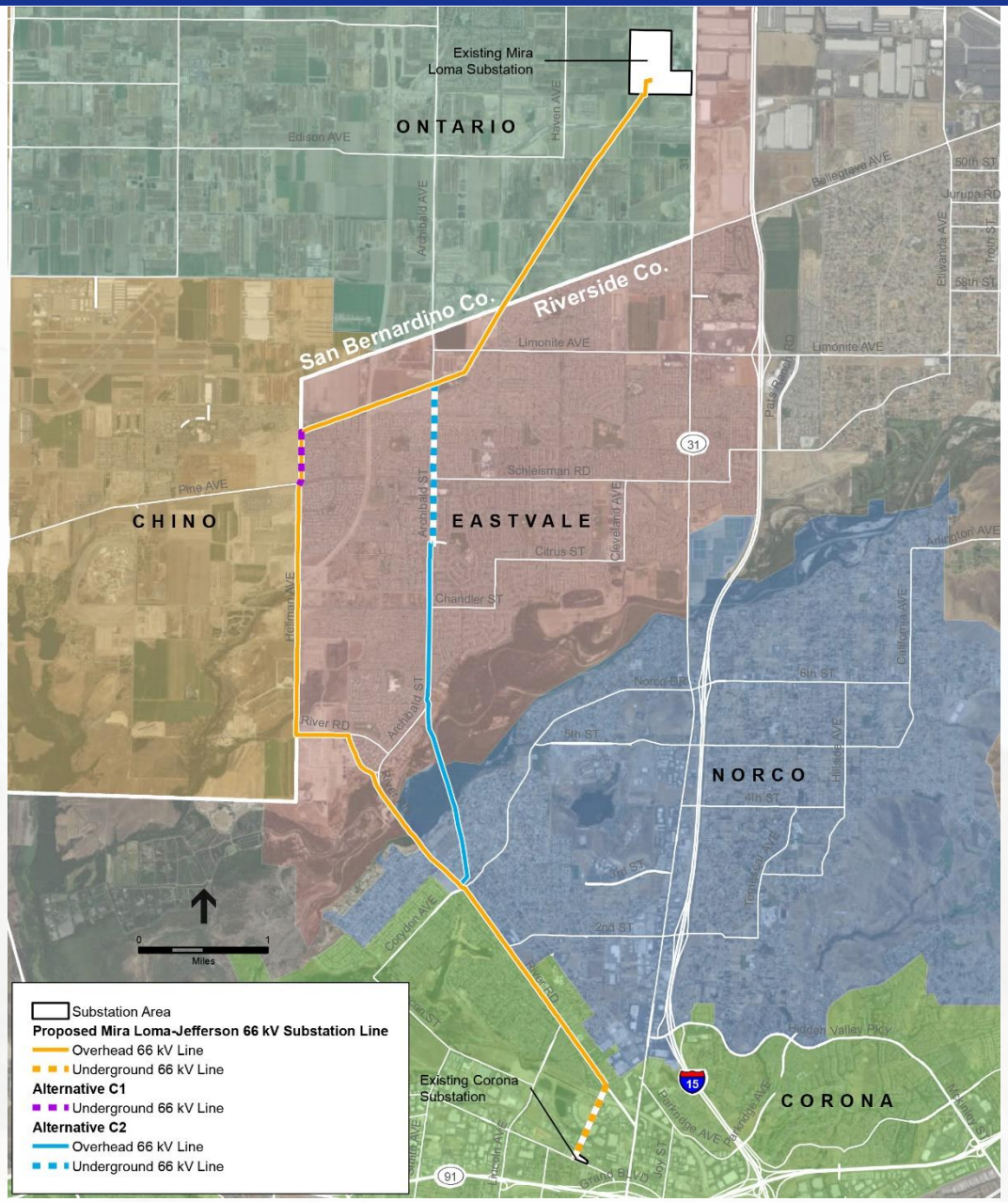
Alternative E1: Quarry Street 66 kV Source Lines Segment
and/or
Alternative E2: Underground Pedley 66 kV
and/or
Alternative E3: Southern 66 kV Source Lines Alignment

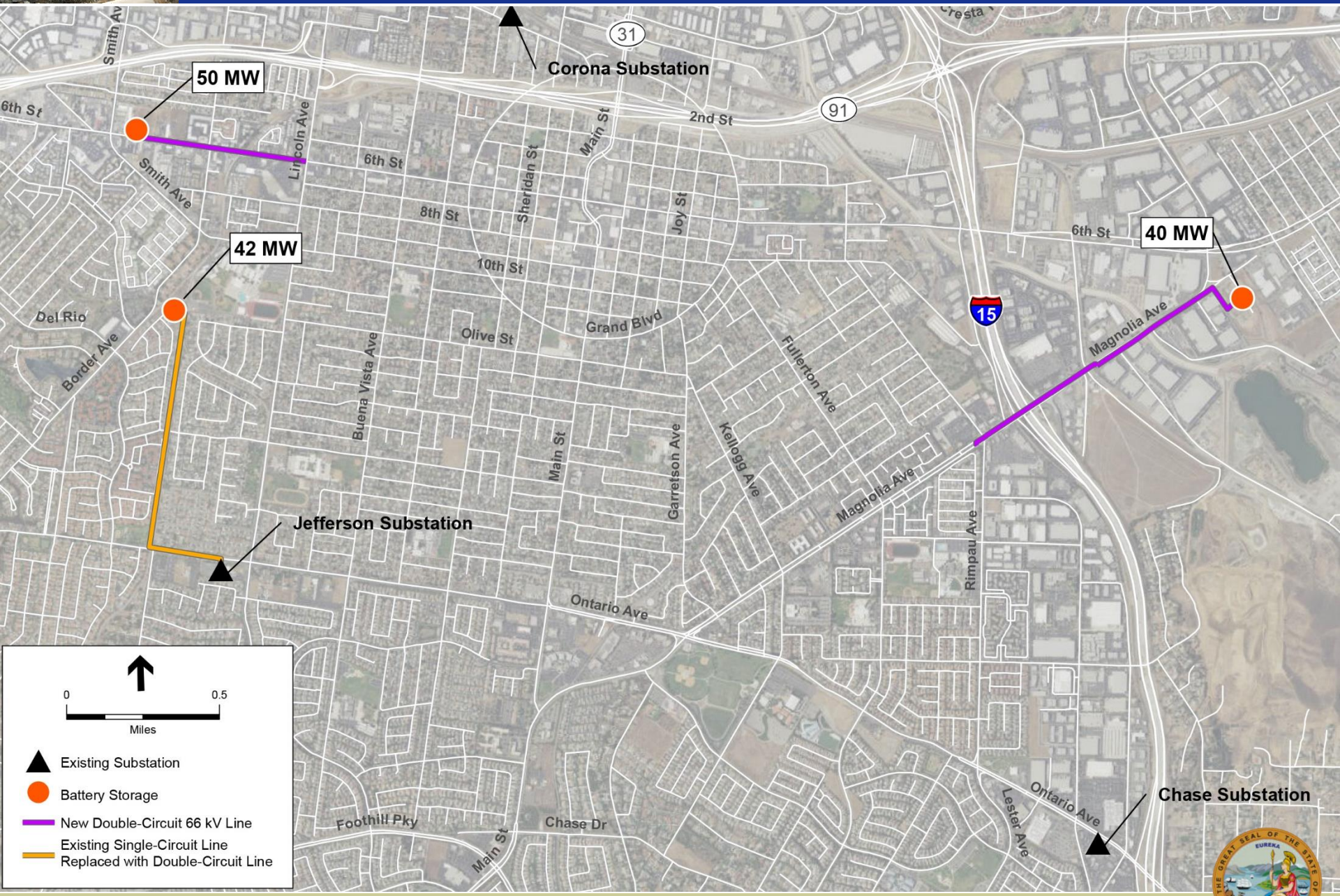
or

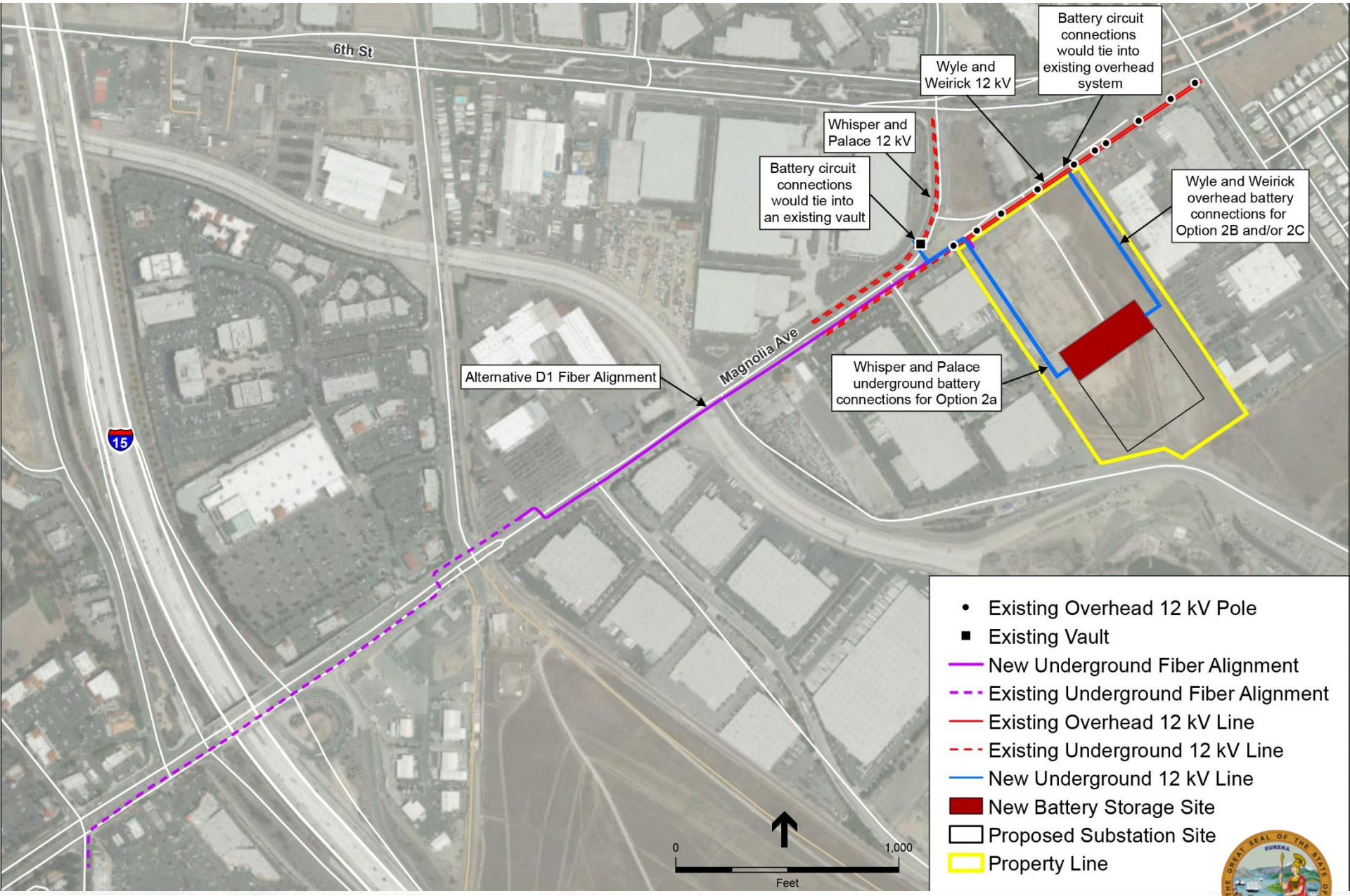
One or Both of the Following:

Alternative E3: Southern 66 kV Source Lines Alignment
and/or
Alternative E4: Databank 66 kV Source Lines Only

Alternatives Screening (cont.)




Corona Substation
50 MW
42 MW
40 MW
Jefferson Substation
Chase Substation
31
91
15
Smith Av
6th St
Smith Ave
Lincoln Ave
6th St
2nd St
Main St
Sheridan St
8th St
Joy St
10th St
Grand Blvd
Olive St
Del Rio
Border Ave
Buena Vista Ave
Main St
Garretson Ave
Kellogg Ave
Fullerton Ave
Magnolia Ave
Magnolia Ave
Rimpau Ave
Ontario Ave
Ontario Ave
Lester Ave
Foothill Pky
Chase Dr
Main St
Cresta
0
0.5
Miles
Existing Substation
Battery Storage
New Double-Circuit 66 kV Line
Existing Single-Circuit Line
Replaced with Double-Circuit Line


6th St
Magnolia Ave
15
Wyle and Weirick 12 kV
Battery circuit connections would tie into existing overhead system
Whisper and Palace 12 kV
Battery circuit connections would tie into an existing vault
Wyle and Weirick overhead battery connections for Option 2B and/or 2C
Alternative D1 Fiber Alignment
Whisper and Palace underground battery connections for Option 2a
0
1,000
Feet
Existing Overhead 12 kV Pole
Existing Vault
New Underground Fiber Alignment
Existing Underground Fiber Alignment
Existing Overhead 12 kV Line
Existing Underground 12 kV Line
New Underground 12 kV Line
New Battery Storage Site
Proposed Substation Site
Property Line

Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project

Corona Substation

Alternative D1
Battery Storage Site

Alternative D2

Railroad St
2nd St
Quarry St
Joy St
Sheridan
Grand Blvd
Fullerton Ave
Garretson Ave
Kellogg Ave
Rimpau Ave
6th St
Magnolia Ave
31
91
15

Substation Area

Proposed 66 kV Source Lines

- Overhead 66 kV Line
- Underground 66 kV Line

Alternative D1

- Overhead Telecommunication Line
- Underground Telecommunication Line
- Battery Storage Area

Alternative D2

- Overhead 66 kV Line- Optional Route to Alternative D2

Alternative E1

- Overhead 66 kV Line
- Underground 66 kV Line

Alternative E2

- Underground 66 kV Line

Alternative E3

- Overhead 66 kV Line

Alternative E4

- Overhead 66 kV Line
- Underground 66 kV Line
- Overhead Telecommunication Line
- Underground Telecommunication Line

0 0.5
Miles

Alternatives Screening (cont.)

Per CEQA Requirements, a “No Project” alternative scenario was also evaluated in the Draft EIR:

- Alternative A: No Project
  - The proposed Project would not be constructed. SCE would implement operating procedures to compensate for the anticipated shortfall in the supply of subtransmission voltage electric power for the Electric Needs Area.

Environmentally Superior Alternative, Draft EIR

- Environmentally Superior Alternative:
  - **Alternative A** (No Project) would result in the least environmental effects; however, per CEQA Guidelines Section 15126(e)(2), if the Environmentally Superior Alternative is the “no project” alternative, the EIR must also identify an environmentally superior alternative among the other alternatives.
  - **Alternative B** (Mira Loma-Jefferson 66 kV Subtransmission Line without Substation) would result in the next least environmental effects; however, the Distribution Service Objective would not be accomplished under Alternative B and as a result. Therefore, environmentally superior alternatives are identified among the other alternatives.

Environmentally Superior Alternative, Draft EIR (cont.)

- Environmentally Superior Alternative:
  - A combination of two alternatives are identified as the Environmentally Superior Alternative in the Draft EIR:
    - To meet the Subtransmission Service Objective: **Alternative C1**: Underground 66 kV Subtransmission Line along Hellman Avenue.
    - To meet the Distribution Service Objective: **Alternative D1**: 12 kV Distribution-Level Battery Storage.
  - Short-term significant air quality and noise impacts cannot be reduced to a less-than-significant, but these alternatives would eliminate the significant and unavoidable long-term aesthetics impacts that would be associated with the proposed Project.

Next Steps

- Notice of Availability was circulated on June 4, 2018, to solicit input on the Draft EIR from agencies and the public.
- This meeting is part of the comment process. The comment period **ends July 20th**.
  - All oral and written comments will be considered and incorporated into the Final EIR
- The Final EIR will be incorporated into the record of the Formal Proceeding for Application A.15-12-007, and a Proposed Decision will be issued for 30 days of comment.
- The CPUC will consider comments on the Proposed Decision, and then the five Commissioners will vote to adopt a Decision that either approves or denies the proposed Project or approves an alternative.
  - The same vote typically certifies the Final EIR as adequate, but this may occur prior to the final vote to determine the outcome of the Proposed Project.

Public Participation

- Environmental Review
  - Scoping
  - Draft EIR
- Formal Proceeding
  - The Administrative Law Judge assigned to the proceeding for Application A.15-12-007 is expected to proceed after issuance of the Final EIR.
  - A link for further details about the Formal Proceeding and associated documentation is provided on our CEQA Project website, here: http://www.cpuc.ca.gov/environment/info/esa/Circle_City/index.html
  - Contact the CPUC Public Advisor's office for further information about the Formal Proceeding at: public.advisor@cpuc.ca.gov

How to Comment on the Draft EIR

Mr. Robert Peterson
Circle City Project
c/o Environmental Science Associates
1425 N. McDowell Blvd, Suite 200
Petaluma, CA 94954
Phone: (707) 795-0926
E-mail: CircleCityEIR@esassoc.com

Website:
http://www.cpuc.ca.gov/environment/info/esa/Circle_City/index.html

Deadline: July 20, 2018

Public Comments

Comment Guidelines

- One person to speak at a time
- Please finish within the allotted time limit
- Be concise
- Stay on topic
- Support everyone's participation
- Respect others' opinions
- Comments will be recorded
- Written comments are encouraged

This page intentionally left blank

Appendix E

Final EIR Mailing List and Certificate of Service

TABLE 1
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A HARD COPY OF FINAL EIR VIA OVERNIGHT DELIVERY SERVICE

CONTACT NAME	TITLE OR DIVISION	AGENCY/ ORGANIZATION	STREET	CITY	STATE	ZIP CODE
Lead Agency/Applicant/Parties to the Proceeding						
Robert Peterson	Project Manager, Infrastructure Planning and Permit Branch	California Public Utilities Commission	300 Capital Mall	Sacramento	CA	95814
Chloe Lukins	Energy Safety and Infrastructure Branch	California Public Utilities Commission	505 Van Ness Avenue, Room 4102	San Francisco	CA	94102
Kimberly Kim	Division Administrative Law Judge	California Public Utilities Commission	505 Van Ness Avenue, Room 5117	San Francisco	CA	94102-3214
Joseph A. Abhulimen	Energy, Safety, and Infrastructure Branch	California Public Utilities Commission	505 Van Ness Avenue, Room 4209	San Francisco	CA	94102-3214
Andie Biggs	Energy Safety and Infrastructure Branch	California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
David Peck	President Picker	California Public Utilities Commission	505 Van Ness Avenue, Room 4108	San Francisco	CA	94102
Marion Peleo	Legal Division	California Public Utilities Commission	505 Van Ness Avenue, Room 4107	San Francisco	CA	94102
	Broadband, Policy, and Analysis Branch	California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
Noel Obiora	Legal Division	California Public Utilities Commission	505 Van Ness Avenue, Room 5121	San Francisco	CA	94102
Docket Clerk		California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
Matt Fagundes	Senior Technical Associate	Environmental Science Associates	1425 N. McDowell Boulevard, Suite 200	Petaluma	CA	94954
		California Energy Markets	425 Divisadero Street, Suite 303	San Francisco	CA	94117
Bernice Goldsmith	Project Analyst	Southern California Edison Company	2 Innovation Way, #390H	Pomona	CA	91768-2560
Tammy Jones	Senior Attorney	Southern California Edison Company	PO Box 800 2244 Walnut Grove Avenue	Rosemead	CA	91770
Case Administrator		Southern California Edison Company	8631 Rush Street	Rosemead	CA	91770
David Peffer	Attorney	City of Corona	915 L Street, Suite 1480	Sacramento	CA	95814
Donald C. Liddell	Attorney at Law	Douglass and Liddell	2928 2nd Avenue	San Diego	CA	92103

TABLE 1 (CONTINUED)
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A HARD COPY OF FINAL EIR VIA OVERNIGHT DELIVERY SERVICE

CONTACT NAME	TITLE OR DIVISION	AGENCY/ ORGANIZATION	STREET	CITY	STATE	ZIP CODE
Lead Agency/Applicant/Parties to the Proceeding (cont.)						
Scott Blaising	Counsel (City of Corona)	Braun Blaising McLaughlin & Smith PC	915 L Street, Suite 1480	Sacramento	CA	95814
Sherry Messner		M&E Development, LLC/Downs Energy	1296 Magnolia Avenue	Corona	CA	92879
John Higginbotham		City of Corona	400 South Vicentia Avenue	Corona	CA	92882
Library						
Norco Public Library			3954 Old Hamner Road	Norco	CA	92860
Eastvale Branch Library			7447 Scholar Way	Eastvale	CA	92880
Corona Public Library			650 D Main Street	Corona	CA	92882

TABLE 2
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A USB FLASH DRIVE OF FINAL EIR VIA UNITED STATES POSTAL SERVICE

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
State and Local Agencies						
California Department of Transportation, District 8	Office Chief Intergovernmental Review Community and Regional Planning	Mark Roberts, AICP	District 8 Planning (MS 722) 464 West 4th Street, 6th Floor	San Bernardino	CA	92401
South Coast Air Quality Management District	Program Supervisor	Lijin Sun, J.D.	21865 Copley Drive	Diamond Bar	CA	91765
City of Chino	Associate Planner	Kim Le	13220 Central Avenue	Chino	CA	91710
City of Corona	Braun Blaising McLaughlin & Smith PC	Scott Blaising	915 L Street, Suite 1480	Sacramento	CA	95814
City of Eastvale	Interim City Manager	Bryan Jones, PE, AICP	12363 Limonite Ave, Suite 910	Eastvale	CA	91752
City of Norco	Mayor	Ted Hoffman	2870 Clark Avenue	Norco	CA	92860
City of Ontario	Senior Planner	Richard Ayala	303 East "B" Street	Ontario	CA	91764
Riverside County Flood Control	Senior Flood Control Planner	Randy Sheppeard	1995 Market St	Riverside	CA	92501
San Bernardino County Department of Public Works	Planner III, Environmental Management Division	Patrick M. Egle (for M. Perry)	825 East Third Street	San Bernardino	CA	92415
Organizations						
Corona Chamber of Commerce	Chairman	John Weygandt	904 E. 6th Street	Corona	CA	92879
Chino Preserve Development Corporation	Vice President	Patrick Loy	1156 North Mountain Avenue PO BOX 670	Upland	CA	91785-0670
Gabrieleno Band of Mission Indians - Kizh Nation	Chairperson	Andrew Salas	P.O. Box 393	Corona	CA	91723
Rincon Band of Luiseno Indians	Tribal Historic Preservation Officer	Destiny Colocho	1 West Tribal Road	Valley Center	CA	92082
Individuals						
		Baxter Miller	310 North Joy Street	Corona	CA	92879
		Kristina Jovin	14971 Oakvale Circle	Eastvale	CA	92880
		Richard Monroe	2282 Santa Anita Road	Norco	CA	92860
		Dickie Simmons	7091 Ginko Court	Eastvale	CA	
		Kai Liu	7447 Silver Saddle Court	Eastvale	CA	92880

TABLE 2 (CONTINUED)
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A USB FLASH DRIVE OF FINAL EIR VIA UNITED STATES POSTAL SERVICE

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Jane Anderson	6465 Daffodil Court	Eastvale	CA	92880
		Andy Diaz	2102 Santa Anita Road	Norco	CA	92860
		Robert Peak	2110 Santa Anita Road	Norco	CA	92860
		Jack and Sherry Vandeman	2120 Santa Anita Road	Norco	CA	92860
		Sayeh and Esmo Koetsier	2262 Santa Anita Road	Norco	CA	92860
		James Alderson	2170 Santa Anita Road	Norco	CA	92860
		Steve Tuthill	13731 Hidden River	Eastvale	CA	92880
		Jay Ballesteros	14911 Brooktree Street	Eastvale	CA	92880
		Brandon Plott (Councilmember City of Eastvale)	12363 Limonite Avenue, Suite 910	Eastvale	CA	91752
		Larry and Colleen Powers	14930 Murwood Lane	Eastvale	CA	92880
		Tom Eifler	2190 Santa Anita Road	Eastvale	CA	92860
		Fidencio Zepeda	14950 Brooktree Street	Eastvale	CA	92880
		Rushbabh Shah	14971 Brooktree Street	Eastvale	CA	92880
		Wendy Lacambra	14984 Franklin Lane	Eastvale	CA	92880
		Nicole Jirsa	2242 Santa Anita Road	Norco	CA	92860
		Gordy and Susie	2272 Santa Anita Road	Norco	CA	92860
		Todd Longbrate	2279 Santa Anita Road	Norco	CA	92860
		Jerry Flores	2212 Santa Anita Road	Norco	CA	92860
		Taiana Kinley Reyes	2384 Santa Anita Road	Norco	CA	92860
		Francisco Reyes	2384 Santa Anita Road	Norco	CA	92860
		Aliyah Hernandez	2394 Santa Anita Road	Norco	CA	92860
		Lisa Boschma	2211 Santa Anita Road	Norco	CA	92860
		Shane Porter	2161 Santa Anita Road	Norco	CA	92860
		Sheila Schulze	2107 Santa Anita Road	Norco	CA	92860

TABLE 2 (CONTINUED)
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A USB FLASH DRIVE OF FINAL EIR VIA UNITED STATES POSTAL SERVICE

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Robert Fletcher	2239 Santa Anita Road	Norco	CA	92860
		Edgar Rodriguez	2191 Santa Anita Road	Norco	CA	92860
		Angla Halford	2171 Santa Anita Road	Norco	CA	92860
		Mark Adler	2130 Santa Anita Road	Norco	CA	92860
		Maria Espinoza	2131 Santa Anita Road	Norco	CA	92860
		Jim and Patt Pollard	2180 Santa Anita Road	Norco	CA	92860
		Mary Pat Boldt	2160 Santa Anita Road	Norco	CA	92860
		Cesar Valadez	2354 Santa Anita Road	Norco	CA	92860
		Stephen Boone	2344 Santa Anita Road	Norco	CA	92860
		Tim Hagen	2140 Santa Anita Road	Norco	CA	92860
		Troy Hall	2364 Santa Anita Road	Norco	CA	92860
		Andy Santos	2334 Santa Anita Road	Norco	CA	92860
		Kathy Wilson	2249 Santa Anita Road	Norco	CA	92860
		Kim Kuhn	2269 Santa Anita Road	Norco	CA	92860
		Russ Titsworth	2150 Santa Anita Road	Norco	CA	92860
		Karen Spiegel	400 South Vicencia	Corona	CA	92882
		Dami Kim	12363 Limonite Avenue, Suite 910	Eastvale	CA	91752
		Ralph Dilisio	7828 Shoreham Street	Eastvale	CA	
		Chery Dilisio	7828 Shoreham Street	Eastvale	CA	
		Andrea Hove	14095 Lemon Valley	Eastvale	CA	
		Jorge Zavala	12363 Limonite Avenue, Suite 910	Eastvale	CA	91752
		Qian Li	7459 Silver Saddle Court	Eastvale	CA	92880
		Jessica Pippin	14919 Coleman Court	Eastvale	CA	

TABLE 2 (CONTINUED)
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A USB FLASH DRIVE OF FINAL EIR VIA UNITED STATES POSTAL SERVICE

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Maggie Wang	7468 Silver Saddle Court	Eastvale	CA	92880
		Melody Wang	7468 Silver Saddle Court	Eastvale	CA	92880
		Darren Edgington	40810 County Center Drive #200	Temecula	CA	92591

TABLE 3
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS
SENT ELECTRONIC MAIL WITH PROJECT WEBPAGE URL TO DOWNLOAD FINAL EIR

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME
Agua Caliente Band of Cahuilla Indians THPO	Director of Historic Preservation	Patricia Garcia Plotkin
Circle City Task Force		Wentworth Anderson Speake
Corona Historic Preservation Society		
Native American Heritage Commission	Associate Governmental Program Analyst	Gayle Totton
		Maggie Wang
		Lauren Pavlock
		Scott Detki
		Brittney Detki
		Norene Eifler
		Natalie George
		Tom Eifler (and the citizens of Norco)
	Chamber of Commerce Executive Assistant	Bryan Hartson
		Michael Bass
		Jonathan Medina
		Enswins Cordero

Certificate of Service

I, Stan Williams, of Phoenix1, certify that we have on this date caused the following:

Publication of the Final EIR for Southern California Edison's (SCE) Application to the California Public Utilities Commission (CPUC) pursuant to General Order (GO) 131-D to construct and operate the Circle City Substation and Mira Loma-Jefferson 66 kilovolt Subtransmission Line Project (A.15-12-007). Hard copies of the Final EIR are to be served by overnight delivery service to the Lead Agency (the CPUC), the project Applicant (SCE), other parties to the Proceeding, and area libraries. A USB flash drive of the Final EIR is to be served by United States Postal Service (USPS) mail to listed parties on the CPUC service list; agencies, organizations, and individuals that submitted comments on the Draft EIR. A comprehensive mailing list is included in Appendix E of the Final EIR.

I declare under penalty of perjury pursuant to the laws of the State of California that the foregoing is true and correct.

Executed on 12/3/18 in San Francisco, California.

Stan Williams

This page intentionally left blank

Appendix F
Mitigation Monitoring and Reporting Program

This page intentionally left blank

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

MITIGATION MONITORING AND REPORTING PROGRAM

SOUTHERN CALIFORNIA EDISON'S
CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV SUBTRANSMISSION LINE PROJECT (APPLICATION NO. A.15-12-007)

INTRODUCTION

This document describes the mitigation monitoring and reporting program (MMRP) for ensuring the effective implementation of the mitigation measures required for approval by the California Public Utilities Commission (CPUC, or Commission) of the application by Southern California Edison (SCE) to construct, operate, and maintain the Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project (Project). The MMRP includes all applicable measures proposed by SCE (applicant proposed measures, APMs, not superceded by mitigation measures), and all mitigation measures identified by the CPUC to reduce potentially significant impacts to less than significant.

If the Project and/or Project alternative(s) is approved, this document would serve as a self-contained general reference for the MMRP adopted by the Commission for the Project and/or Project alternative(s). If the project is approved and this MMRP is adopted by the CPUC, a detailed Mitigation Monitoring, Reporting, and Compliance Program (MMRCP) would be developed. The MMRCP would be the mechanism for CPUC implementation of the MMRP.

California Public Utilities Commission – MMRCP Authority

The California Public Utilities Code in numerous places confers authority upon the CPUC to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is the standard practice of the CPUC, pursuant to its statutory responsibility to protect the environment, to require that mitigation measures stipulated as conditions of approval be implemented properly, monitored, and reported on. In 1989, this requirement was codified statewide as Section 21081.6 of the Public Resources Code. Section 21081.6 requires a public agency to adopt a mitigation monitoring or reporting program when it approves a project that is subject to preparation of an EIR and where the EIR for the project identifies potentially significant environmental effects. California Environmental Quality Act (CEQA) Guidelines Section 15097 was added in 1999 to further clarify agency requirements for mitigation monitoring and reporting.

The purpose of a MMRCP is to ensure that measures adopted to mitigate or avoid significant impacts of a project are implemented. The CPUC views the MMRP as a working guide to facilitate not only the implementation of mitigation measures by the project proponent, but also the monitoring and reporting activities of the CPUC and any monitors it may designate.

The Commission will address its responsibility under Public Resources Code Section 21081.6 when it takes action on SCE's application. If the Commission approves the application, it will also adopt this MMRP that includes the mitigation measures as well as the Applicant Proposed Measures (APMs), implementation of which will ultimately be made a condition of approval by the Commission.

Because the CPUC must decide whether or not to approve the SCE application and because the approved project may cause either direct or reasonably foreseeable indirect effects on the environment, CEQA requires the CPUC to consider the potential environmental impacts that could occur as the result of its decisions and to consider mitigation for any identified significant environmental impacts.

If the CPUC approves SCE's application for authority to construct and operate the approved project, SCE would be responsible for implementation of any mitigation measures governing both construction and future operation of the approved project. Though other state and local agencies would have permit and approval authority over some aspects of construction of the proposed substation and subtransmission line, the CPUC would continue to act as the lead agency for monitoring compliance with all mitigation measures required by this EIR. All approvals and permits obtained by SCE would be submitted to the CPUC for mitigation compliance prior to commencing the activity for which the permits and approvals were obtained.

In accordance with CEQA, the CPUC reviewed the impacts that would result from approval of the application. The activities considered include the construction and operation of the Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project to enhance reliability and operational flexibility. The CPUC review concluded that Project implementation could result in significant unmitigable impacts on aesthetics, air quality, and noise. All other potential impacts would be less than significant or would be mitigated to less-than-significant levels. The CPUC has included the stipulated mitigation measures as well as SCE's APMs as conditions of approval of the applications and has circulated a Draft EIR.

The attached EIR presents and analyzes potential environmental impacts that would result from construction, operation, and maintenance of the approved project, and proposes mitigation measures as appropriate. Based on the EIR, approval of the application would have no impacts or less than significant impacts in the following areas:

- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Utilities and Service Systems

The following environmental issue areas were determined to have potentially significant impacts that would be reduced to less-than-significant levels with mitigation:

- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Energy Conservation
- Geology and Soils
- Hazards and Hazardous Materials
- Recreation
- Transportation and Traffic

The EIR indicates that approval of the application would result in significant unmitigable impacts in the areas of:

- Aesthetics
- Air Quality
- Noise

Roles and Responsibilities

As the lead agency under CEQA, the CPUC is required to monitor this project to ensure that the required mitigation measures and APMs are implemented. The CPUC will be responsible for ensuring full compliance with the provisions of this MMRP and has primary responsibility for implementation of the monitoring program. The purpose of the monitoring program is to document that the mitigation measures required by the CPUC are implemented and that mitigated environmental impacts are reduced to the level identified in the Program. The CPUC has the authority to halt any activity associated with the approved project if the activity is determined to be a deviation from the approved project or the adopted mitigation measures.

The CPUC may delegate duties and responsibilities for monitoring to other mitigation monitors or consultants as deemed necessary. The CPUC will ensure that the person(s) delegated any duties or responsibilities are qualified to monitor compliance.

The CPUC, along with its mitigation monitor, will ensure that any minor project refinement process, which will be designed specifically for the approved project, or deviation from the procedures identified under the monitoring program is consistent with CEQA requirements; no project deviation will be approved by the CPUC if it creates new significant environmental impacts. As defined in this MMRP, any deviation should be strictly limited to minor project refinements that will not trigger other permit requirements, that does not increase the severity of an impact or create a new impact, and that clearly and strictly complies with the intent of the mitigation measure. A refinement to the approved project that has the potential for creating significant environmental effects will be evaluated to determine whether supplemental CEQA review is required. Any proposed deviation from the approved project and adopted mitigation measures, including correction of such deviation, shall be reported immediately to the CPUC and the mitigation monitor assigned to the construction for their review and CPUC approval. In some cases, a deviation also may require approval by a CEQA responsible agency.

Enforcement and Responsibility

The CPUC is responsible for enforcing the procedures for monitoring through the environmental monitor. The environmental monitor shall note problems with monitoring, notify appropriate agencies or individuals about any problems, and report the problems to the CPUC. The CPUC has the authority to halt any construction, operation, or maintenance activity associated with the approved project if the activity is determined to be a deviation from the approved project or adopted mitigation measures. The CPUC may assign its authority to their environmental monitor.

Mitigation Compliance Responsibility

SCE is responsible for successfully implementing all of the adopted APMs and mitigation measures in this MMRP. The MMRP contains criteria that define whether mitigation is successful. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Additional mitigation success thresholds will be established by applicable agencies with jurisdiction through the permit process and through the review and approval of specific plans for the implementation of mitigation measures.

SCE shall inform the CPUC and its mitigation monitor in writing of any mitigation measures that are not or cannot be successfully implemented. The CPUC, in coordination with its mitigation monitor, will assess whether alternative mitigation is appropriate and specify to SCE the subsequent actions required.

Dispute Resolution

The following procedure will be observed for dispute resolution between CPUC staff and the applicant:

- Disputes and complaints should be directed to the CPUC's designated Project Manager for resolution.
- Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the approved project.

General Monitoring Procedures

Mitigation Monitor

Many of the monitoring procedures will be conducted during the construction phase of the approved project. The CPUC and the mitigation monitor are responsible for integrating the mitigation monitoring procedures into the construction process in coordination with SCE. To oversee the monitoring procedures and to ensure success, the mitigation monitor assigned to the construction must be on site during that portion of construction that has the potential to create a significant environmental impact or other impact for which mitigation is required. The mitigation monitor is responsible for ensuring that all procedures specified in this MMRP are followed.

Construction Personnel

A key feature contributing to the success of mitigation monitoring will be obtaining the full cooperation of construction personnel and supervisors. Many of the mitigation measures and APMs require action on the part of the construction supervisors or crews for successful implementation. To ensure success, the following actions, detailed in specific mitigation measures included in this MMRP, will be taken:

- SCE shall require all contractors to comply with the conditions of project approval, including all applicable APMs and mitigation measures.
- One or more pre-construction meetings will be held to inform all and train construction personnel about the requirements of the MMRP.
- A written summary of mitigation monitoring procedures will be provided to construction supervisors for all APMs mitigation measures requiring their attention.

General Reporting Procedures

Site visits and specified monitoring procedures performed by other individuals will be reported to the mitigation monitor assigned to construction. A monitoring record form will be submitted to the mitigation monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress tracked by the mitigation monitor. A checklist will be developed and maintained by the mitigation monitor to track all procedures required for each mitigation measure and to ensure that the timing specified for the procedures is adhered to. The mitigation monitor will note any problems that may occur and take appropriate action to rectify the problems. SCE shall provide the CPUC with written quarterly reports of the approved project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the approved project. Quarterly or annual reports shall be required as long as mitigation measures are applicable.

Public Access to Records

The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports will be made available for public inspection by the CPUC on request. The CPUC and SCE will develop a filing and tracking system.

Condition Effectiveness Review

In order to fulfill its statutory mandates to mitigate or avoid significant effects on the environment and to design a MMRP to ensure compliance during approved project implementation (Pub. Res. Code §21081.6):

- The CPUC may conduct a comprehensive review of conditions which are not effectively mitigating impacts at any time it deems appropriate, including as a result of the Dispute Resolution procedure outlined above; and

- If in either review, the CPUC determines that any conditions are not adequately mitigating significant environmental impacts caused by the approved project, or that recent proven technological advances could provide more effective mitigation, then the CPUC may impose additional reasonable conditions to effectively mitigate these impacts.

These reviews will be conducted in a manner consistent with the CPUC's rules and practices.

Mitigation Monitoring and Reporting Program

The table attached to this MMRP presents a compilation of APMs and mitigation measures in the EIR. The purpose of the table is to provide a single comprehensive list of APMs, mitigation measures, monitoring and reporting requirements, and timing.

TABLE F-1
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Aesthetics				
APM-AES-01: Construction Lighting	**APM-AES-01: Construction Lighting**. If temporary construction lighting is required, SCE would use shielded construction light fixtures and lighting would be directed away from nearby residences.	SCE to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	During all applicable phases of construction activities.
Impact 4.1-1: The Project could adversely affect scenic vistas.	**Mitigation Measure 4.1-1:** SCE and/or its contractors shall use subtransmission line conductors that are non-specular and non-reflective and insulators that are non-reflective.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to monitor compliance.	During all phases of the subtransmission line components of the project.
Impact 4.1-3: Operation of the Project could substantially degrade the existing visual character or quality of the site and its surroundings.	Implement Mitigation Measure 4.1-1.	See Mitigation Measure 4.1-1, above.		
Impact 4.1-4: Construction and operation of the Project would create new sources of light and/or glare that could adversely affect day or nighttime views in the area.	Implement Mitigation Measure 4.1-1.	See Mitigation Measure 4.1-1, above.		
Agriculture and Forestry Resources				
Impact 4.2-1: The Project would convert Farmland to non-agricultural use.	**Mitigation Measure 4.2-1:** Prior to commencement of construction activities, SCE shall obtain permanent agricultural conservation easements at a one to one (1:1) ratio for Prime Farmland or Unique Farmland to be permanently converted by the Project. Conservation easements shall be on land within San Bernardino County or Riverside County of at least equal quality and size as land disturbed by the Project, as determined by the CPUC. Mitigation via agricultural conservation easement shall be satisfied under the following conditions: 1. SCE shall acquire farmland and shall establish an easement for the portion of the land that will no longer be used for agricultural land equal to the acreage converted. SCE shall provide evidence to the CPUC documenting the easement acquisition prior to the commencement of construction activities on the Farmland to be converted. The acquired easement shall be in an area designated for long-term future agricultural use; or	SCE to implement measures as defined.	SCE to provide evidence to the CPUC documenting easement acquisition and fee payment, as applicable. CPUC to inspect for compliance.	Prior to commencement of construction activities on the Farmland to be converted.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Agriculture and Forestry Resources (cont.)				
Impact 4.2-1 (cont.)	2. SCE shall pay a fee equal to or greater than the value of a previous farmland conversion transaction in the planning area plus the estimated cost of legal appraisal and other costs, including staff time, to acquire property for agricultural mitigation. The fee shall be used for farmland mitigation purposes, with priority given to lands with prime agricultural soils and habitat value. SCE shall provide evidence to the CPUC documenting fee payment prior to the commencement of construction activities on the Farmland to be converted.			
Air Quality				
Impact 4.3-1: Construction activities would generate pollutant emissions that would conflict or obstruct implementation of the applicable air quality plan.	**APM AIR-01: Fugitive Dust.** During construction, surfaces disturbed by construction activities would be covered or treated with a dust suppressant until completion of activities at each site of disturbance. On-site unpaved roads and off-site unpaved access roads utilized during construction within the Project area would be effectively stabilized (e.g., using water or chemical stabilizer/suppressant) to control dust emissions. On-road vehicle speeds on unpaved roadways would be restricted to 15 miles per hour.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to inspect for compliance.	During all phases of construction activities.
Impact 4.3-2: Construction activities would generate pollutant emissions that would contribute substantially to an existing or projected air quality violation.	**Mitigation Measure 4.3-2a: Fugitive Dust Controls.** The following fugitive dust control measures shall be implemented during the construction phase by SCE and/or its construction contractors: • Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities. • Use a gravel apron on unpaved truck exit routes, 25 feet long by road width, to reduce mud/dirt trackout; • Graded and/or excavated inactive areas of the construction site shall be monitored by a third party hired by SCE at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally-safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor for compliance.	During all phases of construction activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Air Quality (cont.)				
Impact 4.3-2 (cont.)	further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally-safe dust suppressants, to prevent excessive fugitive dust; • During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard off site. Dust emissions that are visible off site would be considered as one factor indicating a potential nuisance or hazard. The site superintendent/supervisor shall use his/her discretion in conjunction with the SCAQMD in determining when winds are excessive; • Require paved streets that adjoin unpaved roads where vehicles would be entering and exiting to be swept by Rule 1186 compliant PM10 efficient vacuum units (14-day frequency); • All trucks hauling dirt, sand, or other loose materials are to be tarped with a fabric cover, with the exception of trucks that are not designed to be tarped, such as belly dumps, and maintain a freeboard height of at least 12 inches. Water shall be applied to the truck loads hauling dirt, sand, or other loose materials that are not designed to be tarped prior to leaving the site; • Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.			
	Mitigation Measure 4.3-2b: Construction Equipment Exhaust Reductions. For all diesel-fueled off-road construction equipment, SCE shall make a good faith effort to use available construction equipment that meets Tier 4, the highest USEPA-certified tiered emission standard. An Exhaust Emissions Control Plan that identifies each off-road unit's certified tier specification and Best Available Control Technology (BACT) shall be submitted to the CPUC for review and approval at least 30 days prior to commencement of construction activities. Construction activities cannot commence until the Plan has been approved. For all	SCE to submit Plan to CPUC for approval and implement approved Plan as defined.	CPUC mitigation monitor to inspect that the Plan is implemented as required.	Submit Plan to CPUC prior to commencement of construction activities. Implement approved plan during all phases of construction activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Air Quality (cont.)				
Impact 4.3-2 (cont.)	pieces of equipment that would not meet Tier 4 emission standards, the Exhaust Emissions Control Plan shall include recent documentation from at least two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment. In the event that SCE is not able to identify each piece of equipment 30 days before commencement of construction activities due to unforeseeable construction equipment availability, SCE shall maintain an equipment log that lists the equipment identification number, certified tier and BACT specification, California Air Resources Board (CARB) or South Coast Air Quality Management District (SCAQMD) operating permit specifications, and documents availability of Tier 4 equipment from rental companies, as applicable, for each piece of diesel-fueled off-road construction equipment that is not identified in the Exhaust Emissions Control Plan due to unforeseeable availability issues. The log shall be submitted to the CPUC for review and approval at least 1 week before the commencement of construction activities. Construction shall not commence until SCE confirms that all diesel equipment are included in the Exhaust Emissions Control Plan or until CPUC approves the equipment log. An updated log shall be submitted to the CPUC at least 2 days prior to when any new equipment is brought to or removed from a project work site. New equipment cannot operate at the site until the updated equipment log has been approved by the CPUC.			
Impact 4.3-4: Construction activities would result in emissions of PM10 and NOx that would be cumulatively considerable.	Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).	See Mitigation Measures 4.3-2a and 4.3-2b, above.		
Impact 4.3-6: Construction activities would generate emissions of criteria pollutants and precursors, potentially exposing sensitive receptors to harmful pollutant concentrations.	Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).	See Mitigation Measures 4.3-2a and 4.3-2b, above.		

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Air Quality (cont.)				
Impact 4.3-7: Construction activities would generate emissions of Toxic Air Contaminants, potentially exposing sensitive receptors to harmful pollutant concentrations.	**Mitigation Measure 4.3-7: Use of Tier-3 Engines at the Circle City Substation Site.** SCE (and/or its construction contractor(s)) shall ensure that at all diesel-powered equipment used during construction activities at Circle City Substation meets at least USEPA-certified Tier 3 emissions standards, or is otherwise equipped with Level 3 diesel particulate filters (DPFs). An initial listing that identifies each off-road unit's certified tier specification and/or DPF status to be operated at the Circle City Substation shall be submitted to the CPUC for review and approval prior to commencement of construction activities at the Circle City Substation site. Construction activities at the Circle City Substation site shall not commence until the equipment listing has been approved by the CPUC. As SCE requires new or replacement construction equipment at the Circle City Substation site, SCE shall submit verification of the certified engine tier or Level 3 DPF retrofit prior to use at the site.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	The list will be provided to CPUC prior to commencement of construction activities at the Circle City Substation site. Only listed equipment will be used at the Circle City Substation site during construction.
Impact 4.3-8: Construction activities could expose local sensitive receptors to *Coccidioides immitis* spores.	Implement Mitigation Measure 4.3-2a (Fugitive Dust Controls).	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	Prior to commencement of construction activities, and during all phases of construction activities.
Biological Resources				
General Biological Resources	**APM BIO-01: Implement Biological Monitoring.** Biological Monitors would be utilized during Project construction within areas encompassing sensitive biological resources or habitats suitable for any special-status species. The Biological Monitors in coordination with the SCE Lead Biologist would be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and unique resources are avoided to the extent feasible. Biological Monitors would flag the boundaries of areas where activities need to be restricted to protect native plants and wildlife and/or special-status species. These restricted areas would be monitored for their protection during construction. If non-listed sensitive fauna are found within the impact area and could be harmed, the Biological Monitor would relocate the individual out of the Project impact area. If listed species are found within the impact area, only a biologist with the appropriate permit to handle that species would be allowed to relocate the individual. The Biological Monitor would have the authority to suspend any operation that is, in the qualified biologist's opinion, not consistent with regulations or approved mitigation plans related to the protection of biological resources.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	During all phases of construction activities within areas encompassing sensitive biological resources or habitats.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Plants	**APM BIO-02: Avoid, Minimize, and/or Mitigate Impacts to Special-Status Plant Species.** If any special-status plant species are discovered within the impact area, the Project impact boundary would be adjusted to avoid impacts on observed special-status plant species unless the adjustment would impact worker or public safety. If avoidance is not possible, a qualified biologist would prepare and implement a mitigation plan, which would include a detailed description of the appropriateness of the mitigation site, monitoring requirements, and annual reporting requirements. Measures may involve soil salvage, seed collection, and/or transplantation to establish the species in a suitable mitigation site. Should SCE opt to participate in the Western Riverside County Multi Species Habitat Conservation Plan (MSHCP) for areas within Riverside County and for locations with positive survey results for narrow-endemic plant species, 90 percent of those portions of the property that provide for long-term conservation value would be avoided until it is demonstrated that conservation goals for the particular species are met. If the 90-percent threshold cannot be met, SCE would prepare the mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation (DBESP) document. The Regional Conservation Authority (would request U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on relevant biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and the CDFW. It should also be noted that, assuming all focused plant surveys are current at the time of the Participating Special Entity (PSE) and DBESP review, any MSCHP-covered plant species not observed during surveys, but is observed at a later date prior to or during construction, would not require additional mitigation. *Applicable to*: Mira Loma Substation, Corona Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	Prior to commencement of construction activities, and during all phases of construction activities at Mira Loma Substation, Corona Substation, the Circle City Substation site, Mira Loma-Jefferson 66 kV the Subtransmission Line alignment, staging yards, access roads, guard structures, and stringing sites.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Invertebrates	**APM BIO-03: Avoid, Minimize, and/or Mitigate Impacts to Fairy Shrimp.** Impacts to listed fairy shrimp would be avoided to the extent feasible. Habitat areas with listed fairy shrimp would be marked as "off limits" in construction plans and/or maps and in the field. Should SCE opt to participate in the Western Riverside County MSHCP, pursuant to Section 6.1.2 of the MSHCP and/or if the Project design is determined to impact vernal pool resources, avoidance and minimization measures would be implemented in accordance with the species-specific objectives for Riverside fairy shrimp and vernal pool fairy shrimp. If avoidance is not feasible, an alternative that minimizes direct and indirect effects to vernal pools and associated functions and values would be selected. Those impacts that are unavoidable would be mitigated such that the lost functions and values would be replaced, as set forth under a DBESP. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW. It should also be noted that, assuming all fairy shrimp surveys are current and have been conducted pursuant to approved protocols at the time of the PSE and DBESP review, any MSHCP-covered fairy shrimp species not observed during surveys, but which are observed at a later date prior to or during construction, would not require additional mitigation. For areas within San Bernardino County, or if SCE opts out of the MSHCP in Riverside County, SCE would prepare a Habitat Conservation Plan (HCP) and seek take authorization through Section 7 or Section 10 of the FESA for impacts to listed fairy shrimp. Prior to construction, SCE would obtain a Biological Opinion issued from the USFWS authorizing the removal of applicable resources (i.e., listed fairy shrimp habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts. *Applicable to*: Mira Loma-Jefferson 66 kV Subtransmission Line Route.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	Prior to commencement of construction activities, and during all phases of construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Invertebrates	**APM BIO-04: Avoid, Minimize, and/or Mitigate Impacts to Delhi Sands Flower-Loving Fly.** Impacts to DSFF would be avoided to the extent practicable. Should avoidance be infeasible, SCE would seek take authorization through Section 7 or Section 10 of the FESA for impacts to occupied habitat of DSFF in San Bernardino County, or if SCE did not opt to become a PSE in the MSHCP in Riverside County. Prior to construction, SCE would prepare an HCP and seek a Biological Opinion issued from the USFWS that would authorize the removal of applicable resources (i.e., DSFF habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts. Should SCE opt to participate in the MSHCP, and if DSFF are found full avoidance through on-site preservation would be preferred. However, should on-site preservation be infeasible, purchase of suitable DSFF habitat at a 3:1 ratio in specifically designated areas could be required by the RCA. *Applicable to*: Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yard at the north end of the study area (portions that encompass Delhi series soils and that would be within the SCE Ontario Recovery Unit).	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	Prior to commencement of construction activities, and during all phases of construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment and at the staging yard at the north end of the study area.
Special Status Fish Species	**APM BIO-05: Avoid or Minimize Impacts to Special-Status Fish Species.** Should Project work occur within open water (i.e., in the Santa Ana River), impacts to special-status fish species would be avoided to the extent feasible. Should SCE opt to participate in the MSHCP, avoidance/ minimization measures are not specifically required by the MSHCP. Should SCE not opt to participate in the MSHCP, the following avoidance/minimization measures shall be required to ensure that special-status fish species are not present within the construction area: • Work would be conducted during the dry season when there would be less potential to impact special-status fish species. • Prior to the initiation of construction activities within the Santa Ana River, barrier nets would be installed upstream and downstream from the work area in open water, allowing sufficient space for construction crews to operate. These nets are intended to exclude fish from the work area. • Any fish that may appear inside the netted area after the barrier nets are established would be captured and relocated outside the work area by a qualified Biologist.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to monitor compliance.	Prior to commencement of construction activities, and during all phases of construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Fish Species (cont.)	• Daily monitoring of the nets would be performed to ensure the nets are in-place and free of debris. *Applicable to*: Mira Loma-Jefferson 66 kV Subtransmission Line Route.			
Special Status Bird Species	**APM BIO-06: Avoid, Minimize, and/or Mitigate Impacts to Least Bell's Vireo.** For areas in Riverside County, SCE may choose to mitigate potential impacts to the least Bell's vireo and the western yellow billed cuckoo by participation in the Western Riverside County MSHCP. SCE would prepare a DBESP to cover permanent impacts that would include conservation recommendations for least Bell's vireo and western yellow billed cuckoo pursuant to the MSHCP. The DBESP would also include a discussion of avoidance and minimization of temporary impacts (i.e., exclusion buffers during construction). The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" as well as DBESP approval. For areas within San Bernardino County, or if SCE opts out of the Western Riverside MSHCP, temporary and permanent impacts to least Bell's vireo, western yellow billed cuckoos, and their habitat would be mitigated by obtaining a take permit under the FESA and CESA. The conditions of the take permit would include acreages of disturbance, mitigation ratios for permanent and temporary disturbance, locations for restoration and/or potential mitigation banks for payment. Conservation recommendations may include the following at the discretion of the USFWS: • In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, SCE would conduct non-protocol preconstruction clearance surveys no more than 7 days prior to construction to determine the location of nests and territories. • In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, a buffer area around active nest(s) would be established by the SCE biologist and provided to FWS and CDFW for concurrence. The buffer would be established based on construction activities, potential noise levels and behavior of the species. • Construction activities in occupied habitat for the least Bell's vireo and western yellow billed cuckoo would be monitored by a Qualified Biologist.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities (as outlined in APM BIO-06), and during all phases of construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Bird Species (cont.)	*Applicable to*: Mira Loma-Jefferson 66 kV Subtransmission Line Route.			
Special Status Vegetation	**APM BIO-07: Avoid and/or Minimize Impacts to Special-Status Vegetation – Non-Riparian.** Impacts to special-status vegetation communities that may support special-status species and provide foraging habitat for sensitive raptors and other bird species would be avoided to the extent feasible. Non-riparian special-status vegetation, which includes Riversidean sage scrub, would be marked as "off limits" in construction plans and/or maps, and flagged prior to construction by a qualified Biological Monitor. If significant impacts to special-status vegetation are unavoidable, mitigation may be necessary depending on the quality of vegetation and the ability to support habitat for special-status species. Should SCE opt to participate in the Western Riverside County MSHCP, impacts to special-status vegetation communities within Riverside County are fully covered through payment of mitigation fees. Should SCE choose to opt out of the MSHCP PSE process, a restoration plan would be prepared in consultation with the USFWS and CDFW. The restoration plan would include, but is not limited to, identification of responsible parties, restoration details and schedule, monitoring and maintenance, and success criteria. *Applicable to*: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities at the Mira Loma Substation, Circle City Substation site, Mira Loma-Jefferson 66 kV Subtransmission Line alignment, staging yards, access roads, guard structures, and stringing sites in special-status vegetation communities that may support special-status species and provide foraging habitat for birds.
Special Status Bird Protection	**APM BIO-08: Avoid, Minimize, and/or Mitigate Impacts to Burrowing Owl.** Should SCE opt to participate in the MSHCP for areas within Riverside County, then avoidance/minimization would be preferred. However, if avoidance/minimization would not be possible (i.e., 90 percent of the areas with long-term conservation value were conserved), then a DBESP would be prepared that would include suitable burrowing owl habitat creation and translocation. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. For areas within San Bernardino County, a Burrowing Owl Management Plan would be created for the Project. The plan would include information related to construction monitoring, relocation strategy, and exclusionary devices.	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities at the Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line alignment, staging yards, access roads, guard structures, and stringing sites.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Special Status Bird Protection (cont.)	• A preconstruction non-protocol burrowing owl survey shall be conducted no more than 14 days prior to commencement of ground disturbing activities with suitable habitat to determine if any occupied burrows are present. • If occupied burrows are found, adequate buffers would be established around burrows. Adequate buffers would be 160 feet from wintering burrows (i.e., from December 1-January 31) and 250 feet from breeding burrows during the breeding season (i.e., from February 1 to August 31). • Biological monitors would monitor all construction activities that could potentially impact active burrows. *Applicable to*: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, staging yards, access roads, guard structures, and stringing sites.			
Nesting Bird Protection	**APM BIO-09: Avoid Impacts to Nesting Birds.** SCE would conduct pre-construction clearance surveys no more than 7 days prior to construction to determine the location of nesting birds and territories during the nesting bird season (typically February 1 to August 31, or earlier for species such as raptors). An avian biologist would establish a buffer area around active nest(s) and would monitor the effects of construction activities to prevent failure of the active nest. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. Monitoring of construction activities that have the potential to affect active nest(s) would continue until the adjacent construction activities are completed or until the nest is no longer active.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	More than 7 days prior to commencement of construction activities (typically February 1 to August 31 or earlier for species such as raptors). Monitoring (as defined in APM Bio-09) would continue during all phases of construction activities.
Riparian Vegetation Protection	**APM BIO-10: Avoid, Minimize, and/or Mitigate Impacts to MSHCP covered Riparian Vegetation/Riverine Habitat**. Pursuant to MSHCP Section 6.1.2, impacts to riparian/riverine habitat would be avoided to the extent feasible. In areas where avoidance is not possible, permanent impacts to riparian vegetation, which includes willow riparian forest vegetation and/or riverine habitat would be mitigated to ensure no net loss of habitat. Prior to construction, the limits of grading would be clearly marked around any such habitat. SCE also would prepare a mitigation plan in the format of a DBESP as part of the PSE review process. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency"	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment in riparian/riverine habitat.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Riparian Vegetation Protection (cont.)	and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW. *Applicable to*: Mira Loma-Jefferson 66 kV Subtransmission Line Route.			
Impacts to Jurisdictional Waters	**APM BIO-11: Mitigation for Impacts to Jurisdictional Waters.** Impacts to potential USACE-, RWQCB-, and CDFW-jurisdictional areas would be avoided to the extent feasible. These areas would be marked as "off limits" in construction plans and/or maps and in the field. If avoidance is not feasible, permits from the USACE, RWQCB, and CDFW would be obtained for direct and indirect impacts on areas within these agencies' jurisdictions. It is anticipated that the regulatory permit requirements would contain measures to avoid, reduce, and/or mitigate for impacts in their respective jurisdictions. In areas where avoidance is not possible, impacts to jurisdictional waters would be mitigated to ensure no net loss of habitat. SCE would pay into a mitigation bank, pay into an in-lieu fee program, or work with a local RCD to establish appropriate mitigation within the same watershed as the area of impact. On-site restoration back to existing conditions would implemented where possible; however, on-site mitigation with conservation easements and deed restrictions is rarely possible within SCE work easements. Subject to the approval of the resource agencies (i.e., USACE, RWQCB, and CDFW), SCE would submit the required materials and mitigation proposal as part of the regulated waters application processes. SCE would comply with all conditions as set forth in the regulated water permits. *Applicable to*: Source Line Route and Mira Loma-Jefferson 66 kV Subtransmission Line Route.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to construction activities along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment in jurisdictional areas.
Impacts to Protected Trees	**APM BIO-12: Avoid, Minimize, and/or Mitigate Protected Trees.** The Project would be designed to avoid protected trees to the extent feasible. Should SCE need to trim, encroach into protected root zone, relocate, or remove any protected trees as identified during pre-construction surveys, a ministerial permit would be required by the local jurisdiction's applicable ministerial tree ordinances. Due to the varying jurisdictions within the survey areas, measures would be implemented depending on the location of the protected trees, as well as conditions stated in each approved ministerial tree permit.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to construction activities at all Project components within the cities of Chino, Corona, Eastvale, Norco, and Ontario, and in unincorporated San Bernardino County.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impacts to Protected Trees (cont.)	*Applicable to*: All Project components within the cities of Chino, Corona, Eastvale, Norco, and Ontario, and in unincorporated San Bernardino County.			
Impact 4.4-1: Construction activities would result in adverse impacts to special-status plants, if present.	**Mitigation Measure 4.4-1a:** In portions of the alignments and work areas that have not been surveyed for special-status plants, SCE and/or its contractors shall complete focused plant surveys following CDFW and USFWS special-status plant survey guidelines. Surveys shall document the location, extent, and size of rare plant populations in the study area for each project component, and shall be used to inform the planned avoidance of special-status plant populations whenever possible. Based on focused plant survey findings, to the extent feasible, the final project design shall minimize impacts on known special-status plant populations within and adjacent to the construction footprints, with complete avoidance of any federal or State-listed plant species. SCE and/or its contractors shall design facilities to avoid sensitive plant populations whenever possible, shall install exclusion fencing around sensitive plant populations with as large a buffer as possible to minimize the potential for direct and indirect impacts.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities.
	Mitigation Measure 4.4-1b: To supplement special-status plant protection actions provided by APM BIO-02 in areas where avoidance of non-listed plant species is not feasible or not covered under the MSHCP, SCE and/or its contractors shall compensate for the loss through plant salvage and replanting, as follows: A qualified ecologist shall develop a Restoration and Mitigation Plan according to CDFW guidelines and in coordination with CDFW. At minimum, the plan shall include collection of complete plants or reproductive structures (as appropriate) from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, proposed restoration techniques for potential transplant and enhancement sites, a description of performance criteria (e.g., establishment of a comparably-sized plant population; 80 percent survival after 5 years), and a monitoring program of sufficient duration (e.g., 5 years) to follow the progress of transplanted or seeded individuals, and contingency measures to be implemented in the event that the project does not achieve the year 5 success criteria.	SCE and its contractors to implement measures as defined.	Submit Restoration Monitoring and Mitigation Plan per CDFW requirements for CPUC approval. Implement approved Plan.	Prior to commencement of ground disturbance activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-1 (cont.)	If impacts to rare plants are covered under the MSHCP, with SCE participation, then this measure would not apply temporarily disturbed occurrences, an assessment of potential transplant and enhancement sites, a description of performance criteria (e.g., establishment of a comparably-sized plant population; 80 percent survival after 5 years), and a monitoring program of sufficient duration (e.g., 5 years) to follow the progress of transplanted or seeded individuals, and contingency measures to be implemented in the event that the project does not achieve the year 5 success criteria. If impacts to rare plants are covered under the MSHCP, with SCE participation, then this measure would not apply.			
Impact 4.4-2: Construction activities would result in adverse impacts to special-status reptiles and amphibians, if present.	**Mitigation Measure 4.4-2:** Within areas that provide potentially suitable habitat for special-status amphibians and reptiles, SCE and/or its contractors shall have a qualified wildlife biologist perform preconstruction surveys no more than 24 hours prior to initial ground disturbance to identify the potential presence of western pond turtle, coast horned lizard, silvery legless lizard, two-striped garter snake, south coast garter snake, and western spadefoot. If any of these species are identified during surveys within the immediate construction area footprint, individuals shall be relocated from work areas by an individual who is authorized by CDFW to undertake species relocation. A suitable relocation area shall be identified and a qualified biologist with appropriate CDFW approvals shall relocate animals from the work area.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Perform preconstruction surveys no more than 24 hours prior to initial ground disturbance in areas that provide potentially suitable habitat for special-status amphibians and reptiles.
Impact 4.4-3: Construction activities would result in adverse impacts to Riverside fairy shrimp and vernal pool fairy shrimp, if present.	**Mitigation Measure 4.4-3a:** If the USFWS accepts the current negative survey findings for special-status fairy shrimp in the Project area under the prior survey protocol, no further action is needed. Otherwise, within areas that provide potentially suitable vernal pool habitat for special-status fairy shrimp, vernal pool surveys in accordance with the revised USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS, 2015) shall be conducted. Portions of the Project sites fall within the Survey Zone C for listed large branchiopods. The revised protocol requires one wet season and one dry season survey over a three-year period and is summarized as follows: *Wet Season Survey for Survey Zone C* • All potential habitats must be adequately sampled at 7-day intervals after initial inundation of habitat.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to the commencement of construction activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-3 (cont.)	• Sampling will continue within each potential habitat until it dries or a minimum of 120 consecutive days of inundation has occurred. • Sampling will be reinitiated within 7 days of an individual habitat drying and inundating during the same wet season. • A single wet season survey may be considered unreliable at any location if moderate to extreme drought conditions persist through the wet season as determined by the National Oceanic and Atmospheric Administration (NOAA) records of the Palmer drought indices. • In order to increase the probability of detection of all possible co-occurring species, USFWS may request one subsequent complete wet season sampling survey be conducted to complete survey requirements. This would likely be required if the dry season survey results indicated branchiopods were present where a previous wet season survey found no branchiopods. *Dry Season Survey* • Dry season soil/substrate sampling shall not be conducted at any Project site unless SCE receives prior authorization from the USFWS. • Soil (substrate) shall be collected when it is dry to avoid damaging or destroying listed large branchiopod eggs (also known as cysts or resting eggs) and other special-status vernal pool species. • The number of soil/substrate samples and the amount of soil/substrate collected per feature shall be proportional to the size of the feature. • Soil/Substrate shall be collected mainly from the lowest topographic areas within the feature sampled. • If listed branchiopods are detected, USFWS shall be notified within 10 working days. Upon completion of protocol surveys the permittee shall submit a report no more than 90 days after the last wet season field visit or after completion of analysis of dry season samples to USFWS.			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-3 (cont.)	**Mitigation Measure 4.4-3b:** If vernal pool fairy shrimp or Riverside fairy shrimp are identified in the Project area and impacts to occupied pools cannot be avoided, SCE shall mitigate for impacts to vernal pool fairy shrimp habitat and comply with the requirements of the FESA through one or more of the following steps to provide compensatory habitat: (a) participation in the MSHCP to obtain take coverage for identified species, (b) salvage of cysts and creation of replacement pool habitat in the local area at a replacement ratio of at least 3:1, (c) restoration of affected pools onsite after the completion of construction, or (d) acquisition of credits from an approved mitigation bank within the Project region. If occupied habitat for the above species is encountered at a Project site, to mitigate for temporary or permanent loss of aquatic sites, SCE shall implement the following measures: ***Habitat Compensation or Restoration*** • SCE shall mitigate for the loss of branchiopod habitat that will be filled or otherwise directly affected by the project by providing compensatory habitat; or, • SCE shall develop and implement a mitigation, monitoring, and management plan, with input from regulatory agencies that shall outline long-term management strategies and performance standards to be attained to compensate for habitat losses resulting from the project. At a minimum, the plan shall include standards for mitigation site selection and construction specifications for mitigation sites, a description of site conditions including aerial maps, an analysis of local branchiopod habitat, and performance criteria by which site quality can be assessed over time (e.g., size, vegetation species present, date of initial ponding, ponding duration, and wildlife usage). A monitoring program will be established to track the development of habitat conditions that are conducive to the establishment of vernal pool branchiopods. • To the greatest practicable extent, SCE or its contractors shall construct compensation habitat (i.e., replacement pools) before habitat disturbances are incurred; or directly within the project footprint after construction. A qualified biologist shall ensure that ponds are functioning as designed.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to the commencement of construction activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-3 (cont.)	***Species Protection During Construction*** • SCE shall submit the name and credentials of a biologist qualified to act as construction monitor to USFWS for approval at least 15 days before construction work begins. • If restoration is proposed to compensate for habitat loss, with concurrence from the USFWS, a USFWS-approved biologist shall salvage soils from sites that are known to support vernal pool branchiopods at least 2 weeks before the onset of construction, or during the preceding dry season if pools are anticipated to hold water when construction begins. The salvaged soil samples will be stored and used to inoculate created pools once minimum performance standards are met at these locations. • A USFWS-approved biologist shall be present at each active work site within 0.5-mile of potential fairy shrimp habitat until habitat disturbance has been completed. Thereafter, the contractor or SCE shall designate a person to monitor onsite compliance with all minimization measures. A USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements. • A USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of fairy shrimp and their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve fairy shrimp as they relate to the project, and the boundaries within which the project construction shall occur. • All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any fairy shrimp habitat.			
Impact 4.4-4: Construction activities would result in adverse impacts to special-status fish, if present.	**Mitigation Measure 4.4-4:** This measure shall apply if SCE does not participate in the MSHCP. SCE shall coordinate with the USFWS to ensure that earthwork in the Santa Ana River corridor either: 1) does not impact the Santa Ana sucker or habitat for this species, or; 2) any Santa Ana sucker relocation or habitat modification that may affect this species is performed with advance USFWS knowledge and approval. In addition, SCE shall implement the following measures:	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor (qualified biologist) to inspect for compliance.	Prior to construction: within 14 days prior to in-water work and during construction as defined by the measure.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-4 (cont.)	• A qualified biologist who holds the appropriate Section 10(a)(1)(A) permit shall survey for Santa Ana sucker following the USFWS protocol within 14 days prior to in-water work to determine the potential presence of this species. Surveys shall also include presence/absence determinations for arroyo chub and Santa Ana Speckled dace. • A qualified biologist shall supervise the installation of barrier nets to be installed in open water upstream and downstream from the work area. The qualified biologist shall check the integrity of barrier nets daily to ensure there are no gaps that may allow fish passage into the work area. • The relocation of Santa Ana suckers from within isolated aquatic work areas shall only be performed by a USFWS-approved biologist(s). Work shall not proceed until a qualified biologist has confirmed that special-status fish are not present within the isolated work area.			
Impact 4.4-5: Construction activities would result in adverse impacts to least Bell's vireo, Southwestern willow flycatcher, yellow-billed cuckoo, and their habitats.	**Mitigation Measure 4.4-5a:** APM BIO-06 shall also be applied to protect southwestern willow flycatcher should this species be encountered during pre-construction surveys or Project activities.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities as defined by the measure.
	Mitigation Measure 4.4-5b: Should SCE not opt to participate in the MSHCP, the following additional measures shall be followed to avoid, minimize, and/or mitigate impacts to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo and their habitat: • If USFWS/CDFW protocol-level surveys document the presence of least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo within active work areas or areas within 500 feet, impacts to these species would be mitigated to less than significant if occupied riparian forest is avoided and construction within 500 feet of occupied habitat occurs only between September 15 and March 15. • Occupied and potentially occupied habitat for least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo shall be avoided to the extent feasible. If complete avoidance of occupied or potentially occupied habitat is not feasible,	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities as defined by the measure.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-5 (cont.)	additional or alternative measures to avoid or minimize adverse project effects to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo may be required by the USFWS and CDFW. However, if the above measures cannot be implemented such that "take" of these species is fully avoided, authorization shall be obtained from the USFWS and CDFW prior to initiating work within 500 feet of occupied habitat. Such measures may include habitat restoration requirements, as described in Mitigation Measure 4.4-5c.			
	Mitigation Measure 4.4-5c: As identified in APMs BIO-06 and BIO-10, SCE has committed to prepare a riparian mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation report (DBESP report) as part of the Participating Special Entity (PSE) review process under the MSHCP. SCE shall implement this plan to restore impacted habitat values for the least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo in the Santa Ana River corridor. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency." The DBESP report guidelines are highly specific regarding the magnitude of anticipated impacts and restoration requirements, some of which include: • Quantification of unavoidable impacts to riparian/riverine areas associated with the project, including direct and indirect effects. • Functions and values assessment focusing on how they will affect downstream values related to Conserved Species. • Habitat assessments for least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo. If the site supports suitable habitat, focused surveys will also be required. • A written description project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through restoration or enhancement.	SCE and its contractors to implement measures as defined.	SCE to submit DBESP report per MSHCP requirements, and "findings of consistency" for USFWS and CDFW concurrence to CPUC for approval. CPUC to inspect for compliance.	Prior to commencement of ground disturbance activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-5 (cont.)	• A description of mitigation measures to ensure long-term conservation through deed restriction, conservation easement or other appropriate mechanism. • Restoration measures shall consider: a) Restoration and/or enhancement of on-site habitat; b) Restoration and/or enhancement of off-site habitat; c) Habitat that is restored or enhanced will be able to provide biological, hydrological, and biogeochemical functions to a level consistent with those being lost on-site; and d) Upon reaching maturity and satisfying the criteria established for mitigation areas, the goals for restoration shall include: i. All habitat mitigation areas will be self-sustaining in perpetuity and contribute to regional biodiversity ii. All habitat mitigation will not require outside input for recruitment and propagation of plant species iii. Nutrients will be cycled within the mitigation areas through natural processes iv. The entire range of biological components, processes, and interactions will be present in each community; and v. Natural processes of ecological succession will be allowed to occur			
Impact 4.4-9: Construction activities would temporarily result in adverse impacts to sensitive natural communities, such as willow riparian forest, coastal sage scrub, and grassland.	**Mitigation Measure 4.4-9a:** Should SCE opt to participate in the MSHCP, apply Restoration Planning Methodology identified in Mitigation Measure 4.4-5c to Non-riparian Special-status Vegetation that is not fully covered in the MSHCP.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities.
	Mitigation Measure 4.4-9b: To mitigate impacts to riparian habitat, SCE shall prepare a project-wide 1602 Lake and Streambed Alteration Agreement (LSAA) in accordance with CDFW requirements. SCE shall include mitigation measures that are sufficient to reduce direct and indirect impacts to willow riparian forest habitat to less than significant. The LSAA may include some or all of the following:	SCE and its contractors to implement measures as defined.	Submit Project-wide 1602 LSAA per CDFW requirements for CPUC approval.	Prior to commencement of ground disturbance activities in riparian areas.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-9 (cont.)	• Avoid impacts to riparian habitat where possible by shifting staging areas or adjusting construction timing; • Minimize impacts; • Remove invasive riparian species; • Purchase off-site habitat credits; • Create and/or restore natural communities and prepare a monitoring and maintenance plan for these areas (consistent with methodology discussed in Mitigation Measure 4.4-5b); • Situate staging areas as far away from sensitive habitats as is feasible; • Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting; and • Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host least Bell's vireo, southwestern willow flycatcher, or yellow-billed cuckoo.			
Impact 4.4-10: Construction activities would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the federal CWA, and the potential loss and degradation of wetland habitats protected under state regulations.	Implement Mitigation Measure 4.4-5c, Sensitive Habitat Restoration.	See Mitigation Measure 4.4-5c, above.		
Impact 4.4-12: The Project activities would disturb special-status bats or maternity bat roosts, if present.	**Mitigation Measure 4.4-12:** SCE shall ensure that a preconstruction survey for roosting bats shall be conducted by a qualified biologist prior to construction activities to characterize potential bat habitat and identify active roost sites. Surveys shall be conducted within 100 feet of construction activities. If an active bat roost being used for maternity is found within 100 feet of the construction activities, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active maternity roosts by the qualified biologist.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Biological Resources (cont.)				
Impact 4.4-12 (cont.)	Should potential roosting habitat or active non-maternity bat roosts be found in trees to be removed or trimmed or poles to be replaced under the Project, SCE shall implement the following measures: 1. Removal or trimming of trees and/or poles with potential bat roosting habitat or active roosts shall occur when bats are active (i.e., not in torpor or hibernation), approximately between the periods of March 1 to March 15, and September 15 to October 15; outside of bat maternity roosting season (approximately March 15 to September 15) and outside of months of winter torpor (approximately October 15 to February 28) to the extent feasible. 2. The biologist shall be present during tree and pole removal if potential roosting habitat or active bat roosts are present. Trees and poles with potential roosting habitat or active roosts shall be removed only when no rain is occurring or is forecast to occur for 3 days, when daytime nighttime temperatures are at least 50 °F, and when wind speeds are less than 15 mph. 3. Removal of trees or branches with active or potentially active roost sites shall follow a two-step removal process: a. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws or hand tools. b. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or hand tools or other equipment (e.g. excavator or backhoe). 4. Removal of structures containing or suspected to contain active bat roosts shall be partially dismantled under the supervision of the qualified biologist in the evening prior to the emergence of bats. Structures shall be partially dismantled to significantly change the roost conditions, causing adult bats to abandon the roost and seek new roosting locations. Removal shall be completed the subsequent day. 5. Bat roosts that begin during construction are presumed to be unaffected, and no buffer would be necessary. Direct impacts to bat roosts or take of individual bats shall be avoided.			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources				
Paleontological Resources	**APM PAL-01: Paleontological Resources Management Plan.** A Paleontological Resources Management Plan would be developed for construction within areas that have been identified as having a moderate and high sensitivity for paleontological resources, and would identify monitoring and treatment requirements for sensitive paleontological resources of significance. The Paleontological Resources Management Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology.	SCE and its contractors to implement measure as defined.	SCE to submit Paleontological Resources Management Plan to CPUC. CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities.
Impact 4.5-1: Implementation of the Project could cause a substantial adverse change in the significance of the Grand Boulevard Historic District.	**Mitigation Measure 4.5-1:** SCE shall prepare a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources shall follow the State standards and guidelines established in Public Resources Code (PRC) Sections 21083.2 and 21084.1 through 21084.3, as well as CEQA Guidelines Section 15064.5 and Appendix G. The CRMP shall be submitted to the CPUC for review and approval at least 30 days prior to the start of construction. The CRMP shall require, but not be limited to, the following: 1. *Construction Plan Review/Markup*: An architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History shall assist project engineers in identifying and labeling for avoidance on construction plans all contributing elements of the Grand Boulevard Historic District (P-33-006444) located in or adjacent to the project construction area. 2. *Cultural Resource Monitoring and Field Reporting*: Detailed procedures shall be followed for archaeological monitoring and reporting, and for determining when monitoring is no longer necessary. Such procedures shall include, but not necessarily be limited to: archaeological monitoring – the monitor shall meet the Secretary of the Interior's Professional Qualifications for Archeology, mapping of areas to be monitored (i.e., areas of moderate potential for archaeological resources that are in previously undisturbed sediment), and implementation of Unanticipated Discovery Protocol in the event of any identified archaeological deposits, including human remains and potential tribal cultural resources (see below); determining when monitoring is no longer necessary – confirmation that ground-disturbing work is complete in areas	SCE and its contractors to implement measure as defined.	CPUC mitigation monitor to inspect for compliance.	Plan shall be submitted prior to construction of the Pedley Source Lines or Alternative E4 telecommunication line construction activities, as applicable.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources (cont.)				
Impact 4.5-1 (cont.)	of moderate potential for archaeological resources that are in previously undisturbed sediment before the determination is made that monitoring is complete; reporting – submission of an archaeological monitoring report to the CPUC upon completion of construction monitoring and subsequent submission to the California Historical Resources Information System (CHRIS) upon approval by the CPUC. 3. *Unanticipated Discovery Protocol*: Detailed procedures for halting construction, defining work stoppage zones, notifying stakeholders (e.g. agencies, Native American tribes, utilities), and assessing California Register-eligibility of cultural resources, including human remains and potential tribal cultural resources in the event that any such resources are encountered during construction. Such procedures shall include, but not necessarily be limited to the following: a. If prehistoric or historic-era archaeological resources are encountered during construction, SCE and/or its contractors shall immediately cease all construction activity within 100 feet of the find and flag off the area for avoidance. b. The CPUC shall be immediately informed of the discovery. c. A qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment. d. If human remains are uncovered during construction, SCE and/or its contractors shall immediately halt all work within 100 feet of the discovery, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, the county coroner shall contact the NAHC within 24 hours, in accordance with California Health and Safety Code Section 7050.5(c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources (cont.)				
Impact 4.5-1 (cont.)	standards or practices, where the Native American human remains are located is not damaged or disturbed by further construction activities until SCE and the CPUC have discussed and conferred, as prescribed in PRC Section 5097.98, with the most likely descendants regarding their recommendations for treatment of the human remains, including, if applicable, taking into account the possibility of multiple human remains. e. If the CPUC determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. 4. *Treatment Measures*: If avoidance of a resource that may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4(b). Treatment shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the resource. The CRMP shall detail methods for data recovery, including analysis in a regional context, reporting of results within 1 year of completion of field studies, curation of artifacts and data (e.g., maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by the CPUC, and dissemination of reports to appropriate repositories, including the CHRIS.			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources (cont.)				
Impact 4.5-2: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered historical resources.	Implement Mitigation Measure 4.5-1.	See Mitigation Measure 4.5-1, above.		
Impact 4.5-3: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered archaeological resources.	Implement Mitigation Measure 4.5-1.	See Mitigation Measure 4.5-1, above.		
Impact 4.5-4: Project implementation could directly destroy a unique paleontological resource.	**Mitigation Measure 4.5-4:** The Paleontological Resources Management Plan, required by APM PAL-01, shall include the following monitoring and treatment requirements. ***Monitoring Requirements.*** Before and during Project-related ground disturbing activities, Project work shall be conducted such that any fossil remains encountered are recovered in their entirety. The monitoring measures in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following: • Geotechnical borings collected during geotechnical investigations, as available, shall be reviewed by a professional paleontologist for subsurface paleontological potential prior to construction. If the professional paleontologist identifies units with high or moderate paleontological potential in the geotechnical borings, the professional paleontologist shall incorporate any additional monitoring recommendations needed to conduct work such that any unique paleontological resources are not destroyed. • Qualified personnel shall monitor excavations in areas identified as having moderate to high sensitivity for paleontological resources, and in areas mapped as Qaf, Qw, Qf, Qyw, Qyf, Qya, or Qye but which include excavations greater than 10 feet deep.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during ground disturbing activities.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources (cont.)				
Impact 4.5-4 (cont.)	• Qualified personnel shall be equipped to salvage and recover fossils and take sediment samples, and shall be empowered to temporarily halt or divert construction equipment to allow removal of abundant/large specimens. • Should the ongoing monitoring results indicate that the paleontological sensitivity of the subsurface sediments within the project area is lower or higher than anticipated, the monitoring level of effort shall be adjusted (increased, decreased, or suspended) accordingly. • If subsurface fossils are encountered during construction and monitor is not present, qualified paleontologist should be notified immediately and work in the immediate area (50 feet) of the discovery should cease until discovery can be evaluated. ***Treatment requirements.*** Any fossils collected during Project activities must be placed in an accredited scientific institution for the benefit of current and future generations. The treatment requirements in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following: • Preparation of specimens by qualified professionals to a point of identification and permanent preservation. • Preparation by qualified professionals of a report of findings and inventory of resources recovered. • Placement of any collected fossils in an accredited museum repository with permanent retrievable paleontologic storage. • Documentation of curation into an established museum repository (prior to which treatment shall not be considered complete).			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Cultural Resources (cont.)				
Impact 4.5-5: Project construction could result in damage to previously unidentified human remains.	**Mitigation Measure 4.5-5:** If human remains are uncovered during Project construction, SCE and/or its contractors shall immediately halt all work, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, SCE and/or its contractors shall contact the NAHC, in accordance with HSC Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). Per PRC Section 5097.98, SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until SCE and/or its contractor has discussed and conferred, as prescribed in this section (PRC §5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities, and during all phases of construction activities.
Impact 4.5-6: Implementation of the Project could cause a substantial adverse change in the significance of previously unknown tribal cultural resources.	Implement Mitigation Measures 4.5-1 and 4.5-5.	See Mitigation Measures 4.5-1 and 4.5-5, above.		
Energy Conservation				
Impact 4.6-1: Construction, operation, and maintenance would result in the consumption of energy.	**Mitigation Measures 4.6-1:** SCE shall contract with a qualified professional (i.e., construction planner/energy efficiency expert) to prepare a Construction Equipment Efficiency Plan that identifies the specific measures that SCE (and its construction contractors) will implement as part of Project construction to increase the efficient use of construction equipment to the maximum extent feasible. Such measures shall include, but not necessarily be limited to: procedures to ensure that all construction equipment is properly tuned and maintained at all times; a commitment to utilize existing electricity sources where feasible rather than portable diesel-powered generators; and identification of procedures (including the routing of haul trips) that shall be followed to ensure that all materials and debris hauling is conducted in a fuel-efficient manner. The plan shall be submitted to CPUC for review and approval at least 30 days prior to the beginning of construction activities.	SCE and its contractors to implement measures as defined.	SCE to provide Construction Equipment Efficiency Plan to CPUC for review and approval. CPUC mitigation monitor to inspect for compliance.	The Plan shall be submitted at least 30 days prior to commencement of construction activities. The Plan shall be implemented during all phases of construction.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Geology and Soils				
Impact 4.7-2: The project would result in increased risk of substantial adverse effects involving liquefaction.	**Mitigation Measure 4.7-2:** SCE or its contractor shall conduct a design-level geotechnical investigation for all of the approved Project sites and alignments that have not yet been investigated and shall prepare a geotechnical report documenting the results of the investigation. This investigation shall evaluate water table depth, faulting and seismicity, liquefaction potential, physical properties of subsurface soils (including soil expansion), seismic settlement, and potential for soil collapse and lateral spreading. The geotechnical investigation shall be prepared and certified by a California-licensed professional engineer or engineering geologist, and shall include earthwork, grading, design, and construction recommendations (e.g., soil treatment/conditioning or engineered fill replacement) to reduce the exposure of structures to seismic-related ground failure, including liquefaction hazards, and to other hazards resulting from soil properties. Measures that may be used to reduce impacts could include, but are not limited to: • Liquefaction: soil densification and compaction, excavation, and removal or recompaction of potentially liquefiable soils, design and installation of deep foundations or reinforced shallow foundations; and/or avoidance of highly unstable areas; and • Expansive soil: excavation of expansive soil, draining water away from expansive soils, ground-treatment processes. SCE shall provide documentation to the CPUC prior to the commencement of construction that demonstrates these measures have been incorporated into Project designs.	SCE and its contractors to implement measures as defined.	CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities. Identified measures will be implemented during construction.
Impact 4.7-3: The project could result in soil erosion or loss of topsoil.	Implement Mitigation Measure 4.3-2a.	See Mitigation Measure 4.3-2a, above.		
Impact 4.7-4: Sections of the Project alignment would be located on soil that could become unstable as a result of the Project.	Implement Mitigation Measure 4.7-2.	See Mitigation Measure 4.7-2, above.		
Impact 4.7-5: Portions of the Project would be located on expansive soil, creating risks to life and property.	Implement Mitigation Measure 4.7-2.	See Mitigation Measure 4.7-2, above.		

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Hazards and Hazardous Materials				
	APM-HAZ-01: Implement a Hazardous Materials Management Plan. SCE would prepare and implement a Hazardous Materials Management Plan (HMMP) during construction of the Project. The plan would outline hazardous material handling, use, storage, and disposal requirements, as well as hazardous waste management practices. The plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations. The HMMP would include procedures to address hazardous material storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous material release containment/control procedures, hazard communication training, Personal Protective Equipment training, and release reporting requirements.	SCE and its contractors to implement measures as defined.	SCE to submit HMMP to CPUC. CPUC mitigation monitor to inspect for compliance.	Prior to commencement of construction activities. Plan to be implemented during all phases of project construction.
	APM-HAZ-02: Fire Management Plan. SCE would prepare and implement a Fire Management Plan during construction of the Project. The plan would provide guidance for prevention, control, and extinguishment of fires. The plan also would provide smoking and fire-related rules, storage and parking areas, usage of spark arrestors on construction equipment, and fire-suppression tools and equipment. The plan would also include the following measure: • Cease work during Red Flag Warning events in areas where grassland or other vegetation would be susceptible to accidental ignition by Project activities that could ignite a fire (such as welding or use of equipment that could create a spark). During Red Flag Warning events, as issued by the National Weather Service, all non-emergency construction and maintenance activities would cease in affected areas.	SCE and its contractors to implement measures as defined.	SCE to submit Fire Management Plan to CPUC. CPUC mitigation monitor to inspect for compliance.	Plan to be submitted for review and approval prior to commencement of construction activities. Plan to be implemented during all phases of project construction.
Impact 4.9-1: Construction and operation and maintenance would require the use of hazardous materials that could pose a potential hazard to the public or the environment if improperly used or inadvertently released.	**Mitigation Measure 4.9-1:** As identified in APM HAZ-01, SCE shall prepare and implement a Hazardous Materials Management Plan. The plan shall be prepared and submitted to CPUC for review and approval at least 30 days prior to the start of construction. The plan shall include, but not be limited to, the following requirements: 1. SCE shall prepare a Hazardous Substance Control and Emergency Response Plan (Plan) and implement it during construction to ensure compliance with all applicable federal, state, and local laws and guidelines regarding the handling of	SCE and its contractors to implement measures as defined.	SCE shall submit a Hazardous Substance Control and Emergency Response Plan to the CPUC for review and approval. CPUC shall inspect for compliance.	Plan to be submitted for review and approval at least 30-days prior to commencement of construction activities. Plan to be implemented during all phases of project construction.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Hazards and Hazardous Materials (cont.)				
Impact 4.9-1 (cont.)	hazardous materials. If the Project would result in the storage or handling of a Threshold Quantity or greater of a hazardous substance as defined by the California Hazardous Materials Release Response Plan and Inventory Law, the Plan shall include preparation and implementation of a Hazardous Materials Business Plan that describes the hazardous materials usage, storage, and disposal to the appropriate Certified Unified Program Agency (San Bernardino County Fire Department, Hazardous Materials Division, and/or Riverside County Department of Environmental Health, Hazardous Materials Branch, as applicable). The Plan shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The Plan shall also include appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall require that SCE and/or its contractors shall implement construction best management practices including but not limited to the following: a. Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction. b. Avoid overtopping construction equipment fuel gas tanks. c. Use tarps and oil-absorbent pads under vehicles when refueling to contain and capture any spilled fuel. d. During routine maintenance of construction equipment, properly contain and remove grease and oils. e. Properly dispose of discarded containers of fuels and other chemicals. f. Emergency spill supplies and equipment shall be kept at the project staging area and adjacent to all areas of work, and shall be clearly marked. g. If potentially contaminated materials are encountered during excavation, work shall stop at that location and SCE's Spill Response Coordinator shall be called to the site to make an assessment and notify the proper authorities, including CPUC. The potentially contaminated			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Hazards and Hazardous Materials (cont.)				
Impact 4.9-1 (cont.)	soil shall be segregated into lined stockpiles or placed in dump trucks or roll-off containers, sampled, and tested to determine appropriate handling, treatment, and disposal options. If the soil is classified as hazardous, it shall be properly managed on location before being transported in accordance with United States Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility 2. SCE shall prepare and implement a Health and Safety Plan to ensure the health and safety of construction workers and the public during construction. The plan shall include information on the appropriate personal protective equipment to be used during construction, spill containment, emergency response, and other safety requirements consistent with OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) guidelines. 3. SCE shall ensure that the Workers Environmental Awareness Plan (WEAP) includes training on site-specific physical conditions to improve hazard materials release prevention and include a review of the Fire Management Plan (APM HAZ-02), Health and Safety Plan, and the Hazardous Substance Control and Emergency Response Plan. The CPUC mitigation monitor shall attend the first WEAP training program. SCE shall submit documentation to the CPUC prior to the commencement of construction activities that each worker on the project has undergone this training program.			
Impact 4.9-2: Construction could release previously unidentified hazardous materials into the environment.	Implement Mitigation Measure 4.9-1.	See Mitigation Measure 4.9-1, above.		
Impact 4.9-3: Construction activities could release hazardous materials within the vicinity of an existing school.	**Mitigation Measure 4.9-3:** SCE shall coordinate construction activities with the administration of Auburndale Intermediate School to ensure that construction activities associated with the Mira Loma-Jefferson 66 kV Subtransmission Line are not conducted within 50 meters (164 feet) of the school while students are on campus (e.g., during non-school hours and/or during breaks in the school year). SCE shall provide the CPUC with documentation of the coordination with the school administration at least 60 days before work would begin within the vicinity of the school.	SCE and its contractors to implement measures as defined.	SCE shall provide documentation of coordination with the school administration to the CPUC. CPUC to inspect for compliance.	At least 60 days prior to commencement of Mira Loma-Jefferson 66 kV Subtransmission Line construction activities within the vicinity of Auburndale Intermediate School.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Hazards and Hazardous Materials (cont.)				
Impact 4.9-4: Construction, operation, and maintenance of the Project could result in an aviation safety hazard for people residing or working in the project area.	**Mitigation Measure 4.9-4:** In the event that the Federal Aviation Administration (FAA) provides SCE with aviation safety recommendations for the project, SCE shall implement the recommendations to the extent feasible. If SCE determines that the recommendation is not feasible, SCE must consult with FAA to identify how the intent of the recommendation, in terms of aviation safety, can be achieved in a feasible manner to ensure that construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. SCE shall submit to the CPUC a detailed report identifying the specific reasons why it has determined that the recommendations are not feasible. The report shall include documentation of SCE's correspondences with FAA and present an FAA-agreed-upon solution to implement and achieve the aviation safety intent of the FAA recommendations that ensures construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. The report shall be submitted to the CPUC for approval at least 90 days prior to installation of any project component.	SCE and its contractors to implement measures as defined.	CPUC to inspect for compliance.	The report shall be submitted for approval at least 90 days prior to installation of any project component.
Impact 4.9-5: Construction of the Project could interfere with an emergency response or evacuation plan.	Implement Mitigation Measure 4.17-1.	See Mitigation Measure 4.17-1, below.		
Impact 4.9-6: Construction could increase the probability of a wildfire.	**Mitigation Measure 4.9-6:** SCE and/or its contractors shall prepare and implement a Fire Safety Plan to ensure the health and safety of construction workers and the public. SCE shall contact the appropriate fire departments (Riverside County Fire Department, San Bernardino County Fire Department, Corona Fire Department, Chino Valley Independent Fire District, and Ontario Fire Department) for consultation during plan preparation and shall include fire safety measures recommended by these agencies. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations. The plan shall include, but not be limited to, the following: • SCE and/or its contractors shall have water tanks and/or water trucks sited/available in the Project area for fire protection.	SCE and its contractors to implement measures as defined.	SCE to prepare and implement Fire Safety Plan.	Plan to be submitted to applicable fire departments and CPUC at least 30 days prior to commencement of construction activities Fire Safety Plan to be implemented during all phases of project construction.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Hazards and Hazardous Materials (cont.)				
Impact 4.9-6 (cont.)	• All construction vehicles shall have fire suppression equipment. • All construction workers shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire. • As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires. • Construction personnel shall be required to park vehicles away from dry vegetation. • Prior to construction, SCE shall contact and coordinate with the appropriate fire departments to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks if water trucks are not used. SCE shall submit verification of its consultation with CAL FIRE and the local fire departments to the CPUC. • SCE shall submit the plan along with all records of consultation with local fire departments, including any responses received from fire departments, to CPUC staff for approval at least 30 days prior to commencement of construction activities shall be distributed to all construction crew members prior to construction of the Project.			
Impact 4.9-8: Induced currents associated with operation of the Project could generate electrical shocks.	**Mitigation Measure 4.9-8:** As part of the siting and construction process, SCE shall identify objects, such as fences, metal buildings, pipelines, etc. that are within the 500 kV ROW that have the potential for induced voltages to cause a perceptible current or small electrical shock and shall implement electrical grounding of those metallic objects in accordance with Cal/OSHA Electrical Safety Orders at 8 CCR 2739. The identification of objects shall be provided to the CPUC at least 30 days prior to the commencement of construction, and shall document the thresholds of electric field strength and metallic object size at which grounding becomes necessary.	SCE and its contractors to implement measure as defined.	SCE to provide supporting documentation to CPUC. CPUC mitigation monitor to monitor compliance.	The identification of objects shall be provided at least 30 days prior to the commencement of construction within the 500 kV ROW.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Noise				
Impact 4.13-2: Construction of the Project would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations.	**Mitigation Measure 4.13-2a:** SCE and/or its contractors shall develop a Construction Noise Reduction Plan. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall include, but not be limited to, the following measures for daytime construction activities: • Distribute to the potentially affected residences within 100 feet of Project construction a "hotline" telephone number, which shall be attended during active construction working hours, for use by the public to register complaints. All complaints shall be logged noting date, time, complainants' name, nature of complaint, and any corrective action taken. • All construction equipment must be properly tuned, in good condition, and shall have noise reduction features (e.g., mufflers and engine shrouds) no less effective than those originally installed by the manufacturers thereof. • Ensure that during construction, trucks and equipment are running only when necessary. • Maintain maximize physical separation, as far as practicable, between noise sources (construction equipment) and sensitive noise receptors. Separation may be achieved locating stationary equipment to minimize noise impacts on the community. • Use construction noise barriers such as paneled noise shields, barriers, or enclosures adjacent to noisy stationary equipment. Noise control shields shall be made featuring a solid panel and a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.	SCE and its contractors to implement measures as defined.	SCE to submit Construction Noise Reduction Plan and Nighttime Noise and Nuisance Reduction Plan to CPUC for review and approval. CPUC to inspect for compliance.	Plan shall be submitted to CPUC prior to commencement of construction. Construction Noise Reduction Plan shall be implemented during all phases of project construction, as applicable.
	Mitigation Measure 4.13-2b: SCE and/or its contractors shall develop a Nighttime Noise and Nuisance Reduction Strategy plan in the event that nighttime construction activity is determined to be necessary within 400 feet of sensitive receptors. The plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The strategy shall include a set of site-specific noise attenuation measures that apply state-of-the-art noise reduction technology to ensure that nighttime construction noise levels and associated nuisances are reduced to the extent feasible.	SCE and its contractors to implement measures as defined.	SCE to submit Construction Noise Reduction Plan and Nighttime Noise and Nuisance Reduction Plan to CPUC for review and approval. CPUC to inspect for compliance.	Plan shall be submitted to CPUC prior to commencement of construction. Nighttime Noise and Nuisance Reduction Strategy Plan shall be implemented during all phases of project construction, as applicable.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Noise (cont.)				
Impact 4.13-2 (cont.)	The attenuation measures may include, but not be limited to, the control strategies and methods for implementation that are listed below. If any of the following strategies are determined by SCE to not be feasible, an explanation as to why the specific strategy is not feasible shall be included in the plan. • Plan construction activities to minimize the amount of nighttime construction. • Offer temporary relocation of residents within 200 feet of nighttime construction activities. • Temporary noise barriers, such as shields and blankets, shall be installed immediately adjacent to all nighttime stationary noise sources (e.g., auger rigs, generators, compressors, etc.). • Install temporary noise barriers that block the line of sight between nighttime activities and the closest residences within 400 feet. The notification requirements identified in Mitigation Measure 4.13-2a shall be extended to include residences within 400 feet of pending nighttime construction activities.			
Transportation and Traffic				
Impact 4.17-1: Construction could adversely affect traffic and transportation conditions.	**Mitigation Measure 4.17-1:** As part of any encroachment permit, SCE shall prepare and implement a Traffic Management Plan subject to approval of Caltrans and/or the applicable local government(s), including agencies that operate alternative modes of transportation (e.g., North Main Corona Metrolink Station, the Corona Cruiser/RTA bus route, and the Metrolink Rail path). The approved Traffic Management Plan and documentation of agency approvals shall be submitted to the CPUC prior to the commencement of construction activities. At a minimum, the plan shall: • Include a discussion of work hours, haul routes, and work area delineation within public road rights-of-way. Heavy-duty construction vehicles and equipment would not utilize SR 91 within the City of Corona (from the Green River Road exit to the Pierce Street exit) to access the proposed Circle City Substation site during peak traffic hours throughout the approximately 9-week-long grading period at the substation site. On weekdays between 7:00 a.m. and 9:00 a.m., heavy-duty construction	SCE and its contractors to implement measure as defined.	SCE to provide Traffic Management Plan to applicable agencies SCE to provide the approved Plan and documentation of approvals to the CPUC CPUC to monitor for compliance with the approved Plan.	Prior to the commencement of all phases of project construction activities. Approved Traffic Management Plan to be implemented during all phases of project construction.

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Transportation and Traffic (cont.)				
Impact 4.17-1 (cont.)	vehicles and equipment would not utilize SR 91 heading west, and would not utilize SR 91 heading east between 4:00 p.m. and 6:00 p.m. Alternate travel routes, such as East 6th Street or Magnolia Avenue, would be used instead during these times to avoid peak traffic hours along SR 91; • Require construction work to utilize traffic control and flagging when construction vehicles are present; • Provide access and parking restrictions through posted signage; • Require workers to park personal vehicles at the approved staging area and take only necessary project vehicles to the work sites; • Lay out plans for notifications and a process for communication with adjacent residents and landowners prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which road/lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; and • Include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure that construction activities and associated lane closures would not significantly affect emergency response vehicles. Emergency service providers shall be notified of the timing, location, and duration of construction activities. SCE shall submit verification of its consultation with emergency service providers to the CPUC. All roads shall remain passable to emergency service vehicles at all times. • Identify all roadway locations where special construction techniques (e.g., night construction) would be used to minimize impacts to traffic flow. • Repair roads damaged by Project construction to a structural condition equal to that which existed prior to construction activity. The SCE and the local jurisdiction(s) shall enter into an agreement prior to construction that will detail the pre-construction conditions and the post-construction requirements of the rehabilitation program.			

TABLE F-1 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM FOR THE CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV LINE PROJECT

Environmental Impact	Applicant Proposed Measures (APMs) and Mitigation Measures (MMs) Proposed in this EIR	Implementing Actions	Monitoring/Reporting Requirements	Timing
Transportation and Traffic (cont.)				
Impact 4.17-1 (cont.)	• Lane closures shall occur during off-peak traffic hours (i.e., 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.).			
Impact 4.17-4: Changes in air traffic patterns and increased air traffic levels could result in safety risks.	Implement Mitigation Measure 4.9-4.	See Mitigation Measure 4.9-4, above.		
Impact 4.17-5: Traffic safety hazards could increase for vehicles, bicyclists, and pedestrians on public roadways.	Implement Mitigation Measure 4.17-1.	See Mitigation Measure 4.17-1, above.		
Impact 4.17-6: Construction activities could result in delays for emergency vehicles on roadways in the area.	Implement Mitigation Measure 4.17-1.	See Mitigation Measure 4.17-1, above.		
Impact 4.17-7: Alternative modes of transportation (public transit, bicycle or pedestrian) could be adversely affected during construction.	Implement Mitigation Measure 4.17-1.	See Mitigation Measure 4.17-1, above.		

Appendix G
Draft EIR as Revised by Final EIR

CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV SUBTRANSMISSION LINE PROJECT

Final Environmental Impact Report
SCH Number 2016021012

Prepared for
California Public Utilities Commission

December 2018

CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV SUBTRANSMISSION LINE PROJECT

Final Environmental Impact Report
SCH Number 2016021012

Prepared for
California Public Utilities Commission

December 2018

550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900
www.esassoc.com

ESA

Bend	Oakland	San Francisco
Camarillo	Orlando	Santa Monica
Delray Beach	Pasadena	Sarasota
Destin	Petaluma	Seattle
Irvine	Portland	Sunrise
Los Angeles	Sacramento	Tampa
Miami	San Diego	

207584.14

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project (A.15-12-007) Final Environmental Impact Report

Page

Acronymns and Abbreviations vii

Executive Summary ES-1
ES.1 Introduction ES-1
ES.2 Project Objectives ES-2
ES.3 Project Description ES-3
ES.4 Alternatives ES-4
ES.5 Environmentally Superior Alternative ES-4
ES.6 Areas of Controversy and Issues to be Resolved ES-5
ES.7 Summary of Impacts and Mitigation Measures ES-5

Chapter 1, Introduction 1-1
1.1 Purpose of This Document 1-1
1.2 Project Overview 1-1
1.3 Proposed Project Purpose and Objectives 1-2
1.4 Agency Use of This Document 1-7
1.5 Public Review and Comment 1-9
1.6 Reader's Guide to This EIR 1-11

Chapter 2, Project Description 2-1
2.1 Introduction 2-1
2.2 Project Location 2-1
2.3 Existing System 2-1
2.4 Overview of the Project 2-4
2.5 Project Components 2-7
2.6 Construction 2-28
2.7 Operation and Maintenance 2-60
2.8 Worker Environmental Awareness Training 2-62
2.9 Land Rights 2-63
2.10 Applicant-Proposed Measures 2-64
2.11 Electric and Magnetic Fields Summary 2-70

Chapter 3, Project Alternatives 3-1
3.1 CEQA Context for the Consideration of Alternatives 3-1
3.2 Alternatives Development and Screening Process 3-2
3.3 Summary of Screening Results 3-7
3.4 Alternatives Evaluated in this EIR 3-13
3.5 Alternatives Eliminated from Full EIR Evaluation 3-32

Page

Chapter 4, Environmental Analysis 4-1
Introduction to Environmental Analysis 4-1
4.1 Aesthetics 4.1-1
4.2 Agriculture and Forestry Resources 4.2-1
4.3 Air Quality 4.3-1
4.4 Biological Resources 4.4-1
4.5 Cultural Resources 4.5-1
4.6 Energy Conservation 4.6-1
4.7 Geology and Soils 4.7-1
4.8 Greenhouse Gas Emissions 4.8-1
4.9 Hazards and Hazardous Materials 4.9-1
4.10 Hydrology and Water Quality 4.10-1
4.11 Land Use and Planning 4.11-1
4.12 Mineral Resources 4.12-1
4.13 Noise 4.13-1
4.14 Population and Housing 4.14-1
4.15 Public Services 4.15-1
4.16 Recreation 4.16-1
4.17 Transportation and Traffic 4.17-1
4.18 Utilities and Service Systems 4.18-1

Chapter 5, Comparison of Alternatives 5-1
5.1 Comparison Methodology 5-1
5.2 Evaluation of Project Alternatives 5-2
5.3 Comparison of Alternatives 5-11

Chapter 6, Cumulative Effects 6-1
6.1 Projects Considered in the Cumulative Analysis 6-1
6.2 Cumulative Effects Analysis 6-9

Chapter 7, Other CEQA Considerations 7-1
7.1 Significant Unavoidable Environmental Effects 7-1
7.2 Significant Irreversible Changes 7-2
7.3 Growth-Inducing Effects 7-2
7.4 Environmental Justice 7-4

Chapter 8, Report Preparation 8-1
8.1 Report Authors 8-1

Chapter 9, Mitigation Monitoring and Reporting Program 9-1

Appendices

A. Scoping Report A-1
B. Mailing List and Certificate of Service B-1
C. (EMF) Field Management Plan C-1
D. Air Quality and GHG Calculations D-1
E. Cultural Resources Technical Report E-1
F. Tribal Consultation Record F-1
G. Circle City and Mira Loma-Jefferson 66 kV Subtransmission Line Project Noise Supplement G-1

Page

List of Figures

2-1 Electrical Needs Area 2-2
2-2 Project Location 2-3
2-3a Existing and Proposed System Configuration for Circle City Substation 2-5
2-3b Existing and Proposed System Configuration for Mira Loma-Jefferson Subtransmission Line 2-6
2-4a Substation Layout 2-8
2-4b Proposed Circle City Substation Profile View 2-9
2-5 Proposed Source Lines 2-15
2-6 Mira Loma-Jefferson 66 kV Subtransmission Line Route (Revised) 2-16
2-7 Subtransmission Structures 2-17
2-8 Proposed Telecommunication Routes 2-25
2-9 Potential Staging Yard Locations 2-31
2-10 Typical Subtransmission Duct Bank 2-44
2-11 Typical Subtransmission Vault 2-45
2-12 Proposed Project Index Map, Map 1 of 10 2-73
2-13 Proposed Project Index Map, Map 2 of 10 2-74
2-14 Proposed Project Index Map, Map 3 of 10 2-75
2-15 Proposed Project Index Map, Map 4 of 10 2-76
2-16 Proposed Project Index Map, Map 5 of 10 2-77
2-17 Proposed Project Index Map, Map 6 of 10 2-78
2-18 Proposed Project Index Map, Map 7 of 10 2-79
2-19 Proposed Project Index Map, Map 8 of 10 2-80
2-20 Proposed Project Index Map, Map 9 of 10 2-81
2-21 Proposed Project Index Map, Map 10 of 10 2-82
3-1 Project Alternative Options 3-12
3-2a 66 kV Subtransmission Line Alternatives C1 and C2 3-15
3-2b 66 kV Subtransmission Line Alternative C3 (Revised) 3-16
3-3 Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Layout (Revised) 3-24
3-4 Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Plot Plan 3-25
3-5 Communications Conduit Trench Detail 3-27
3-6 66 kV Source Line and Substation Alternatives (Revised) 3-29
4.1-1 Regional Landscape Context 4.1-5
4.1-2 Photo Viewpoint Locations Map (Source Line Routes) 4.1-7
4.1-3 Photo Viewpoint Locations Map (Subtransmission Line) 4.1-8
4.1-4a Representative Photographs 1 and 2 ..... 4.1-9
4.1-4b Representative Photographs 3 and 4 ..... 4.1-10
4.1-4c Representative Photographs 5 and 6 ..... 4.1-11
4.1-4d Representative Photographs 7 and 8 ..... 4.1-12
4.1-4e Representative Photographs 9 and 10 ..... 4.1-13
4.1-4f Representative Photographs 11 and 12 ..... 4.1-14
4.1-4g Representative Photographs 13 and 14 ..... 4.1-15
4.1-4h Representative Photographs 15 and 16 ..... 4.1-16
4.1-4i Representative Photographs 17 and 18 ..... 4.1-17
4.1-4j Representative Photographs 19 and 20 ..... 4.1-18
4.1-4k Representative Photographs 21 and 22 ..... 4.1-19
4.1-4l Representative Photographs 23 and 24 ..... 4.1-20
4.1-4m Representative Photographs 25 and 26 ..... 4.1-21
4.1-4n Representative Photographs 27 and 28 ..... 4.1-22
4.1-4o Representative Photographs 29 and 30 ..... 4.1-23
4.1-4p Representative Photographs 31 and 32 ..... 4.1-24

Page

List of Figures (continued)

4.1-4q Representative Photographs 33 and 34 ..... 4.1-25
4.1-4r Representative Photographs 35 and 36 ..... 4.1-26
4.1-4s Representative Photographs 37 and 38 ..... 4.1-27
4.1-5 Existing View and Visual Simulation from Leeson Lane 4.1-40
4.1-6 Existing View and Visual Simulation from Grand Boulevard 4.1-41
4.1-7 Existing View and Visual Simulation from Interstate 15 ..... 4.1-42
4.1-8 Existing View and Visual Simulation from East 6th Street near Magnolia Avenue 4.1-43
4.1-9 Existing View and Visual Simulation from Magnolia Avenue near Sherborn Street 4.1-44
4.1-10 Existing View and Visual Simulation from River Road Park 4.1-45
4.1-11 Existing View and Visual Simulation from Hellman Avenue at Landerwood 4.1-46
4.1-12 Existing View and Visual Simulation from Huber Park 4.1-47
4.2-1 Important Farmland in the Project Vicinity 4.2-3
4.4-1 Vegetation Communities in the Project Area 4.4-4
4.4-2 Vegetation Communities in the Project Area 4.4-5
4.4-3 Vegetation Communities in the Project Area 4.4-6
4.4-4 Vegetation Communities in the Project Area 4.4-7
4.4-5 Vegetation Communities in the Project Area 4.4-8
4.4-6 Critical Habitat in the Project Area 4.4-14
4.5-1 Paleontological Potential of Geologic Formations 4.5-14
4.7-1 Earthquake Faults and Hazard Zones in the Project Vicinity (Revised) 4.7-2
4.7-2a Soil Types in the Northern Project Area 4.7-9
4.7-2b Soil Types in the Southern Project Area 4.7-10
4.7-3 Erosion Hazard and Liquefaction Susceptibility in the Project Area 4.7-12
4.9-1 Wildland Fire Threats in the Project Area 4.9-7
4.9-2 Airport Compatibility Zones in the Project Area 4.9-10
4.10-1 Surface Hydrology and Special Flood Hazard Areas in the Project Area 4.10-2
4.11-1 General Plan Land Use Designations in Corona and Norco 4.11-2
4.11-2 General Plan Land Use Designations in Ontario, Chino, and Eastvale 4.11-3
4.13-1 Noise Monitoring Location (Source Line Alignments) 4.13-6
4.13-2 Noise Monitoring Location (Subtransmission Line) 4.13-7
6-1 Cumulative Projects in the Project Vicinity 6-7

List of Tables

ES-1 Summary of Impacts of and Mitigation Measures for the Project ES-6
1-1a Electrical Needs Area Substation Capacity and Peak Demand by Year, Historic Data and Forecasts 1-3
1-1b Electrical Needs Area Substation Capacity and Peak Demand by Year, Historic Data and Forecasts for 2018 - 2017 1-3
1-1c N-1 Conditions: Mira Loma-Corona-Jefferson 66 kV Line (Outage of Mira Loma-Cleargen-Delgen 66 kV Line), Forecast for 2018-2027 1-6
1-1d Base Case Conditions: Mira Loma-Corona 66 kV Line, Forecast for 2018-2027 1-6
1-2 Summary of Potential Permit Requirements 1-8
2 1 Subtransmission Structure Quantity and Dimensions 2-21
2-2 Distribution Getaway Distances 2-21
2-3 Potential Staging Yards 2-29
2-4 Estimated Temporary and Permanent Land Disturbance 2-33

Page

List of Tables (continued)

2-5 Substation Ground Surface Improvement Materials and Volumes 2-36
2-6 Landfills and Recycling Centers Near the Project Site 2-48
2-7 Construction Equipment and Workforce Estimates 2-50
2-8 Proposed Construction Schedule 2-60
3-1 Summary of Significant Unavoidable (Class I) Environmental Impacts of the Project 3-5
3-2 Summary of Less Than Significant with Mitigation (Class II) Environmental Impacts of the Project 3-6
3-3 Summary of Alternatives Screening Analysis 3-8
4.1-1 Scenic Roadways within the Project Area 4.1-4
4.1-2 Summary of Project Components, Primary Viewers, Representative Photographs, and Visual Simulations 4.1-4
4.1-3 Summary of Visual Sensitivity Findings: Viewer Types, Visual Quality, and View Exposure 4.1-33
4.1-4 Guidelines for Determining Adverse Visual Impact Significance 4.1-38
4.2-1 Estimated Farmland Disturbance 4.2-8
4.3-1 Air Quality Data Summary (2012–2016) for the Study Area 4.3-4
4.3-2 NAAQS/CAAQS and Attainment Status for the Air Basin 4.3-8
4.3-3 SCAQMD Air Quality Significance Thresholds 4.3-11
4.3-4 Project Peak Daily Construction Emissions 4.3-16
4.3-5 Project Peak Daily Operation and Maintenance Emissions 4.3-19
4.3-6 Project Peak On-Site Construction Emissions 4.3-21
4.3-7 Maximum Increase in Carcinogenic Risk for Off-Site Sensitive Receptors 4.3-24
4.3-8 Alternative B Peak Daily Construction Emissions 4.3-27
4.3-9 Alternative C3 Peak Daily Construction Emissions 4.3-30
4.3-10 Alternative D1 Peak Daily Construction Emissions 4.3-32
4.3-11 Alternative D2 Peak On-Site Construction Emissions 4.3-33
4.4-1 Vegetation Communities in the Study Area 4.4-3
4.4-2 Focused List of Special-Status Species with Potential to Occur in the Proposed Project Area 4.4-15
4.4-3 Summary of Special-Status Species Surveys 4.4-23
4.4-4 Potentially Jurisdictional Aquatic Resources 4.4-29
4.4-5 Impacts to Sensitive Vegetation Communities 4.4-58
4.5-1 Previously Recorded Cultural Resources in Project Area 4.5-7
4.5-2 Geologic Formations Occurring within or Beneath the Project Area 4.5-12
4.5-3 Paleontological Potential of Geologic Formations 4.5-13
4.5-4 Paleontological Potential Criteria 4.5-22
4.7-1 Active Faults within 20 Miles of the Project 4.7-3
4.7-2 Project Area Soils 4.7-5
4.7-3 Modified Mercalli Intensity Scale 4.7-15
4.8-1 California GHG Emissions (million metric tons Co2e) 4.8-3
4.8-2 Project Construction GHG Emissions 4.8-11
4.8-3 Project Amortized Annual Emissions 4.8-12
4.9-1 Standard Environmental Records 4.9-3
4.9-2 Hazardous Materials Sites in the Vicinity of the Project 4.9-4
4.9-3 Hazardous Materials Sites in the Vicinity of Alternative C2 ..... 4.9-35
4.10-1 303(d) List of Impaired Water Bodies in the Project Vicinity 4.10-7
4.10-2 Beneficial Uses of Santa Ana River and Applicable Tributaries 4.10-9
4.11-1 Jurisdictions of the Project Sites and Alignments 4.11-4
4.13-1 Summary of Measured Ambient Noise Levels (dBA) at Sensitive Receptors 4.13-5
4.13-2 City of Chino Exterior Noise Limits 4.13-11

Page

List of Tables (continued)

4.13-3 City of Corona Maximum Allowable Stationary Source Noise Standards 4.13-12
4.13-4 City of Eastvale Exterior Noise Level Standards 4.13-13
4.13-5 City of Ontario Stationary Source Noise Standards 4.13-15
4.13-6 Construction Noise Time-of-Day Exemptions 4.13-17
4.13-7 Construction Equipment Noise Levels 4.13-21
4.13-8 Circle City Substation Construction Noise Estimates 4.13-22
4.13-9 Source Lines Construction Noise Estimates 4.13-23
4.13-10 Mira Loma-Jefferson 66 kV Line Construction Noise Estimates 4.13-24
4.14-1 2016 Population Estimates in the Project Area 4.14-1
4.14-2 Historic and Projected Population Growth in the Project Area, 2000 – 2020 ..... 4.14-2
4.14-3 2016 Housing Data Estimates in the Project Area 4.14-2
4.14-4 Household Estimates: 2008 to 2035 ..... 4.14-3
4.16-1 Parks within 1 Mile of the Proposed Project Alignments 4.16-2
4.17-1 Summary of Study Area Roadway Characteristics 4.17-2
4.18-1 Landfills and Recycling Centers Near the Project Site 4.18-4
4.18-2 Diversion Rates 4.18-7
4.18-3 2014 Jurisdictional per Capita Disposal Rates 4.18-7
5-1 Summary of significant Unavoidable (Class I) Environmental Impacts of the Project 5-3
5-2 Proposed Project vs. Alternatives Summary of Environmental Impact Conclusions 5-5
5-3 Subtransmission Service Objective Ranking of Alternatives and the Project 5-13
5-4 Distribution Service Objective Ranking of Alternatives and the Project 5-15
5-~~3~~5 Construction Cost Estimates for the Proposed Project and Environmentally Superior Alternative 5-17
6-1 Cumulative Scenario – Approved and Pending Projects 6-3

ACRONYMS AND ABBREVIATIONS

A-1	Light Agriculture
A-1-20	Agricultural Low Density 20,000 square feet
A-2	Heavy Agriculture
AB	Assembly Bill
AC	alternating current
ACSR	Aluminum Conductor Steel Reinforced
AG/OS-N	Agriculture/Open Space-Natural
ags	above ground surface
ALUC	Airport Land Use Plan
amsl	above mean sea level
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
ASCE	American Society of Civil Engineers
AST	Aboveground Storage Tank
BACT	Best Available Control Technology
bgs	Below Ground Surface
BLM	Bureau of Land Management
BMP	Best Management Practice
BP	Before Present
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CAO	Cleanup and Abatement Orders
CalOSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations

C&D	construction and demolition
CDA	Chino Basin Desalter Authority
CDC	California Department of Conservation
CDO	Cease and Desist Orders
CDOF	California Department of Finance
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CHP	California Highway Patrol
CIUCC	California Inter-Utility Coordinating Committee
CIWMB	California Integrated Waste Management Board
CIWMP	Countywide Integrated Waste Management Plan
CN	Neighborhood Commercial
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
COA	Conditions of Approval
COORACTS	Corrective Actions
CPUC	California Public Utilities Commission
CRACO	County of Riverside Agricultural Commissioner's Office
CSBDAWM	County of San Bernardino, Department of Agriculture/ Weight and Measures
CSP	California State Parks
CUPA	Certified Unified Program Agency
CVIFD	Chino Valley Independent Fire District
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DBESP	Determination of Biologically Equivalent of Superior Preservation
DC	direct current
DHS	California Department of Health Services
DOC	Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources

DPM	diesel particulate matter
DSFF	Delhi Sands Flower-Loving Fly
DSM	demand-side management
DTSC	Department of Toxic Substance Control
DWR	Department of Water Resources
EDD	Employment Development Department
EIA	U.S Energy Information Administration
EIC	Eastern information Center
EIR	Environmental Impact Report
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Fields
EMS	Emergency Medical Services
EMT	Emergency Medical Technicians
ENA	Electrical Needs Area
EPRI	Electric Power Research Institute
ER	Estate Residential Zone
ERNS	Emergency Response Notification System
ESA	Environmentally Science Associates
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FP1	Flood Plain
FRC	fault return conductor
ft	foot
FTA	Federal Transit Administration
g	gravity
GHG	greenhouse gas
GIS	Geographic Information System
GO	General Order
GPS	Global Positioning System
GWh	gigawatt-hour
H_2S	hydrogen sulfide
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HMMD	Hazardous Materials Management Division
HMMP	Hazardous Materials Management Plan

HRA	health risk assessment
HVAC	heating ventilation and air-conditioning
HWCL	Hazardous Waste Control Law
Hz	hertz
I	Interstate
IBC	International Building Code
IEUA	Inland Empire Utilities Agency
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
JARPD	Jurupa Area Recreation and Park District
JCSD	Jurupa Community Services District
kcmil	thousand circular mills
KOP	Key Observation Point
kV	kilovolt
lb	pound
LDR	Low Density Residential
L_{eq}	equivalent sound level
LF	landfills
L_{max}	maximum sound level
L_{min}	minimum sound level
L_n	percentile-exceeded sound level
L_p	average sound pressure level
LQG	Large Quantity Generators
LSAA	Lake and Streambed Alteration Agreement
LST	Localized Significance Thresholds
LUST	Leaking Underground Storage Tank
L_w	sound power level
LWS	Light Weight Steel
MBTA	Migratory Bird Treaty Act
MDR	Medium Density Residential
MEER	Mechanical and Electrical Equipment Room
MEIR	maximum exposed individual resident
MLD	Most Likely Descendent
MMI	Modified Mercalli Intensity
MMRCP	Mitigation Monitoring, Reporting, and Compliance Program
MR	Mineral Resources
MRF	Material Recovery Facility
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MSDS	Material Safety Data Sheet

MSHCP	Multiple Species Habitat Conservation Plan
MU	Mixed Use
MVA	megavolt-ampere
MW	megawatt
MWD	Metropolitan Water District of Southern California
MWh	megawatt hours
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OAG	Office of the California Attorney General
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHGW	overhead ground wire
OHP	Office of Historic Preservation
OHWM	ordinary high water mark
OPGW	overhead optical ground wire
OS	Open Space
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCC	Portland cement concrete
PEA	Proponent's Environmental Assessment
PFC	perfluorocarbon
PFYC	Potential Fossil Yield Classification
PGA	peak ground acceleration
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
PPV	peak particle velocity
PRC	Public Resources Code
PRD	Planned Residential Developments

PRIMP	Paleontological resource impact mitigation program
PSD	Prevention of Significant Deterioration
PSE	Participating Special Entity
PSHA	Probabilistic Seismic Hazard Assessment
PTC	Permit to Construct
PV	photovoltaic
PVC	polyvinyl chloride
RCA	Regional Conservation Authority
RCFCWCD	Riverside County Flood Control and Water Conservation District
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
REC	Recognized Environmental Conditions
REL	reference exposure level
RHNA	Regional Housing Needs Assessment
RMS	root mean square
ROC	reactive organic compounds
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTA	Riverside Transit Agency
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SAC	Stranded Aluminum Conductor
SARWQCB	Santa Ana Regional Water Quality Control Board
SB	Senate Bill
SBAIC	San Bernardino Archaeological Information Center
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SDC	Seismic Design Category
SDS	Safety Data Sheets
SDWA	Safe Drinking Water Act
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPCC	Spill Prevention and Control Countermeasures
SQG	Small Quantity Generators
SR	State Route
SRA	State Recreation Area

SVP	Society of Vertebrate Paleontology
SWF	Solid Waste Facilities
SWFL	Southwestern Willow Flycatcher
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
TSDF	Treatment, Storage, and Disposal Facility
TSP	Tubular Steel Pole
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VdB	decibel notation
VOC	volatile organic compound
VP	photograph viewpoints
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
WMWD	Western Municipal Water District
WQMP	Water Quality Management Plan
WRCRWA	Western Riverside County Regional Wastewater Authority

This page intentionally left blank

EXECUTIVE SUMMARY

ES.1 Introduction

Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.15-12-007), filed on December 4, 2015, requests a Permit to Construct (PTC) the Circle City Substation and Mira Loma-Jefferson 66 kilovolt (kV) Subtransmission Line Project (Project) and related components pursuant to CPUC General Order (GO) No. 131-D. SCE's application for a PTC included the Proponent's Environmental Assessment (PEA), which SCE prepared pursuant to Rule 2.4 of the CPUC's Rules of Practice and Procedure.

SCE has identified the electrical needs area (ENA) to be served by the Project as including the northwestern Riverside County area, including the cities of Corona and Norco and the surrounding area of unincorporated Riverside County. The current combined operating capacity of the substations (i.e., the Corona, Jefferson, and Chase substations) that serve the ENA for the proposed Project is 434.6 MVA under a normal system configuration. SCE expects its projected electrical demand to exceed the maximum operating limits by 2024, which would affect SCE's ability to safely and reliably serve the electrical demand within the ENA if unaddressed. Therefore, SCE proposes development of a new subtransmission/distribution substation in the City of Corona referred to as Circle City Substation that would address the forecasted electrical maximum operating limit shortfall in the ENA. SCE also proposes new 66 kV line construction and reconfiguration of the existing Mira Loma-Corona–Jefferson 66 kV Line, which would create the Mira Loma-Jefferson and Mira Loma-Corona #2 66 kV lines to address subtransmission capacity issues. The resulting Mira Loma-Jefferson and Mira Loma-Corona #2 lines are collectively referred to as the Mira Loma-Jefferson 66 kV Subtransmission Line. The proposed Project and alternatives are considered in light of this information.

This EIR examines all of the resource areas in the California Environmental Quality Act (CEQA) Guidelines Appendix G Checklist and Appendix F, including: Aesthetics; Agriculture and Forestry Resources; Air Quality; Biological Resources; Cultural Resources; Energy Conservation; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; Transportation and Traffic; and Utilities and Service Systems.

This Executive Summary includes the following sections:

- Introduction (ES.1);
- Project Objectives (ES.2);
- Project Description (ES.3);

- Alternatives (ES.4);
- Environmentally Superior Alternative (ES.5);
- Areas of Controversy and Issues to be Resolved (ES.6); and
- Summary of Impacts and Mitigation Measures (ES.7).

ES.2 Project Objectives

SCE identified its objectives for the proposed Project in its PEA as follows:

- Serve current and long-term peak electrical demand requirements in the electrical needs area (ENA) as soon as possible after receipt of applicable permits;
- Enhance electrical system reliability by adding transformation and circuitry to serve increased electrical demand and by increasing operational flexibility;
- Construct the new electrical facilities in close proximity to the electrical demand to effectively and efficiently serve the ENA;
- Meet the proposed Project need while minimizing environmental impacts;
- Meet the proposed Project need in a cost-effective manner; and
- Design and construct the proposed Project in conformance with SCE's current engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.

Upon consideration of the Applicant's objectives, electrical demand projections, and other laws and regulations, this EIR identifies the following as the CPUC's basic CEQA objectives:

- Subtransmission Service Objective - Maintain electrical system reliability by addressing overloads on the Mira Loma-Corona-Jefferson and Mira Loma-Corona 66 kV subtransmission lines that could occur under peak electrical demand conditions during the 2017 to 2026 forecast period; and
- Distribution Service Objective - Maintain electrical system reliability by ensuring ~~Ensure~~ that the Corona, Jefferson, and Chase substations do not exceed capacity under peak electrical demand conditions through the 2017 to 2026 forecast period.

The CPUC considers these two CEQA objectives to be the underlying purpose for the proposed Project. Under the proposed Project, the Subtransmission Service Objective would be addressed by constructing the proposed Mira Loma-Jefferson subtransmission line and associated facilities; and the Distribution Service Objective would be addressed by the construction of the Circle City Substation, its source lines, and other associated facilities. Each of the alternatives considered is designed to address at least one of these basic objectives. Therefore, each Project alternative would have to meet at least one of these two objectives in order to be considered a viable alternative to the proposed Project.

ES.3 Project Description

Project Components

The Circle City Substation, an unstaffed and automated 66/12 kilovolt (kV) low-profile 56 megavolt-ampere (MVA) substation would be constructed on a 19.5-acre site in the City of Corona. The substation would be comprised of a 420-foot by 387-foot facility located on approximately 11.08 acres of the site. It would include a ~~steel~~ low-profile 66 kV steel switchrack, two 28 MVA 66/12 kV transformers, a 12 kV ~~low-profile~~ steel switchrack, two 12 kV 4.8 MVA reactive capacitor banks, a prefabricated ~~steel~~ Mechanical and Electrical Equipment Room, a permanent restroom, and a new road providing access from Leeson Lane. It would be located approximately 0.25 mile south of the corner of Magnolia Avenue and East 6th Street and would be enclosed on all sides by an 8-foot-high perimeter concrete masonry unit block wall with a light tan color.

In addition, the Project would include construction of four new 66 kV source lines, which would be in two double-circuit configurations and combinations of overhead and underground construction, and construction of the 10.9-mile 66 kV Mira Loma-Jefferson subtransmission line. The source lines (Databank and Pedley) would be located in the City of Corona, and the subtransmission line would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario.

The proposed Project also consists of: upgrades of the existing Mira Loma Substation to accommodate the new Mira Loma-Jefferson Subtransmission Line; construction of approximately six new underground 12 kV distribution getaways exiting the proposed Circle City Substation; relocation of approximately 1.9 miles of an existing 33 kV distribution line to an underground position; and installation of telecommunications facilities to connect the proposed Project to SCE's existing telecommunications system.

Applicant Proposed Measures

SCE has identified 19 Applicant-Proposed Measures (APMs) that it has developed to avoid or reduce anticipated potential impacts of the Project on aesthetics, air quality, biological resources, paleontological resources, hazards and hazardous materials, and transportation. SCE would conduct the design, construction, operation, and maintenance of the Project in accordance with its APMs. For a complete description of each APM, see Chapter 2, *Project Description*, Section 2.10, *Applicant Proposed Measures*. Relevant APMs are also listed in applicable resource sections in Chapter 4.

Moreover, the Project Description incorporates procedures or protocols which directly relate to how the proposed Project would be constructed, and which were considered as part of the proposed Project during preparation of this EIR. The Project Description, therefore, will become part of the Mitigation Monitoring, Reporting and Compliance Program when adopted by the CPUC if the

Project or an alternative is approved, and the construction components and methods therein would be monitored by the CPUC.

ES.4 Alternatives

Several alternatives to the Project have been selected for detailed analysis in the EIR, including the No Project alternative, as required by CEQA. The alternatives are organized based on whether they primarily address the Subtransmission Service Objective or the Distribution Service Objective. The alternatives are listed below and are described in detail in Section 3.4:

- Alternative A: No Project;

Subtransmission Service Objective Alternatives

- Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation;
- Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue;
- Alternative C2: 66 kV Subtransmission Line along Archibald Avenue; and
- Alternative C3: 66 kV Subtransmission-Level Battery Storage.

Distribution Service Objective Alternatives

- Alternative D1: 12 kV Distribution-Level Battery Storage;
- Alternative D2: 66/12 kV Substation Site Alternative;
- Alternative E1: Quarry Street 66 kV Source Lines Segment;
- Alternative E2: Underground Pedley 66 kV Source Lines from Interstate 15 to Circle City Substation;
- Alternative E3: Southern 66 kV Source Lines Alignment; and
- Alternative E4: Databank 66 kV Source Lines Only.

The CPUC may consider various combinations of the above alternatives when deciding whether or not to approve the proposed Project or one or more of the alternatives to address the identified objectives. The three main components of the Project include: the subtransmission line (which addresses the Substation Service Objective), the substation, and the substation source lines (which address the Distribution Service Objective).

ES.5 Environmentally Superior Alternative

For the Subtransmission Service Objective, the Environmentally Superior Alternative is Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue. For the Distribution Service Objective, the Environmentally Superior Alternative is Alternative D1: 12 kV Distribution-Level Battery Storage. Refer to Section 5.3, Environmentally Superior Alternative, for additional information.

ES.6 Areas of Controversy and Issues to be Resolved

Areas of controversy known to the lead agency, including issues raised by agencies and the public, must be identified in the Executive Summary of an EIR (14 Cal. Code Regs. §15123). The scoping period for this Project began on January 29, 2016, and closed on February 29, 2016.

A Scoping Report prepared for the Project is provided in Appendix A. It includes all of the comments received during the scoping period, and describes how each was addressed. The overarching themes in the comments received relate to the following:

- Aesthetic impacts of substation and new aboveground subtransmission lines from residences, commercial areas, and roadways.
- Biological resources and potential impacts to habitat for wildlife, including the Santa Ana River and Prado Regional Park and Nature Preserve.
- Hazards relating to a fault and high winds in the Project area and health concerns about transmission lines.
- Hydrology and water quality, including potential impacts related to crossing the Santa Ana River.
- Land use, including potential conflicts with local land use policies.
- Transportation and traffic impacts of the Project contributing to congestion; cumulative traffic impacts in particular.
- Alternatives, including the installation of Project components underground.

ES.7 Summary of Impacts and Mitigation Measures

Table ES-1 summarizes each of the environmental impacts of the Project and mitigation measures recommended to avoid or substantially reduce them. Impacts of the Project are analyzed in detail in Chapter 4, *Environmental Analysis*. Resource areas evaluated include:

4.1 Aesthetics
4.2 Agriculture and Forestry Resources
4.3 Air Quality
4.4 Biological Resources
4.5 Cultural Resources
4.6 Energy Conservation
4.7 Geology and Soils
4.8 Greenhouse Gas Emissions
4.9 Hazards and Hazardous Materials
4.10 Hydrology and Water Quality
4.11 Land Use and Planning
4.12 Mineral Resources
4.13 Noise
4.14 Population and Housing
4.15 Public Services
4.16 Recreation
4.17 Transportation/Traffic
4.18 Utilities and Service Systems

TABLE ES-1
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
1. Aesthetics			
Impact 4.1-1: The Project could adversely affect scenic vistas.	Class I	**Mitigation Measure 4.1-1:** SCE and/or its contractors shall use subtransmission line conductors that are non-specular and non-reflective and insulators that are non-reflective.	Significant and Unavoidable
Impact 4.1-2: Construction of the Project could degrade the existing visual character or quality of the sites and their surroundings during the construction period.	Class III	None required.	Less than Significant
Impact 4.1-3: Operation of the Project could substantially degrade the existing visual character or quality of the site and its surroundings.	Class I	Implement Mitigation Measure 4.1-1.	Significant and Unavoidable
Impact 4.1-4: Construction and operation of the Project would create new sources of light and/or glare that could adversely affect day or nighttime views in the area.	Class II	Implement Mitigation Measure 4.1-1.	Less than Significant with Mitigation
2. Agriculture and Forestry Resources			
Impact 4.2-1: The Project would convert Farmland to non-agricultural use.	Class II	**Mitigation Measure 4.2-1:** Prior to commencement of construction activities, SCE shall obtain permanent agricultural conservation easements at a one to one (1:1) ratio for Prime Farmland or Unique Farmland to be permanently converted by the Project. Conservation easements shall be on land within San Bernardino County or Riverside County of at least equal quality and size as land disturbed by the Project, as determined by the CPUC. Mitigation via agricultural conservation easement shall be satisfied under the following conditions: 1. SCE shall acquire farmland and shall establish an easement for the portion of the land that will no longer be used for agricultural land equal to the acreage converted. SCE shall provide evidence to the CPUC documenting the easement acquisition prior to the commencement of construction activities on the Farmland to be converted. The acquired easement shall be in an area designated for long-term future agricultural use; or 2. SCE shall pay a fee equal to or greater than the value of a previous farmland conversion transaction in the planning area plus the estimated cost of legal appraisal and other costs, including staff time, to acquire property for agricultural mitigation. The fee shall be used for farmland mitigation purposes, with priority given to lands with prime agricultural soils and habitat value. SCE shall provide evidence to the CPUC documenting fee payment prior to the commencement of construction activities on the Farmland to be converted.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
3. Air Quality			
Impact 4.3-1: Construction activities would generate pollutant emissions that would conflict or obstruct implementation of the applicable air quality plan.	Class I	Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).	Significant and Unavoidable
Impact 4.3-2: Construction activities would generate pollutant emissions that would contribute substantially to an existing or projected air quality violation.	Class I	**Mitigation Measure 4.3-2a: Fugitive Dust Controls.** The following fugitive dust control measures shall be implemented during the construction phase by SCE and/or its construction contractors: • Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities. • Use a gravel apron on unpaved truck exit routes, 25 feet long by road width, to reduce mud/dirt trackout; • Graded and/or excavated inactive areas of the construction site shall be monitored by SCAQMD air district or approved third party at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally-safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally-safe dust suppressants, to prevent excessive fugitive dust; • During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard off site. Dust emissions that are visible off site would be considered as one factor indicating a potential nuisance or hazard. The site superintendent/supervisor shall use his/her discretion in conjunction with the SCAQMD in determining when winds are excessive; • Require paved streets that adjoin unpaved roads where vehicles would be entering and exiting to be swept by Rule 1186 compliant PM10 efficient vacuum units (14-day frequency); • All trucks hauling dirt, sand, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of at least 12 inches;	Significant and Unavoidable

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
3. Air Quality (cont.)			
		• Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations. **Mitigation Measure 4.3-2b: Construction Equipment Exhaust Reductions.** For all diesel-fueled off-road construction equipment, SCE shall make a good faith effort to use available construction equipment that meets Tier 4, the highest USEPA-certified tiered emission standard. An Exhaust Emissions Control Plan that identifies each off-road unit's certified tier specification and Best Available Control Technology (BACT) shall be submitted to the CPUC for review and approval at least 30 days prior to commencement of construction activities. Construction activities cannot commence until the Plan has been approved. For all pieces of equipment that would not meet Tier 4 emission standards, the Exhaust Emissions Control Plan shall include recent documentation from at least two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment. In the event that SCE is not able to identify each piece of equipment 30 days before commencement of construction activities due to unforeseeable construction equipment availability. SCE shall maintain an equipment log that lists the equipment identification number, certified tier and BACT specification, California Air Resources Board (CARB) or South Coast Air Quality Management District (SCAQMD) operating permit specifications, and documents availability of Tier 4 equipment from rental companies, as applicable, for each piece of diesel-fueled off-road construction equipment that is not identified in the Exhaust Emissions Control Plan due to unforeseeable availability issues. The log shall be submitted to the CPUC for review and approval at least 1 week before the commencement of construction activities. Construction shall not commence until SCE confirms that all diesel equipment are included in the Exhaust Emissions Control Plan or until CPUC approves the equipment log. An updated log shall be submitted to the CPUC at least 2 days prior to when any new equipment is brought to or removed from a project work site. New equipment cannot operate at the site until the updated equipment log has been approved by the CPUC.	
Impact 4.3-3: Operation and maintenance activities would generate pollutant emissions that could contribute to an existing or projected air quality violation.	Class III	None required.	Less than Significant

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
3. Air Quality (cont.)			
Impact 4.3-4: Construction activities would result in emissions of PM10 and NOx that would be cumulatively considerable**.**	Class I	Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).	Significant and Unavoidable
Impact 4.3-5: Operation and maintenance activities would result in emissions of criteria pollutants that would not be cumulatively considerable.	Class III	None required.	Less than Significant
Impact 4.3-6: Construction activities would generate emissions of criteria pollutants and precursors, potentially exposing sensitive receptors to harmful pollutant concentrations.	Class I	Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).	Significant and Unavoidable
Impact 4.3-7: Construction activities would generate emissions of Toxic Air Contaminants, potentially exposing sensitive receptors to harmful pollutant concentrations.	Class II	**Mitigation Measure 4.3-7**: **Use of Tier-3 Engines at the Circle City Substation Site**. SCE (and/or its construction contractor(s)) shall ensure that at all diesel-powered equipment used during construction activities at Circle City Substation meets at least USEPA-certified Tier 3 emissions standards, or is otherwise equipped with Level 3 diesel particulate filters (DPFs). An initial listing that identifies each off-road unit's certified tier specification and/or DPF status to be operated at the Circle City Substation shall be submitted to the CPUC for review and approval prior to commencement of construction activities at the Circle City Substation site. Construction activities at the Circle City Substation site shall not commence until the equipment listing has been approved by the CPUC. As SCE requires new or replacement construction equipment at the Circle City Substation site, SCE shall submit verification of the certified engine tier or Level 3 DPF retrofit prior to use at the site.	Less than Significant with mitigation
Impact 4.3-8: Construction activities could expose local sensitive receptors to *Coccidioides immitis* spores.	Class II	Implement Mitigation Measure 4.3-2a (Fugitive Dust Controls).	Less than Significant with Mitigation
Impact 4.3-9: Operation and maintenance activities would generate emissions of Toxic Air Contaminants but would not expose sensitive receptors to harmful pollutant concentrations.	Class III	None required.	Less than Significant
Impact 4.3-10: Construction and operation would not create objectionable odors.	Class III	None required.	Less than Significant

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources			
Impact 4.4-1: Construction activities would result in adverse impacts to special-status plants, if present.	Class II	**Mitigation Measure 4.4-1a**: In portions of the alignments and work areas that have not been surveyed for special-status plants, SCE and/or its contractors shall complete focused plant surveys following CDFW and USFWS special-status plant survey guidelines. Surveys shall document the location, extent, and size of rare plant populations in the study area for each project component, and shall be used to inform the planned avoidance of special-status plant populations whenever possible. Based on focused plant survey findings, to the extent feasible, the final project design shall minimize impacts on known special-status plant populations within and adjacent to the construction footprints, with complete avoidance of any federal or State-listed plant species. SCE and/or its contractors shall design facilities to avoid sensitive plant populations whenever possible, shall install exclusion fencing around sensitive plant populations with as large a buffer as possible to minimize the potential for direct and indirect impacts. **Mitigation Measure 4.4-1b:** To supplement special-status plant protection actions provided by APM BIO-02 in areas where avoidance of non-listed plant species is not feasible or not covered under the MSHCP, SCE and/or its contractors shall compensate for the loss through plant salvage and replanting, as follows: A qualified ecologist shall develop a Restoration and Mitigation Plan according to CDFW guidelines and in coordination with CDFW. At minimum, the plan shall include collection of complete plants or reproductive structures (as appropriate) from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, proposed restoration techniques for temporarily disturbed occurrences, an assessment of potential transplant and enhancement sites, a description of performance criteria (e.g., establishment of a comparably-sized plant population; 80 percent survival after 5 years), and a monitoring program of sufficient duration (e.g., 5 years) to follow the progress of transplanted or seeded individuals, and contingency measures to be implemented in the event that the project does not achieve the year 5 success criteria. If impacts to rare plants are covered under the MSHCP, with SCE participation, then this measure would not apply.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-2: Construction activities would result in adverse impacts to special-status reptiles and amphibians, if present.	Class II	**Mitigation Measure 4.4-2:** Within areas that provide potentially suitable habitat for special-status amphibians and reptiles, SCE and/or its contractors shall have a qualified wildlife biologist perform preconstruction surveys no more than 24 hours prior to initial ground disturbance to identify the potential presence of western pond turtle, coast horned lizard, silvery legless lizard, two-striped garter snake, south coast garter snake, and western spadefoot. If any of these species are identified during surveys within the immediate construction area footprint, individuals shall be relocated from work areas by an individual who is authorized by CDFW to undertake species relocation. A suitable relocation area shall be identified and a qualified biologist with appropriate CDFW approvals shall relocate animals from the work area.	Less than Significant with Mitigation
Impact 4.4-3: Construction activities would result in adverse impacts to Riverside fairy shrimp and vernal pool fairy shrimp, if present.	Class II	**Mitigation Measure 4.4-3a:** If the USFWS accepts the current negative survey findings for special-status fairy shrimp in the Project area under the prior survey protocol, no further action is needed. Otherwise, within areas that provide potentially suitable vernal pool habitat for special-status fairy shrimp, vernal pool surveys in accordance with the revised USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS, 2015) shall be conducted. Portions of the Project sites fall within the Survey Zone C for listed large branchiopods. The revised protocol requires one wet season and one dry season survey over a three-year period and is summarized as follows: *Wet Season Survey for Survey Zone C* • All potential habitats must be adequately sampled at 7-day intervals after initial inundation of habitat. • Sampling will continue within each potential habitat until it dries or a minimum of 120 consecutive days of inundation has occurred. • Sampling will be reinitiated within 7 days of an individual habitat drying and inundating during the same wet season. • A single wet season survey may be considered unreliable at any location if moderate to extreme drought conditions persist through the wet season as determined by the National Oceanic and Atmospheric Administration (NOAA) records of the Palmer drought indices. • In order to increase the probability of detection of all possible co-occurring species, USFWS may request one subsequent complete wet season sampling survey be conducted to complete survey requirements. This would likely be required if the dry season survey results indicated branchiopods were present where a previous wet season survey found no branchiopods.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-3 (cont.)		*Dry Season Survey* • Dry season soil/substrate sampling shall not be conducted at any Project site unless SCE receives prior authorization from the USFWS. • Soil (substrate) shall be collected when it is dry to avoid damaging or destroying listed large branchiopod eggs (also known as cysts or resting eggs) and other special-status vernal pool species. • The number of soil/substrate samples and the amount of soil/substrate collected per feature shall be proportional to the size of the feature. • Soil/Substrate shall be collected mainly from the lowest topographic areas within the feature sampled. If listed branchiopods are detected, USFWS shall be notified within 10 working days. Upon completion of protocol surveys the permittee shall submit a report no more than 90 days after the last wet season field visit or after completion of analysis of dry season samples to USFWS. **Mitigation Measure 4.4-3b:** If vernal pool fairy shrimp or Riverside fairy shrimp are identified in the Project area and impacts to occupied pools cannot be avoided, SCE shall mitigate for impacts to vernal pool fairy shrimp habitat and comply with the requirements of the FESA through one or more of the following steps to provide compensatory habitat: (a) participation in the MSHCP to obtain take coverage for identified species, (b) salvage of cysts and creation of replacement pool habitat in the local area at a replacement ratio of at least 3:1, (c) restoration of affected pools onsite after the completion of construction, or (d) acquisition of credits from an approved mitigation bank within the Project region. If occupied habitat for the above species is encountered at a Project site, to mitigate for temporary or permanent loss of aquatic sites, SCE shall implement the following measures: ***Habitat Compensation or Restoration*** • SCE shall mitigate for the loss of branchiopod habitat that will be filled or otherwise directly affected by the project by providing compensatory habitat; or, • SCE shall develop and implement a mitigation, monitoring, and management plan, with input from regulatory agencies that shall outline long-term management strategies and performance standards to be attained to compensate for habitat losses resulting from the project. At a minimum, the plan shall include standards for mitigation	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-3 (cont.)		site selection and construction specifications for mitigation sites, a description of site conditions including aerial maps, an analysis of local branchiopod habitat, and performance criteria by which site quality can be assessed over time (e.g., size, vegetation species present, date of initial ponding, ponding duration, and wildlife usage). A monitoring program will be established to track the development of habitat conditions that are conducive to the establishment of vernal pool branchiopods. • To the greatest practicable extent, SCE or its contractors shall construct compensation habitat (i.e., replacement pools) before habitat disturbances are incurred; or directly within the project footprint after construction. A qualified biologist shall ensure that ponds are functioning as designed. ***Species Protection During Construction*** • SCE shall submit the name and credentials of a biologist qualified to act as construction monitor to USFWS for approval at least 15 days before construction work begins. • If restoration is proposed to compensate for habitat loss, w~~W~~ith concurrence from the USFWS, a USFWS-approved biologist shall salvage soils from sites that are known to support vernal pool branchiopods at least 2 weeks before the onset of construction, or during the preceding dry season if pools are anticipated to hold water when construction begins. The salvaged soil samples will be stored and used to inoculate created pools once minimum performance standards are met at these locations. • A USFWS-approved biologist shall be present at each active work site within 0.5-mile of potential fairy shrimp habitat until habitat disturbance has been completed. Thereafter, the contractor or SCE shall designate a person to monitor onsite compliance with all minimization measures. A USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements. • A USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of fairy shrimp and their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve fairy shrimp as they relate to the project, and the boundaries within which the project construction shall occur. • All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any fairy shrimp habitat.	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-4: Construction activities would result in adverse impacts to special-status fish, if present.	Class II	**Mitigation 4.4-4:** This measure shall apply if SCE does not participate in the MSHCP. SCE shall coordinate with the USFWS to ensure that earthwork in the Santa Ana River corridor either: 1) does not impact the Santa Ana sucker or habitat for this species, or; 2) any Santa Ana sucker relocation or habitat modification that may affect this species is performed with advance USFWS knowledge and approval. In addition, SCE shall implement the following measures: • A qualified biologist who holds the appropriate Section 10(a)(1)(A) permit shall survey for Santa Ana sucker following the USFWS protocol within 14 days prior to in-water work to determine the potential presence of this species. Surveys shall also include presence/absence determinations for arroyo chub and Santa Ana Speckled dace. • A qualified biologist shall supervise the installation of barrier nets to be installed in open water upstream and downstream from the work area. The qualified biologist shall check the integrity of barrier nets daily to ensure there are no gaps that may allow fish passage into the work area. • The relocation of Santa Ana suckers from within isolated aquatic work areas shall only be performed by a USFWS-approved biologist(s). Work shall not proceed until a qualified biologist has confirmed that special-status fish are not present within the isolated work area.	Less than Significant with Mitigation
Impact 4.4-5: Construction activities would result in adverse impacts to least Bell's vireo, Southwestern willow flycatcher, yellow-billed cuckoo, and their habitats.	Class II	**Mitigation Measure 4.4-5a:** APM BIO-06 shall also be applied to protect southwestern willow flycatcher should this species be encountered during pre-construction surveys or Project activities. **Mitigation Measure 4.4-5b:** Should SCE not opt to participate in the MSHCP, the following additional measures shall be followed to avoid, minimize, and/or mitigate impacts to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo and their habitat: • If USFWS/CDFW protocol-level surveys document the presence of least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo within active work areas or areas within 500 feet, impacts to these species would be mitigated to less than significant if occupied riparian forest is avoided and construction within 500 feet of occupied habitat occurs only between September 15 and March 15.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-5 (cont.)		• Occupied and potentially occupied habitat for least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo shall be avoided to the extent feasible. If complete avoidance of occupied or potentially occupied habitat is not feasible, additional or alternative measures to avoid or minimize adverse project effects to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo may be required by the USFWS and CDFW. However, if the above measures cannot be implemented such that "take" of these species is fully avoided, authorization shall be obtained from the USFWS and CDFW prior to initiating work within 500 feet of occupied habitat. Such measures may include habitat restoration requirements, as described in Mitigation Measure 4.4-5c. **Mitigation Measure 4.4-5c:** As identified in APMs BIO-06 and BIO-10, SCE has committed to prepare a riparian mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation report (DBESP report) as part of the Participating Special Entity (PSE) review process under the MSHCP. SCE shall implement this plan to restore impacted habitat values for the least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo in the Santa Ana River corridor. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency." The DBESP report guidelines are highly specific regarding the magnitude of anticipated impacts and restoration requirements, some of which include: • Quantification of unavoidable impacts to riparian/riverine areas associated with the project, including direct and indirect effects. • Functions and values assessment focusing on how they will affect downstream values related to Conserved Species. • Habitat assessments for least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo. If the site supports suitable habitat, focused surveys will also be required. • A written description project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through restoration or enhancement. • A description of mitigation measures to ensure long-term conservation through deed restriction, conservation easement or other appropriate mechanism. • Restoration measures shall consider:	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-5 (cont.)		a) Restoration and/or enhancement of on-site habitat; b) Restoration and/or enhancement of off-site habitat; c) Habitat that is restored or enhanced will be able to provide biological, hydrological, and biogeochemical functions to a level consistent with those being lost on-site; and d) Upon reaching maturity and satisfying the criteria established for mitigation areas, the goals for restoration shall include: i. All habitat mitigation areas will be self-sustaining in perpetuity and contribute to regional biodiversity ii. All habitat mitigation will not require outside input for recruitment and propagation of plant species iii. Nutrients will be cycled within the mitigation areas through natural processes iv. The entire range of biological components, processes, and interactions will be present in each community; and v. Natural processes of ecological succession will be allowed to occur.	
Impact 4.4-6: Construction activities would result in adverse impacts to burrowing owl.	Class III	None required.	Less than Significant
Impact 4.4-7: Construction activities would result in adverse impacts to nesting birds and raptors protected under MBTA, BGEPA, and Fish and Game Code.	Class III	None required.	Less than Significant
Impact 4.4-8: Installation of power lines and poles would result in collisions and/or electrocution of birds, especially raptors.	Class III	None required.	Less than Significant
Impact 4.4-9: Construction activities would temporarily result in adverse impacts to sensitive natural communities, such as willow riparian forest, coastal sage scrub, and grassland.	Class II	Implement Mitigation Measure 4.4-5c. **Mitigation Measure 4.4-9a:** Should SCE opt to participate in the MSHCP, a~~A~~pply Restoration Planning Methodology identified in Mitigation Measure 4.4-5c to Non-riparian Special-status Vegetation that is not fully covered in the MSHCP~~, which includes Riversidean Sage Scrub~~. **Mitigation Measure 4.4-9b:** To mitigate impacts to riparian habitat, SCE shall prepare a project-wide 1602 Lake and Streambed Alteration Agreement (LSAA) in accordance with CDFW requirements. SCE shall include mitigation measures that are sufficient to reduce direct and	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-9 (cont.)		indirect impacts to willow riparian forest habitat to less than significant. The LSAA may include some or all of the following: • Avoid impacts to riparian habitat where possible by shifting staging areas or adjusting construction timing; • Minimize impacts; • Remove invasive riparian species; • Purchase off-site habitat credits; • Create and/or restore natural communities and prepare a monitoring and maintenance plan for these areas (consistent with methodology discussed in Mitigation Measure 4.4-5b); • Situate staging areas as far away from sensitive habitats as is feasible; • Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting; and • Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host least Bell's vireo, southwestern willow flycatcher, or yellow-billed cuckoo.	
Impact 4.4-10: Construction activities would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the federal CWA, and the potential loss and degradation of wetland habitats protected under state regulations.	Class II	Implement Mitigation Measure 4.4-5c, Sensitive Habitat Restoration, to the Restoration of Jurisdictional Waters of the U.S., including Wetlands.	Less than Significant with Mitigation
Impact 4.4-11: The Project could interfere with the movement of a native wildlife species or with established native resident or migratory wildlife corridors.	Class III	None required.	Less than Significant
Impact 4.4-12: The Project activities would disturb special-status bats or maternity bat roosts, if present.	Class II	**Mitigation Measure 4.4-12:** SCE shall ensure that a preconstruction survey for roosting bats shall be conducted by a qualified biologist prior to construction activities to characterize potential bat habitat and identify active roost sites. Surveys shall be conducted within 100 feet of construction activities. If an active bat roost being used for maternity is found within 100 feet of the construction activities, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active maternity roosts by the qualified biologist. Should potential roosting habitat or active non-maternity bat roosts be found in trees to be removed or trimmed or poles to be replaced under the Project, SCE shall implement the following measures:	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
4. Biological Resources (cont.)			
Impact 4.4-12 (cont.)		1. Removal or trimming of trees and/or poles with potential bat roosting habitat or active roosts shall occur when bats are active (i.e., not in torpor or hibernation), approximately between the periods of March 1 to March 15, and September 15 to October 15; outside of bat maternity roosting season (approximately March 15 to September 15) and outside of months of winter torpor (approximately October 15 to February 28) to the extent feasible. 2. The biologist shall be present during tree and pole removal if potential roosting habitat or active bat roosts are present. Trees and poles with potential roosting habitat or active roosts shall be removed only when no rain is occurring or is forecast to occur for 3 days, when daytime nighttime temperatures are at least 50 °F, and when wind speeds are less than 15 mph. 3. Removal of trees or branches with active or potentially active roost sites shall follow a two-step removal process: a. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws or hand tools. b. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or hand tools or other equipment (e.g. excavator or backhoe). 4. Removal of structures containing or suspected to contain active bat roosts shall be partially dismantled under the supervision of the qualified biologist in the evening prior to the emergence of bats. Structures shall be partially dismantled to significantly change the roost conditions, causing adult bats to abandon the roost and seek new roosting locations. Removal shall be completed the subsequent day. 5. Bat roosts that begin during construction are presumed to be unaffected, and no buffer would be necessary. Direct impacts to bat roosts or take of individual bats shall be avoided.	
Impact 4.4-13: Project activities could require protected tree removal and/or trimming.	Class III	None required.	Less than Significant
Impact 4.4-14: The project could conflict with the Western Riverside MSHCP.	Class III	None required.	Less than Significant

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources			
Impact 4.5-1: Implementation of the Project could cause a substantial adverse change in the significance of the Grand Boulevard Historic District.	Class II	**Mitigation Measure 4.5-1:** ~~Prior to commencing Project related construction activities associated with the Pedley Source Lines or the Alternative E4 telecommunication line, an architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History shall assist Project engineers in identifying and labeling for avoidance on construction plans all contributing elements of the Grand Boulevard Historic District (P-33-006444) located in or adjacent to the Project Area – these contributing elements to the District shall subsequently be avoided during Project implementation.~~ SCE shall prepare a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources shall follow the State standards and guidelines established in Public Resources Code (PRC) Sections 21083.2 and 21084.1 through 21084.3, as well as CEQA Guidelines Section 15064.5 and Appendix G. The CRMP shall be submitted to the CPUC for review and approval at least 30 days prior to the start of construction. The CRMP shall require, but not be limited to, the following: 1. *Construction Plan Review/Markup*: An architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History shall assist project engineers in identifying and labeling for avoidance on construction plans all contributing elements of the Grand Boulevard Historic District (P-33-006444) located in or adjacent to the project construction area. 2. *Cultural Resource Monitoring and Field Reporting*: Detailed procedures shall be followed for archaeological monitoring and reporting, and for determining when monitoring is no longer necessary. Such procedures shall include, but not necessarily be limited to: archaeological monitoring – the monitor shall meet the Secretary of the Interior's Professional Qualifications for Archeology, mapping of areas to be monitored (i.e., areas of moderate potential for archaeological resources that are in previously undisturbed sediment), and implementation of Unanticipated Discovery Protocol in the event of any identified archaeological deposits, including human remains and potential tribal cultural resources (see below); determining when monitoring is no longer necessary – confirmation that ground-disturbing work is complete in areas of moderate potential for archaeological resources that are in previously undisturbed sediment before the determination is made that monitoring is complete; reporting – submission of an archaeological monitoring report to the CPUC	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources (cont.)			
Impact 4.5-1 (cont.)		upon completion of construction monitoring and subsequent submission to the California Historical Resources Information System (CHRIS) upon approval by the CPUC. 3. *Unanticipated Discovery Protocol*: Detailed procedures for halting construction, defining work stoppage zones, notifying stakeholders (e.g. agencies, Native American tribes, utilities), and assessing California Register-eligibility of cultural resources, including human remains and potential tribal cultural resources in the event that any such resources are encountered during construction. Such procedures shall include, but not necessarily be limited to the following: a. If prehistoric or historic-era archaeological resources are encountered during construction, SCE and/or its contractors shall immediately cease all construction activity within 100 feet of the find and flag off the area for avoidance. b. The CPUC shall be immediately informed of the discovery. c. A qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment. d. If human remains are uncovered during construction, SCE and/or its contractors shall immediately halt all work within 100 feet of the discovery, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, the county coroner shall contact the NAHC within 24 hours, in accordance with California Health and Safety Code Section 7050.5(c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further construction activities until SCE and the CPUC have discussed and conferred, as prescribed in PRC Section 5097.98, with the most likely descendants regarding their recommendations for treatment of the human remains, including, if applicable, taking into account the possibility of multiple human remains.	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources (cont.)			
Impact 4.5-1 (cont.)		e. If the CPUC determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. **4.** *Treatment Measures*: If avoidance of a resource that may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4(b). Treatment shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the resource. The CRMP shall detail methods for data recovery, including analysis in a regional context, reporting of results within 1 year of completion of field studies, curation of artifacts and data (e.g., maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by the CPUC, and dissemination of reports to appropriate repositories, including the CHRIS.	
Impact 4.5-2: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered historical resources.	Class II	Implement Mitigation Measure 4.5-1 (see above). ~~**Mitigation Measure 4.5-2:** If prehistoric or historic era archaeological resources are encountered during Project implementation, SCE and/or its contractors shall immediately cease all construction activity within 100 feet of the find and flag off the area for avoidance. The CPUC and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment. Prehistoric archaeological materials might include~~	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources (cont.)			
Impact 4.5-2 (cont.)		~~obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.~~ ~~If the CPUC determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC §21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.~~ ~~If avoidance is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4(b). This shall include documentation of the resource and may include data recovery or other measures. Any treatment other than preservation in place must be approved by the CPUC and the appropriate tribe if applicable. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.~~	
Impact 4.5-3: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered archaeological resources.	Class II	Implement Mitigation Measure 4.5-~~2~~1 (see above).	Less than Significant with Mitigation
Impact 4.5-4: Project implementation could directly destroy a unique paleontological resource.		**Mitigation Measure 4.5-4:** The Paleontological Resources Management Plan, required by APM PAL-01, shall include the following monitoring and treatment requirements.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources (cont.)			
Impact 4.5-4 (cont.)	Class II	**Monitoring Requirements.** Before and during Project-related ground disturbing activities, Project work shall be conducted such that any fossil remains encountered are recovered in their entirety. The monitoring measures in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following: • Geotechnical borings collected during geotechnical investigations, as available, shall be reviewed by a professional paleontologist for subsurface paleontological potential prior to construction. If the professional paleontologist identifies units with high or moderate paleontological potential in the geotechnical borings, the professional paleontologist shall incorporate any additional monitoring recommendations needed to conduct work such that any unique paleontological resources are not destroyed. • Qualified personnel shall monitor excavations in areas identified as having moderate to high sensitivity for paleontological resources, and in areas mapped as Qaf, Qw, Qf, Qyw, Qyf, Qya, or Qye but which include excavations greater than 10 feet deep. • Qualified personnel shall be equipped to salvage and recover fossils and take sediment samples, and shall be empowered to temporarily halt or divert construction equipment to allow removal of abundant/large specimens. • Should the ongoing monitoring results indicate that the paleontological sensitivity of the subsurface sediments within the project area is lower or higher than anticipated, the monitoring level of effort shall be adjusted (increased, decreased, or suspended) accordingly. • If subsurface fossils are encountered during construction and monitor is not present, qualified paleontologist should be notified immediately and work in the immediate area (50 feet) of the discovery should cease until discovery can be evaluated. **Treatment requirements.** Any fossils collected during Project activities must be placed in an accredited scientific institution for the benefit of current and future generations. The treatment requirements in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following: • Preparation of specimens by qualified professionals to a point of identification and permanent preservation. • Preparation by qualified professionals of a report of findings and inventory of resources recovered.	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
5. Cultural Resources (cont.)			
Impact 4.5-4 (cont.)		• Placement of any collected fossils in an accredited museum repository with permanent retrievable paleontologic storage. • Documentation of curation into an established museum repository (prior to which treatment shall not be considered complete).	
Impact 4.5-5: Project construction could result in damage to previously unidentified human remains.	Class II	Implement Mitigation Measure 4.5-1 (see above). ~~**Mitigation Measure 4.5-5:** If human remains are uncovered during Project construction, SCE and/or its contractors shall immediately halt all work, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, SCE and/or its contractors shall contact the NAHC, in accordance with HSC Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). Per PRC Section 5097.98, SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until SCE and/or its contractor has discussed and conferred, as prescribed in this section (PRC §5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.~~	Less than Significant with Mitigation
Impact 4.5-6: Implementation of the Project could cause a substantial adverse change in the significance of previously unknown tribal cultural resources.	Class II	Implement Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~.	Less than Significant with Mitigation
6. Energy Conservation			
Impact 4.6-1: Construction, operation, and maintenance would result in the consumption of energy.	Class II	**Mitigation Measures 4.6-1:** SCE shall contract a qualified professional (i.e., construction planner/energy efficiency expert) to prepare a Construction Equipment Efficiency Plan that identifies the specific measures that SCE (and its construction contractors) will implement as part of Project construction to increase the efficient use of construction equipment to the maximum extent feasible. Such measures shall include, but not necessarily be limited to: procedures to ensure that all construction equipment is properly tuned and maintained at all times; a commitment to utilize existing electricity sources where feasible rather than portable diesel-powered generators; and identification of procedures (including the routing of haul trips) that shall be followed to ensure that all materials and debris hauling is conducted in a fuel-efficient manner. The plan shall be submitted to CPUC for review and approval at least 30 days prior to the beginning of construction activities.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
6. Energy Conservation (cont.)			
Impact 4.6-2: Construction could adversely affect existing energy resources.	Class III	None required.	Less than Significant
7. Geology and Soils			
Impact 4.7-1: Strong seismic ground shaking could damage Project structures exposing people to risks.	Class III	None required.	Less than Significant
Impact 4.7-2: The project would result in increased risk of substantial adverse effects involving liquefaction.	Class II	**Mitigation Measure 4.7-2:** SCE or its contractor shall conduct a design-level geotechnical investigation for all of the approved Project sites and alignments that have not yet been investigated and shall prepare a geotechnical report documenting the results of the investigation. This investigation shall evaluate water table depth, faulting and seismicity, liquefaction potential, physical properties of subsurface soils (including soil expansion), seismic settlement, and potential for soil collapse and lateral spreading. The geotechnical investigation shall be prepared and certified by a California-licensed professional engineer or engineering geologist, and shall include earthwork, grading, design, and construction recommendations (e.g., soil treatment/conditioning or engineered fill replacement) to reduce the exposure of structures to seismic-related ground failure, including liquefaction hazards, and to other hazards resulting from soil properties. Measures that may be used to reduce impacts could include, but are not limited to: • Liquefaction: soil densification and compaction, excavation, and removal or recompaction of potentially liquefiable soils, design and installation of deep foundations or reinforced shallow foundations; and/or avoidance of highly unstable areas; and • Expansive soil: excavation of expansive soil, draining water away from expansive soils, ground-treatment processes. SCE shall provide documentation to the CPUC prior to the commencement of construction that demonstrates these measures have been incorporated into Project designs.	Less than Significant with Mitigation
Impact 4.7-3: The project could result in soil erosion or loss of topsoil.	Class II	Implement Mitigation Measure 4.3-~~1~~2a.	Less than Significant with Mitigation
Impact 4.7-4: Sections of the Project alignment would be located on soil that could become unstable as a result of the Project.	Class II	Implement Mitigation Measure 4.7-2.	Less than Significant with Mitigation
Impact 4.7-5: Portions of the Project would be located on expansive soil, creating risks to life and property.	Class II	Implement Mitigation Measure 4.7-2.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
8. Greenhouse Gas Emissions			
Impact 4.8-1: The Project would generate GHG emissions.	Class III	None required.	Less than Significant
9. Hazards and Hazardous Materials			
Impact 4.9-1: Construction and operation and maintenance would require the use of hazardous materials that could pose a potential hazard to the public or the environment if improperly used or inadvertently released.	Class II	**Mitigation Measure 4.9-1:** As identified in APM HAZ-01, SCE shall prepare and implement a Hazardous Materials Management Plan. The plan shall be prepared and submitted to CPUC for review and approval at least 30 days prior to the start of construction. The plan shall include, but not be limited to, the following requirements: 1. SCE shall prepare a Hazardous Substance Control and Emergency Response Plan (Plan) and implement it during construction to ensure compliance with all applicable federal, state, and local laws and guidelines regarding the handling of hazardous materials. If the Project would result in the storage or handling of a Threshold Quantity or greater of a hazardous substance as defined by the California Hazardous Materials Release Response Plan and Inventory Law, the Plan shall include preparation and implementation of a Hazardous Materials Business Plan that describes the hazardous materials usage, storage, and disposal to the appropriate Certified Unified Program Agency (San Bernardino County Fire Department, Hazardous Materials Division, and/or Riverside County Department of Environmental Health, Hazardous Materials Branch, as applicable). The Plan shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The Plan shall also include appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall require that SCE and/or its contractors shall implement construction best management practices including but not limited to the following: a. Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction. b. Avoid overtopping construction equipment fuel gas tanks. c. Use tarps and oil-absorbent pads under vehicles when refueling to contain and capture any spilled fuel. d. During routine maintenance of construction equipment, properly contain and remove grease and oils.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
9. Hazards and Hazardous Materials (cont.)			
Impact 4.9-1 (cont.)		e. Properly dispose of discarded containers of fuels and other chemicals. f. Emergency spill supplies and equipment shall be kept at the project staging area and adjacent to all areas of work, and shall be clearly marked. g. If potentially contaminated materials are encountered during excavation, work shall stop at that location and SCE's Spill Response Coordinator shall be called to the site to make an assessment and notify the proper authorities, including CPUC. The potentially contaminated soil shall be segregated into lined stockpiles or placed in dump trucks or roll-off containers, sampled, and tested to determine appropriate handling, treatment, and disposal options. If the soil is classified as hazardous, it shall be properly managed on location before being transported in accordance with United States Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility 2. SCE shall prepare and implement a Health and Safety Plan to ensure the health and safety of construction workers and the public during construction. The plan shall include information on the appropriate personal protective equipment to be used during construction, spill containment, emergency response, and other safety requirements consistent with OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) guidelines. 3. SCE shall ensure that the Workers Environmental Awareness Plan (WEAP) includes training on site-specific physical conditions to improve hazard materials release prevention and include a review of the Fire Management Plan (APM HAZ-02), Health and Safety Plan, and the Hazardous Substance Control and Emergency Response Plan. The CPUC mitigation monitor shall attend the first WEAP training program. SCE shall submit documentation to the CPUC prior to the commencement of construction activities that each worker on the project has undergone this training program.	
Impact 4.9-2: Construction could release previously unidentified hazardous materials into the environment.	Class II	Implement Mitigation Measure 4.9-1.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
9. Hazards and Hazardous Materials (cont.)			
Impact 4.9-3: Construction activities could release hazardous materials within the vicinity of an existing school.	Class II	Implement Mitigation Measures 4.3-2a, 4.3-2b, and 4.9-1. **Mitigation Measure 4.9-3:** SCE shall coordinate construction activities with the administration of Auburndale Intermediate School to ensure that construction activities associated with the Mira Loma-Jefferson 66 kV Subtransmission Line are not conducted within 50 meters (164 feet) of the school while students are on campus (e.g., during non-school hours and/or during breaks in the school year). SCE shall provide the CPUC with documentation of the coordination with the school administration at least 60 days before work would begin within the vicinity of the school.	Less than Significant with Mitigation
Impact 4.9-4: Construction, operation, and maintenance of the Project could result in an aviation safety hazard for people residing or working in the project area.	Class II	**Mitigation Measure 4.9-4:** In the event that the Federal Aviation Administration (FAA) provides SCE with aviation safety recommendations for the project, SCE shall implement the recommendations to the extent feasible. If SCE determines that the recommendation is not feasible, SCE must consult with FAA to identify how the intent of the recommendation, in terms of aviation safety, can be achieved in a feasible manner to ensure that construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. SCE shall submit to the CPUC a detailed report identifying the specific reasons why it has determined that the recommendations are not feasible. The report shall include documentation of SCE's correspondences with FAA and present an FAA-agreed-upon solution to implement and achieve the aviation safety intent of the FAA recommendations that ensures construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. The report shall be submitted to the CPUC for approval at least 90 days prior to installation of any project component.	Less than Significant with Mitigation
Impact 4.9-5: Construction of the Project could interfere with an emergency response or evacuation plan.	Class II	Implement Mitigation Measure 4.17-1.	Less than Significant with Mitigation
Impact 4.9-6: Construction could increase the probability of a wildfire.	Class II	**Mitigation Measure 4.9-6:** SCE and/or its contractors shall prepare and implement a Fire Safety Plan to ensure the health and safety of construction workers and the public. SCE shall contact the appropriate fire departments (Riverside County Fire Department, San Bernardino County Fire Department, Corona Fire Department, Chino Valley Independent Fire District, and Ontario Fire Department) for consultation during plan preparation and shall include fire safety measures recommended by these agencies. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations. The plan shall include, but not be limited to, the following:	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
9. Hazards and Hazardous Materials (cont.)			
Impact 4.9-6 (cont.)		• SCE and/or its contractors shall have water tanks and/or water trucks sited/available in the Project area for fire protection. • All construction vehicles shall have fire suppression equipment. • All construction workers shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire. • As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires. • Construction personnel shall be required to park vehicles away from dry vegetation. • Prior to construction, SCE shall contact and coordinate with the appropriate fire departments to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks if water trucks are not used. SCE shall submit verification of its consultation with CAL FIRE and the local fire departments to the CPUC. • SCE shall submit the plan along with all records of consultation with local fire departments, including any responses received from fire departments, to CPUC staff for approval at least 30 days prior to commencement of construction activities shall be distributed to all construction crew members prior to construction of the Project.	
Impact 4.9-7: Operation could increase the probability of a wildfire.	Class III	None required.	Less than Significant
Impact 4.9-8: Induced currents associated with operation of the Project could generate electrical shocks.	Class II	**Mitigation Measure 4.9-8:** As part of the siting and construction process, SCE shall identify objects, such as fences, metal buildings, pipelines, etc. that are within the 500 kV ROW that have the potential for induced voltages to cause a perceptible current or small electrical shock and shall implement electrical grounding of those metallic objects in accordance with Cal/OSHA Electrical Safety Orders at 8 CCR 2739. The identification of objects shall be provided to the CPUC at least 30 days prior to the commencement of construction, and shall document the thresholds of electric field strength and metallic object size at which grounding becomes necessary.	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
10. Hydrology and Water Quality			
Impact 4.10-1: The Project would discharge stormwater and groundwater in compliance with water quality standards.	Class III	None required.	Less than Significant
Impact 4.10-2: The Project would result in discharge and use of groundwater.	Class III	None required.	Less than Significant
Impact 4.10-3: The Project would temporarily alter drainage patterns, including in the Santa Ana River, and would permanently alter drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation.	Class III	None required.	Less than Significant
Impact 4.10-4: The Project would alter existing drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation, which could result in flooding.	Class III	None required.	Less than Significant
Impact 4.10-5: The Project would place structures within the 100-year flood hazard area.	Class III	None required.	Less than Significant
Impact 4.10-6: The Project could expose construction workers to flooding in the event of dam failure.	Class III	None required.	Less than Significant
Impact 4.10-7: The Project could expose workers to potential mudflows in the case of dam failure.	Class III	None required.	Less than Significant
11. Land Use and Planning			
No Impact	No Impact	None required.	No Impact
12. Mineral Resources			
Impact 4.12-1: The Project would install structures within an area where significant mineral deposits have been mapped by the state.	Class III	None required.	Less than Significant
Impact 4.12-2: The Project could result in the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans.	Class III	None required.	Less than Significant
13. Noise			
Impact 4.13-1: Operation and maintenance-related noise levels would contribute to ambient noise levels.	Class III	None required.	Less than Significant

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
13. Noise (cont.)			
Impact 4.13-2: Construction of the Project would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations.	Class I	**Mitigation Measure 4.13-2a:** SCE and/or its contractors shall develop a Construction Noise Reduction Plan. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall include, but not be limited to, the following measures for daytime construction activities: • Distribute to the potentially affected residences within 100 feet of Project construction a "hotline" telephone number, which shall be attended during active construction working hours, for use by the public to register complaints. All complaints shall be logged noting date, time, complainants' name, nature of complaint, and any corrective action taken. • All construction equipment must be properly tuned, in good condition, and shall have noise reduction features (e.g., mufflers and engine shrouds) no less effective than those originally installed by the manufacturers thereof. • Ensure that during construction, trucks and equipment are running only when necessary. • Maintain maximize physical separation, as far as practicable, between noise sources (construction equipment) and sensitive noise receptors. Separation may be achieved locating stationary equipment to minimize noise impacts on the community. • Use construction noise barriers such as paneled noise shields, barriers, or enclosures adjacent to noisy stationary equipment. Noise control shields shall be made featuring a solid panel and a weather-protected, sound-absorptive material on the construction-activity side of the noise shield. **Mitigation Measure 4.13-2b:** SCE and/or its contractors shall develop a Nighttime Noise and Nuisance Reduction Strategy plan in the event that nighttime construction activity is determined to be necessary within 400 feet of sensitive receptors. The plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The strategy shall include a set of site-specific noise attenuation measures that apply state-of-the-art noise reduction technology to ensure that nighttime construction noise levels and associated nuisances are reduced to the extent feasible. The attenuation measures may include, but not be limited to, the control strategies and methods for implementation that are listed below. If any of the following strategies are determined by SCE to not be feasible, an	Significant and unavoidable

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
13. Noise (cont.)			
Impact 4.13-2 (cont.)		explanation as to why the specific strategy is not feasible shall be included in the plan. • Plan construction activities to minimize the amount of nighttime construction. • Offer temporary relocation of residents within 200 feet of nighttime construction activities. • Temporary noise barriers, such as shields and blankets, shall be installed immediately adjacent to all nighttime stationary noise sources (e.g., auger rigs, generators, compressors, etc.). • Install temporary noise barriers that block the line of sight between nighttime activities and the closest residences within 400 feet. • The notification requirements identified in Mitigation Measure 4.13-2a shall be extended to include residences within 400 feet of pending nighttime construction activities.	
14. Population and Housing			
Impact 4.14-1: Construction could indirectly induce population growth.	Class III	None required.	Less than Significant
15. Public Services			
No Impact	No Impact	None required.	No Impact
16. Recreation			
Impact 4.16-1: Construction and operation of the Project would increase the use of existing parks and recreational facilities.	Class III	None required.	Less than Significant
17. Transportation/Traffic			
Impact 4.17-1: Construction could adversely affect traffic and transportation conditions.	Class II	**Mitigation Measure 4.17-1:** <u>As part of any encroachment permit,</u> SCE shall prepare and implement a Traffic Management Plan subject to approval of Caltrans and/or the applicable local government(s), including agencies that operate alternative modes of transportation (e.g., North Main Corona Metrolink Station, the Corona Cruiser/RTA bus route, and the Metrolink Rail path). The approved Traffic Management Plan and documentation of agency approvals shall be submitted to the CPUC prior to the commencement of construction activities. At a minimum, the plan shall:	Less than Significant with Mitigation

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
17. Transportation/Traffic (cont.)			
Impact 4.17-1 (cont.)		• Include a discussion of work hours, haul routes, and work area delineation within public road rights-of-way. Heavy-duty construction vehicles and equipment would not utilize SR 91 within the City of Corona (from the Green River Road exit to the Pierce Street exit) to access the proposed Circle City Substation site during peak traffic hours throughout the approximately 9-week-long grading period at the substation site. On weekdays between 7:00 a.m. and 9:00 a.m., heavy-duty construction vehicles and equipment would not utilize SR 91 heading west, and would not utilize SR 91 heading east between 4:00 p.m. and 6:00 p.m. Alternate travel routes, such as East 6th Street or Magnolia Avenue, would be used instead during these times to avoid peak traffic hours along SR 91; • Require construction work to utilize traffic control and flagging when construction vehicles are present; • Provide access and parking restrictions through posted signage; • Require workers to park personal vehicles at the approved staging area and take only necessary project vehicles to the work sites; • Lay out plans for notifications and a process for communication with adjacent residents and landowners prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which road/lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; and • Include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure that construction activities and associated lane closures would not significantly affect emergency response vehicles. Emergency service providers shall be notified of the timing, location, and duration of construction activities. SCE shall submit verification of its consultation with emergency service providers to the CPUC. All roads shall remain passable to emergency service vehicles at all times. • Identify all roadway locations where special construction techniques (e.g., night construction) would be used to minimize impacts to traffic flow.	

TABLE ES-1 (Continued)
SUMMARY OF IMPACTS OF AND MITIGATION MEASURES FOR THE PROJECT

Impact	Impact Class	Mitigation Measure(s)	Residual Impact
17. Transportation/Traffic (cont.)			
Impact 4.17-1 (cont.)		• Repair roads damaged by Project construction to a structural condition equal to that which existed prior to construction activity. The SCE and the local jurisdiction(s) shall enter into an agreement prior to construction that will detail the pre-construction conditions and the post-construction requirements of the rehabilitation program. • Lane closures shall occur during off-peak traffic hours (i.e., 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.).	
Impact 4.17-2: Project operation and maintenance could adversely affect traffic and transportation conditions.	Class III	None required.	Less than Significant
Impact 4.17-3: Operation and maintenance could cause conflict with level-of-service standards.	Class III	None required.	Less than Significant
Impact 4.17-4: Changes in air traffic patterns and increased air traffic levels could result in safety risks.	Class II	Implement Mitigation Measure 4.9-4.	Less than Significant with Mitigation
Impact 4.17-5: Traffic safety hazards could increase for vehicles, bicyclists, and pedestrians on public roadways.	Class II	Implement Mitigation Measure 4.17-1.	Less than Significant with Mitigation
Impact 4.17-6: Construction activities could result in delays for emergency vehicles on roadways in the area.	Class II	Implement Mitigation Measure 4.17-1.	Less than Significant with Mitigation
Impact 4.17-7: Alternative modes of transportation (public transit, bicycle or pedestrian) could be adversely affected during construction.	Class II	Implement Mitigation Measure 4.17-1.	Less than Significant with Mitigation
18. Utilities and Service Systems			
Impact 4.18-1: The Project would result in wastewater that would need to be treated per the requirements of the Santa Ana Regional Water Quality Control Board (RWQCB).	Class III	None required.	Less than Significant
Impact 4.18-2: The Project would require the construction of new storm water drainage facilities, or expansion of existing facilities.	Class III	None required.	Less than Significant
Impact 4.18-3: The Project would require the use of municipal water supplies but would not require new or expanded water supply resources or entitlements.	Class III	None required.	Less than Significant
Impact 4.18-4: The Project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Class III	None required.	Less than Significant

CHAPTER 1
Introduction

1.1 Purpose of This Document

Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.15-12-007), filed on December 4, 2015, requests a Permit to Construct (PTC) the Circle City Substation and Mira Loma-Jefferson 66-kilovolt (kV) Subtransmission Line Project (Project) and related components pursuant to CPUC General Order (GO) 131-D (SCE, 2015). This Environmental Impact Report (EIR) is an informational document intended to disclose to the public and decision-makers the environmental impacts of the Project proposed by SCE. The EIR assesses the direct, indirect, and cumulative environmental impacts that would occur as a result of the construction, operation, and maintenance of the proposed Project and alternatives to the Project.

This EIR examines all of the resource areas in the California Environmental Quality Act (CEQA) Guidelines Appendix G Checklist and Appendix F, including: Aesthetics; Agriculture and Forestry Resources; Air Quality; Biological Resources; Cultural Resources; Energy Conservation; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; Transportation and Traffic; and Utilities and Service Systems.

1.2 Project Overview

The Circle City Substation, an unstaffed and automated 66/12 kilovolt (kV) low-profile 56 megavolt-ampere (MVA) substation would be constructed on a 19.5-acre site in the City of Corona. The substation would be comprised of a 420-foot by 387-foot facility located on approximately 11.08 acres of the site. It would be located approximately 0.25 mile south of the corner of Magnolia Avenue and East 6th Street.

The Project would include construction of four new 66 kV source lines, which would be in two double-circuit configurations and combinations of overhead and underground construction, and construction of the 10.9-mile 66 kV Mira Loma-Jefferson subtransmission line. The source lines (Databank and Pedley) would be located in the City of Corona, and the subtransmission line would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario. The existing Mira Loma Substation is located off Hamner Avenue near the corner of Cantu-Galleano Ranch Road in Ontario. The existing Corona and Jefferson substations are located in Corona, off Railroad Street near Cota Street, and off W. Ontario Avenue near S. Lincoln Avenue, respectively. The existing Pedley Substation is located in Norco off Substation Road near Arlington Avenue.

In addition to the switchrack positions necessary for a 56 MVA substation, the site would be built to accommodate ~~with~~ two additional ~~(open)~~ 66 kV switchrack positions that would allow for ~~a~~ potential future 66 kV network growth, and/or substation capacity upgrades to 112 MVA. SCE has stated that a potential future capacity upgrade could occur between the years of 2034 and 2040. However, the CPUC does not consider this to be reasonably foreseeable because it would occur well beyond the 10-year forecast period for the Project when variables that contribute to growth in the electrical needs area (ENA), such as specific growth-inducing projects and local economic conditions, cannot be estimated with assurance of not being overly speculative. Therefore, this EIR does not evaluate the speculative future construction of any components or facilities associated with these open positions. The proposed Project also consists of: upgrades of the existing Mira Loma Substation to accommodate the new Mira Loma-Jefferson Subtransmission Line; construction of approximately six new underground 12 kV distribution getaways exiting the proposed Circle City Substation; relocation of approximately 1.9 miles of an existing 33 kV distribution line to an underground position; and installation of telecommunications facilities to connect the proposed Project to SCE's existing telecommunications system. A complete description of the proposed Project is provided in Chapter 2, *Project Description*.

1.3 Proposed Project Purpose and Objectives

A project description must state the objectives sought by the proposed project. The statement of objectives should include the underlying purpose of the project, and should be clearly written to guide the selection of mitigation measures and alternatives to be evaluated in the EIR (CEQA Guidelines § 15124(b)). Below are descriptions of the proposed Project purpose and objectives.

1.3.1 Project Purpose

1.3.1.1 Subtransmission (66 kV) / Distribution (12 kV) Substation

SCE conducts annual power flow demand 10-year forecast studies for the electrical needs area (ENA). The current combined operating capacity of the Corona, Jefferson, and Chase substations that serve the ENA for the proposed Project is 434.6 MVA under a normal system configuration.

Table 1-1a, *Electrical Needs Area Substation Capacity and Peak Demand by Year, Historical Data and the 2017 – 2026 Forecasts for the 2017 – 2026*, provides the ~~current~~ historical and forecasted load values associated with the 2017 through 2026 forecast for the substations located in the ENA, including Corona, Jefferson, and Chase substations. As shown in the table, the projected electrical demand is expected to exceed the maximum operating limits by 2024, which would affect SCE's ability to safely and reliably serve the electrical demand within the ENA. Therefore, SCE proposes development of a new subtransmission/distribution substation in the City of Corona referred to as Circle City Substation that would address the forecasted electrical maximum operating limit shortfall in the ENA.

Subsequent to the release of the Draft EIR, SCE finalized its 2018 through 2027 power flow forecast for the ENA. **Table 1-1b**, *Electrical Needs Area Substation Capacity and Peak Demand by Year, Historical Data and Forecast for 2018 – 2027*, provides the historical and forecasted

TABLE 1-1a
ELECTRICAL NEEDS AREA SUBSTATION CAPACITY AND PEAK DEMAND BY YEAR, HISTORIC DATA AND FORECASTS FOR 2017 - 2026

Load Data for the Electrical Needs Area	Historic Data					Forecasts									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Maximum Operating Limit (MVA)	435	435	435	435	435	435	435	435	435	435	435	435	435	435	435
Peak Demand - Normal Weather (MVA)	364	369	364	371	366	371	379	385	389	394	396	398	400	402	404
Peak Demand – Extreme Heat (MVA)	399	404	397	404	398	404	413	419	424	429	431	433	436	438	441
Reserve (Maximum Operating Limit – Extreme Heat) (MVA)	36	31	38	31	37	31	22	16	11	6	4	2	-1	-3	-6
Percent Utilization (Extreme Heat ÷ Maximum Operating Limit)	92%	93%	91%	93%	91%	93%	95%	96%	97%	99%	99%	**100%**	**100%**	**101%**	**101%**

SOURCE: Based on SCE, 2017a, with forecast based in part on 10 years of historical load data.

TABLE 1-1b
ELECTRICAL NEEDS AREA SUBSTATION CAPACITY AND PEAK DEMAND BY YEAR, HISTORIC DATA AND FORECASTS FOR 2018 - 2027

Load Data for the Electrical Needs Area	Historic Data					Forecasts									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Maximum Operating Limit (MVA)	435	435	435	435	435	435	435	435	435	435	435	435	435	435	435
Peak Demand - Normal Weather (MVA)	369	364	371	366	373	382	383	392	395	401	405	409	411	414	416
Peak Demand – Extreme Heat (MVA)	404	397	404	398	406	411	414	423	427	432	437	441	445	448	451
Reserve (Maximum Operating Limit – Extreme Heat) (MVA)	31	38	31	37	29	24	21	12	8	3	-2	-6	-10	-13	-16
Percent Utilization (Extreme Heat ÷ Maximum Operating Limit)	93%	91%	93%	92%	93%	95%	95%	97%	98%	99%	**101%**	**101%**	**102%**	**103%**	**104%**

SOURCE: Based on SCE, 2018a, with forecast based in part on 10 years of historical load data.

load values associated with the 2018 through 2027 forecast for the ENA substations. SCE's updated forecast indicates the projected need date of the Circle City Substation has changed to 2023 from 2024 (SCE, 2018a). SCE has provided the following two reasons for the changed need date:

1) Actual demand in 2017 exceeded SCE's forecast. Specifically, in 2017 the normal weather peak demand value was projected to be 404 MVA and the recorded value was 406 MVA, 2 MVA higher than projected;

2) In 2019 and 2020 there will be additional load added to the 12 kV circuits in the ENA that was not included in the previous forecasts. This is a result of the planned conversion of approximately 5.6 MVA of load that is currently served by the 33/4 kV transformers at Corona Substation. These 4 kV facilities are scheduled for conversion to 12 kV as part of a long-term system-wide SCE program to eliminate (through conversion to higher and standardized distribution voltages) its antiquated 4 kV voltage system. Following the conversion process, the service voltage at 4 kV will be eliminated and the load will be integrated into the surrounding 12 kV system. As a result, it presents itself as new load on the 12 kV system.

The current 10-year forecast (2018 through 2027) for only new load growth (i.e., increases due to new customers and base load growth versus the 4 kV load that would be added to the 12 kV system) is slightly less than the previous 2017 through 2026 forecast (SCE, 2018a) continuing a decline in forecasted new load growth over recent years.

In addition to the need associated with projected load growth, SCE has indicated that providing the ENA with an additional substation and the associated distribution circuitry would provide the ability to relieve the existing substations and circuits of some of the electrical demand, thereby increasing the capacity margin across all three of the existing substations. This increased capacity margin would be useful in addressing the uncertainties caused by variables that effect capacity, such as human behavior and the corresponding electrical consumption, weather conditions, and the availability of routes for distribution circuits to adequately distribute the capacity of the substation transformers, that could result in a constrained local-area electrical system because of the limited capacity margin at the three existing substations for operations and planning (SCE, 2017e).

1.3.1.2 Subtransmission

The 66 kV subtransmission lines that currently serve the ENA have operating limits of 125 MVA under normal system conditions and 168 MVA under contingency or abnormal system conditions referred to as an N-1 contingency. An N-1 contingency is a scenario where a single subtransmission line in the ENA would be put out of service due to an outage, which would put more stress on the other subtransmission lines in the ENA. Based on SCE's modeling efforts conducted for the Project associated with the 2017 through 2026 forecast, the operating limit of the Mira Loma-Corona-Jefferson Subtransmission Line would be exceeded during an N-1 outage to the Mira Loma-Cleargen-Delgen subtransmission lines in 2018 under peak electrical demand conditions and abnormal system configurations, and the operating limit of the Mira Loma-Corona Subtransmission Line would be exceeded in 2020 under normal peak electrical demand conditions (SCE, 2018). To address this subtransmission line capacity issue, SCE proposes to ~~replace~~ reconfigure the existing Mira Loma-Corona-Jefferson 66 kV Line to become ~~with~~ the Mira Loma-Jefferson and Mira Loma-Corona #2 66 kV line~~s~~ by adding a new 66 kV circuit

between Mira Loma and Corona substations. The Mira Loma-Jefferson and Mira Loma-Corona #2 lines are collectively referred to as the Mira Loma-Jefferson 66 kV Subtransmission Line.

Subsequent to the release of the Draft EIR, SCE finalized its 2018 through 2027 power flow forecast for the ENA. Based on SCE's revised forecast for 2018 through 2027, the operating limit of the Mira Loma-Corona-Jefferson Subtransmission Line would be exceeded during an N-1 outage to the Mira Loma-Corona-Jefferson subtransmission line in 2020 under peak electrical demand conditions and abnormal system configurations (see **Table 1-1c**, *N-1 Conditions: Mira Loma-Corona-Jefferson 66 kV Line (Outage of Mira Loma-Cleargen-Delgen 66 kV Line), Forecast for 2018 – 2027)*, and the operating limit of the Mira Loma-Corona Subtransmission Line would be exceeded in 2022 under normal peak electrical demand conditions (see **Table 1-1d**, *Base Case Conditions: Mira Loma-Corona 66 kV Line, Forecast for 2018 – 2027)* (SCE, 2018a). SCE has provided no details as to why the revised forecast varies from the previous forecast.

1.3.2 Project Objectives

SCE identified its objectives for the proposed Project in its PEA (SCE, 2015) as follows:

- Serve current and long-term peak electrical demand requirements in the electrical needs area (ENA) as soon as possible after receipt of applicable permits;
- Enhance electrical system reliability by adding transformation and circuitry to serve increased electrical demand and by increasing operational flexibility;
- Construct the new electrical facilities in close proximity to the electrical demand to effectively and efficiently serve the ENA;
- Meet the proposed Project need while minimizing environmental impacts;
- Meet the proposed Project need in a cost-effective manner; and
- Design and construct the proposed Project in conformance with SCE's current engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.

Upon consideration of the Applicant's objectives, electrical demand projections, and other laws and regulations, this EIR identifies the following as the CPUC's basic CEQA Project objectives:

- **Subtransmission Service Objective** – Maintain electrical system reliability by addressing overloads on the Mira Loma-Corona-Jefferson and Mira Loma-Corona 66 kV subtransmission lines that could occur under peak electrical demand conditions during the 2017 to 2026 forecast period; and
- **Distribution Service Objective** – Maintain electrical system reliability by ensuring ~~Ensure~~ that the Corona, Jefferson, and Chase substations do not exceed capacity under peak electrical demand conditions through the 2017 to 2026 forecast period.

The CPUC considers these two CEQA objectives to be the underlying purpose for the proposed Project. Under the proposed Project, the Subtransmission Service Objective would be addressed by constructing the proposed Mira Loma-Jefferson subtransmission line and associated facilities; and the Distribution Service Objective would be addressed by the construction of the Circle City Substation, its source lines, and other associated facilities.

TABLE 1-1c
N-1 CONDITIONS: MIRA LOMA-CORONA-JEFFERSON 66 KV LINE
(OUTAGE OF MIRA LOMA-CLEARGEN-DELGEN 66 KV LINE), FORECAST FOR 2018 – 2027

N-1: Load Data for the Mira Loma-Corona-Jefferson 66 kV Line (outage of Mira Loma-Cleargen-Delgen 66 kV Line)	Forecast Data									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Maximum Operating Limit (MVA)[1]	168	168	168	168	168	168	168	168	168	168
Peak Demand: Extreme Heat (MVA)[2]	164	168	170	172	175	178	181	183	186	189
Reserve (Maximum Operating Limit minus Peak Demand: Extreme Heat) (MVA)[3]	4	0	-2	-4	-7	-10	-13	-15	-18	-21
Percent Utilization (Peak Demand: Extreme Heat divided by Maximum Operating Limit)[4]	97.6%	100.0%	**101.2%**	**102.4%**	**104.2%**	**106.0%**	**107.7%**	**108.9%**	**110.7%**	**112.5%**

1 "Maximum Operating Limit" is the maximum operating capacity of Mira Loma-Corona-Jefferson 66 kV Line during **N-1 conditions.**
2 "Peak Demand: Extreme Heat" is the forecast peak demand value expected at 1-in-5 year heat storm temperatures (4 deg. F above average).
3 "Reserve" is the amount of capacity remaining between the "Peak Demand: Extreme Heat" value and the "Maximum Operating Limit" value.
4 "Percent Utilization" is the "Peak Demand: Extreme Heat" value divided by the "Maximum Operating Limit" value.

SOURCE: Based on SCE, 2018a.

TABLE 1-1d
BASE CASE CONDITIONS: MIRA LOMA-CORONA 66 KV LINE, FORECAST FOR 2018 – 2027

Base Case: Load Data for the Mira Loma-Corona 66 kV Line	Forecast Data									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Maximum Operating Limit (MVA)[1]	125	125	125	125	125	125	125	125	125	125
Peak Demand: Extreme Heat (MVA)[2]	119	121	123	124	126	127	128	130	131	133
Reserve (Maximum Operating Limit minus Peak Demand: Extreme Heat) (MVA)[3]	6	4	2	1	-1	-2	-3	-5	-6	-8
Percent Utilization (Peak Demand: Extreme Heat divided by Maximum Operating Limit)[4]	95.2%	96.8%	98.4%	99.2%	**100.8%**	**101.6%**	**102.4%**	**104.0%**	**104.8%**	**106.4%**

1 "Maximum Operating Limit" is the maximum operating capacity of Mira Loma-Corona 66 kV Line during **base case conditions**
2 "Peak Demand: Extreme Heat" is the forecast peak demand value expected at 1-in-5 year heat storm temperatures (4 deg. F above average).
3 "Reserve" is the amount of capacity remaining between the "Peak Demand: Extreme Heat" value and the "Maximum Operating Limit" value.
4 "Percent Utilization" is the "Peak Demand: Extreme Heat" value divided by the "Maximum Operating Limit" value.

SOURCE: Based on SCE, 2018a.

1.4 Agency Use of This Document

Section 15124(d) of the CEQA Guidelines requires that an EIR contain a statement briefly describing the intended uses of the EIR. The CEQA Guidelines indicate that the EIR should identify the ways in which the Lead Agency and any responsible agencies would use this document in their approval or permitting processes. The following discussion summarizes the roles of the agencies and the intended uses of the EIR.

1.4.1 CPUC

Pursuant to Article XII of the Constitution of the State of California, the CPUC is charged with the regulation of investor-owned public utilities, including SCE. The CPUC is the Lead Agency for CEQA compliance in evaluation of the SCE's proposed Project, and has directed the preparation of this EIR. This EIR will be used by the CPUC, in conjunction with other information developed in the CPUC's formal record, to act on SCE's application for a PTC for construction, operation, and maintenance of the proposed Project. Before approving the proposed Project, as required by CEQA, the CPUC must review and consider the Final EIR, determine whether it complies with CEQA, and whether it reflects the agency's independent judgment and analysis. If the CPUC approves a project with significant unavoidable environmental impacts, it must make a Statement of Overriding Considerations, setting forth reasons supporting its actions, which would be included in the CPUC's decision on the application.

1.4.2 Other Agencies

Several other state agencies will rely on information in this EIR to inform them in their decision over issuance of specific permits related to project construction, operation, and/or maintenance. In addition to the CPUC, state agencies such as the California Department of Transportation (Caltrans), California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), and the Office of Historic Preservation would be involved in reviewing and/or approving the proposed Project. On the federal level, agencies with potential reviewing and/or permitting authority include the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (USACE).

No local discretionary (e.g., use) permits are required, since the CPUC has preemptive jurisdiction over the construction, operation, and maintenance of SCE facilities in California. SCE would still have to obtain all ministerial building and encroachment permits from local jurisdictions, and the CPUC's GO 131-D requires SCE to comply with local building, design, and safety standards to the greatest degree feasible to minimize project conflicts with local conditions.

In the context of electric utility projects, CPUC GO 131-D, Section XIV.B, states that:

> Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.

The CPUC's authority does not preempt special districts, such as air quality districts, or other state agencies or the federal government. SCE would obtain permits, approvals, licenses, and would participate in reviews and consultations as needed with, federal, state, and local agencies as shown in **Table 1-2**, *Summary of Potential Permit Requirements.*

TABLE 1-2
SUMMARY OF POTENTIAL PERMIT REQUIREMENTS

Permits and Other Requirements	Agency	Jurisdiction/Purpose
Federal		
Endangered Species Consultation (Section 7 or Section 10)	U.S. Fish and Wildlife Service (USFWS)	If project has the potential to affect federally listed threatened or endangered species, consultation would be required
Nationwide or Individual Permit (Section 404 of Clean Water Act)	U.S. Army Corps. of Engineers (USACE)	If project construction impacts Waters of the United States, including wetlands
State		
Permit to Construct (PTC)	CPUC	Overall project approval and CEQA review
National Pollutant Discharge Elimination System Construction Stormwater Permit (NPDES)	Regional Water Quality Control Board (RWQCB)	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Encroachment Permit	California Department of Transportation (Caltrans)	Construction, operation, and maintenance within, under, or over state highway (State Route ~~118~~ 91 and Interstate 15) ROW
Endangered Species Consultation (California Endangered Species Act, California Fish and Game Code §2050 et seq., §3511, and §§1900-1913)	California Department of Fish and Wildlife (CDFW)	Construction, operation, and maintenance that may affect a state-listed species or its habitat; incidental take authorization (if required)
Lake and Streambed Alteration (Section 1600)	California Department of Fish and Wildlife (CDFW)	Construction and operation that may have an impact on wetlands or other jurisdictional waterways
Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Certificate of Inclusion	Western Riverside County Regional Conservation Authority	If SCE decides to participate in the MSHCP, it would be required to implement the MSHCP as a Participating Special Entity (PSE)
Local		
Encroachment Permit	Riverside County Flood Control and Water District (RCFCWD)	Construction, operation, and maintenance in a RCFCWD right of way, easement or facility.
Roadway Encroachment Permit (ministerial)	City of Chino; City of Corona; City of Eastvale; City of Norco; City of Ontario; Riverside County	Construction, operation, and maintenance within, under, or over local road ROW
Tree Permit (ministerial)	City of Chino; City of Corona; City of Eastvale; City of Norco; City of Ontario; Riverside County	Tree removal and trimming
After-hours Work Permit	City of Chino; City of Corona; City of Eastvale; City of Norco; City of Ontario; Riverside County	Construction activities outside of permitted hours
Private		
Railroad Crossing Permit	Union Pacific Railroad	Construction, operation, and maintenance within, under, or over railroad ROW

1.5 Public Review and Comment

1.5.1 Educational Outreach and Scoping

On Friday, January 29, 2016, the CPUC published and distributed a Notice of Preparation (NOP) to solicit input from federal, state, and local agencies on the scope and content of information to be considered in the EIR for the Project. The NOP described the Project, included a map showing the location of proposed components of the Project, identified potential environmental impacts, and provided notice for a public participation workshop and Scoping Meeting that was held in Corona on February 17, 2016. It should be noted that subsequent to the release of the NOP, another public participation workshop and Scoping Meeting date (February 16, 2016) was added.

The CPUC also posted newspaper legal advertisements announcing the release of the NOP and the date for the public participation workshop and Scoping Meeting. The announcements were also posted on the CPUC's website. The CPUC published legal advertisements in the San Bernardino Sun and the Press Enterprise on January 29, 2016, and February 13, 2016. An electronic copy of the NOP was also posted on the CPUC's website established for the Project at: www.cpuc.ca.gov/Environment/info/esa/Circle_City/index.html

The CPUC conducted two educational workshops and Scoping Meetings, one on February 16, 2016 at the Circle City Center located at 365 North Main Street, Corona, CA 92880, and one on February 17, 2016, at the Corona Public Library located at 650 South Main Street, Corona, CA 92882. On both dates the workshop was held from 6:00 to 6:30 p.m., and the Scoping Meeting was held from 6:30 to 8:00 p.m. Sixteen members of the public attended on February 16th, and fourteen members attended on February 17. Representatives of the CPUC as well as Environmental Science Associates (ESA), consultant to the CPUC, hosted the meeting.

Meeting attendees were provided materials including written comment forms and speaker cards. During the workshop ESA explained the role of participants and summarized the CPUC's decision and environmental review process and the opportunities for public participation within that process. During the scoping meetings, a description of the proposed Project and alternatives identified by SCE in its PEA were presented and the range of environmental issue areas to be addressed in the EIR was identified. The meetings also included the solicitation of ideas about other possible alternatives to the proposed Project, outlined next steps in the environmental review process, and allowed for the acceptance of public comments. A scoping report was prepared for the proposed Project and is included in the EIR as Appendix A.

Themes of the written and verbal comments in the scoping report that fall with the purview of CEQA are as follows:

- Ensuring that alternatives are adequately addressed;
- Visual and aesthetics impacts;
- Impacts from loss of agricultural land;
- Impacts to air quality from earth disturbance and vehicle emissions;
- Impacts to wildlife and plant life;

- Impacts on parks and recreational areas;
- Impacts to cultural and historical resources;
- Impacts to water quality and water runoff in the Proposed Project area;
- Impacts to wetlands and riparian areas;
- Impacts related to siting, seismic and other hazards;
- Impacts to the surrounding land uses;
- Noise impacts from operation of the subtransmission lines;
- Impacts to public health and safety;
- Impacts to traffic patterns and transportation systems;
- Impacts to water and sewer service facilities; and
- Cumulative impacts.

1.5.2 Public Comment on the Draft EIR

This Draft EIR is being circulated to local, state, and federal agencies and to interested individuals who may wish to review and comment on the report. Appendix B provides a copy of the mailing list to which the Draft EIR and /or Notice of Availability were sent. Written comments may be submitted to the CPUC during the 45-day public review period. Written and verbal comments on this Draft EIR will be accepted via regular mail, fax, and e-mail and at a noticed public meeting (either noticed in this document or under separate cover). All comments received will be addressed in a Response to Comments document, which, together with this Draft EIR, will constitute the Final EIR for the Project.

This Draft EIR identifies the physical environmental impacts of the Project on the environment, indicates whether and how significant impacts would be mitigated or avoided, and identifies and evaluates a reasonable range of alternatives to the Project. This document is intended to provide the CPUC with sufficient information about the environmental effects of the proposed Project such that it may approve the proposed Project. Project approval would be considered at a separate noticed public meeting of the CPUC, subsequent to publication of the Final EIR.

CEQA requires that a Lead Agency shall neither approve nor implement a project as proposed unless it has eliminated or substantially lessened all significant environmental impacts to the extent feasible, and has determined that any remaining significant effects are “acceptable” when balanced against the project’s benefits. In order to approve a project when significant impacts identified in the Final EIR cannot be fully mitigated, the Lead Agency must adopt a statement of overriding considerations, setting forth the reasons supporting its action. Findings of Fact and the Statement of Overriding Considerations must be included in the record of project approval and referenced in the Notice of Determination (NOD).

1.6 Reader's Guide to This EIR

This EIR is organized as follows:

Executive Summary. This summary provides a summary description of the Project, the alternatives, their respective environmental impacts, and identifies the Environmentally Superior Alternative. It also provides a summary table of the impacts of the proposed Project and alternatives, as well as feasible mitigation measures to reduce identified effects.

Chapter 1, *Introduction*. The introduction provides a discussion of the proposed Project's background and project objectives, briefly describes the Project, and outlines the public agency use of the EIR.

Chapter 2*, Project Description*. This chapter provides a detailed description of the Project.

Chapter 3, *Alternatives Analysis*. Provides a description of the alternatives screening and evaluation process, describes the alternatives considered but eliminated from further analysis and the rationale therefore, and describes the alternatives analyzed in Chapter 4.

Chapter 4, *Environmental Analysis*. Provides a comprehensive analysis and assessment of impacts and mitigation measures for the proposed Project and alternatives, including the No Project Alternative. This chapter is divided into sections for each environmental issue area (e.g., air quality, biological resources, etc.) that describe the environmental and regulatory settings for each resource area, as well as identifying impacts and mitigation measures for the proposed Project and each alternative.

Chapter 5, *Comparison of Alternatives*. Provides a discussion of the relative environmental advantages and disadvantages of the proposed Project and the alternatives that were evaluated in the Draft EIR, and identifies the Environmentally Superior Alternative.

Chapter 6, *Cumulative Effects*. Identifies the cumulative projects considered in the analysis of cumulative impacts. Provides a discussion of the cumulative impacts of the Project in combination with reasonable foreseeable past, present and future projects.

Chapter 7, *Other CEQA Considerations*. Provides a discussion of growth-inducing impacts, significant environmental effect that cannot be avoided, irreversible environmental changes, and cumulative impacts.

Chapter 8, *Report Preparers*. Identifies the primary authors of this Draft EIR

Chapter 9, *Mitigation Monitoring, Reporting, and Compliance Program*. Provides a discussion of the CPUC's mitigation monitoring, reporting and compliance program requirements for the project as approved by the CPUC.

Appendix A. Scoping Report.

Appendix B. Mailing List and Certificate of Service.

Appendix C. (EMF) Field Management Plan.

Appendix D. Air Quality and GHG Calculations.

Appendix E. Cultural Resources Technical Report.

Appendix F. Tribal Consultation Record.

Appendix G. Circle City and Mira Loma-Jefferson 66 kV Subtransmission Line Project Noise Supplement

List of Figures.

List of Tables.

References – Introduction

Southern California Edison (SCE), SCE, 2015. *Application of Southern California Edison Company (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV and Proponent's Environmental Assessment for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project*. December 4, 2015.

SCE, 2016. Response to California Public Utilities Commission (CPUC) Data Request 4, Question 10. Submitted to the CPUC July 27, 2016.

SCE, 2017a. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 15, Question 7 for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, October 2017.

SCE, 2017b. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 10 for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, June 2017.

SCE, 2017c. Mira Loma 2016-2027 System Loads with Circle City, provided via e-mail to Matt Fagundes, ESA, from Paul McCabe, SCE, February 8, 2017.

SCE, 2017d. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 6, Question 6.2, Verbal Response for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, October 27, 2017.

SCE, 2017e. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 15, Question 15, Response for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, September 28, 2017.

SCE, 2017f. Circle City 66/12 kV Substation and Mira Loma-Jefferson 66 kV Line Project, Presented by Southern California Edison to CPUC – Energy Division, December 20, 2017.

SCE, 2018. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 16, Question 1, Response for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, January 11, 2018.

SCE, 2018a. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 17, Questions 1 and 2 Responses for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, August 15, 2018

This page intentionally left blank

CHAPTER 2
Project Description

2.1 Introduction

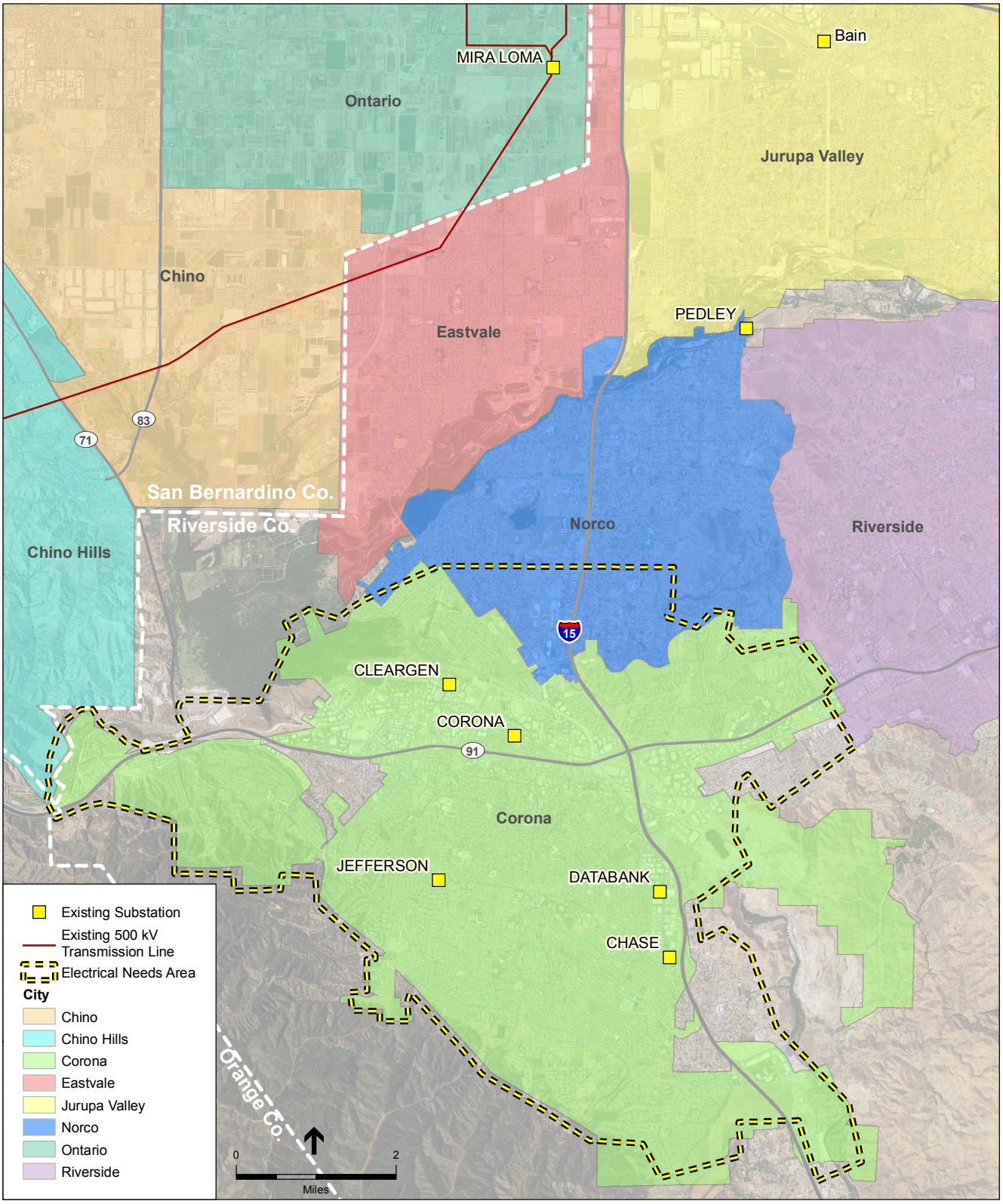
Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.15-12-007), filed on December 4, 2015 (SCE, 2015) requested a Permit to Construct (PTC) a new substation and 66-kilovolt (kV) subtransmission lines and related distribution components in Riverside County and San Bernardino County known as the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (Project). SCE's application for a PTC included the Proponent's Environmental Assessment (PEA), which SCE prepared pursuant to Rule 2.4 of the CPUC's Rules of Practice and Procedure. The following description of the Project is based on information provided in the application and other input provided by SCE in response to a CPUC data requests (SCE, 2016, 2017a, and 2017b).

2.2 Project Location

SCE has identified the electrical needs area (ENA) to be served by the Project as including the northwestern Riverside County area, including the cities of Corona and Norco and the surrounding area of unincorporated Riverside County (SCE, 2015). The ENA is shown in **Figure 2-1**, *Electrical Needs Area*. More specifically, the Project would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario (see **Figure 2-2**, *Project Location*). The proposed Circle City Substation would be located approximately 0.25-mile south of the corner of Magnolia Avenue and East 6th Street in Corona; the existing Mira Loma Substation is located off Hamner Avenue near the corner of Cantu-Galleano Ranch Road in Ontario.

2.3 Existing System

The ENA is currently served by a portion of SCE's Mira Loma System. The Mira Loma System within the ENA is comprised of four substations (Mira Loma, Corona, Chase, and Jefferson) and other infrastructure including 220/66 kV transformers, 66 kV subtransmission lines, 66/12 kV transformers, and 12 kV distribution lines. Three of the substations are 66/12 kV distribution substations (Corona, Chase, and Jefferson) and provide electrical service to approximately 59,000 metered customers within the ENA. At Mira Loma Substation, electrical transmission voltage is transformed from 220 kV to 66 kV and distributed by 66 kV subtransmission lines to 66/12 kV distribution substations within the Mira Loma System. The 66 kV subtransmission lines that currently serve the ENA are the:

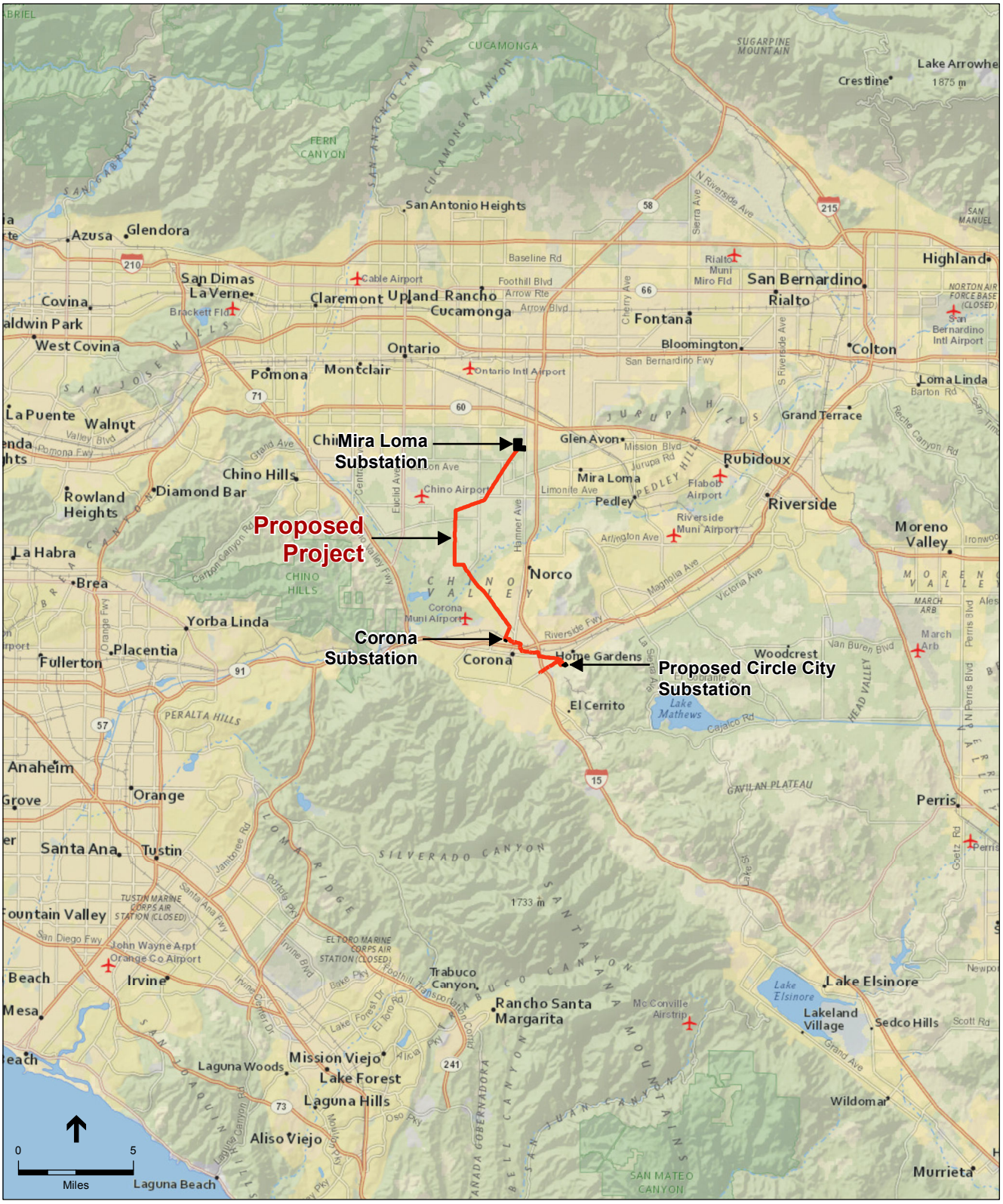


SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-1

Electrical Needs Area



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-2
Project Location

- Mira Loma-Corona;
- Mira Loma-Corona-Jefferson;
- Mira Loma-Corona-Pedley;
- Cleargen-Jefferson; and
- Archibald-Chino-Corona subtransmission lines.

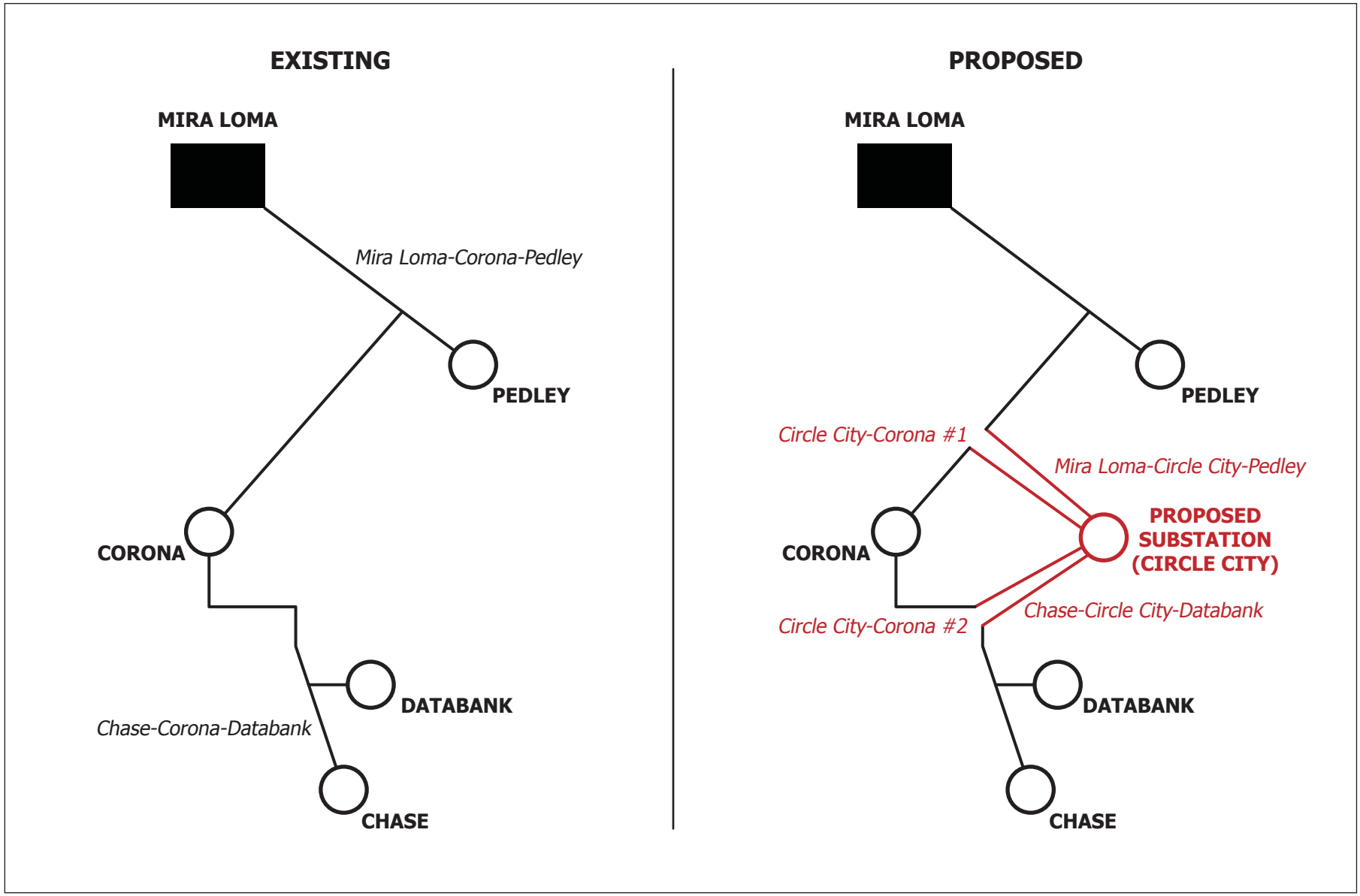
These lines form a network of 66 kV subtransmission lines, with subtransmission voltage that originates at Mira Loma Substation and terminates at the various distribution substations within the ENA. See **Figure 2-3a**, *Existing and Proposed System Configuration for Circle City Substation*, and **Figure 2-3b**, *Existing and Proposed System Configuration for the Mira Loma-Jefferson Subtransmission Line*.

2.4 Overview of the Project

This section provides an overview of SCE's Project. The Project consists of construction, operation, and maintenance of the components described below:

- Construction of a new 66/12 kV substation (the "Circle City Substation") and up to six new underground 12 kV distribution getaways that would exit the new Circle City Substation. The Circle City Substation and associated distribution getaways would be located on a disturbed, approximately 19.5-acre site in an industrial area of the City of Corona. It would be located approximately 0.25 mile south of the corner of Magnolia Avenue and East 6th Street between Leeson Lane and All American Way. Access to the substation would be from Leeson Lane. The substation would be an unstaffed, automated, low-profile 56 megavolt-ampere (MVA), substation with two open switchrack positions. The Circle City Substation is described in greater detail in Section 2.5.1, *Circle City Substation*; the distribution getaways are described in Section 2.5.3, *Distribution Getaway and Duct Banks*.
- Construction of four new 66 kV subtransmission source lines in double-circuit[1] configurations with a combination of overhead and underground construction as follows:
  - Two source lines would be approximately 3.5 miles in length and would be created by connecting the existing Mira Loma-Corona-Pedley 66 kV Subtransmission Line to the proposed Circle City Substation forming the new Mira Loma-Circle City-Pedley and Circle City-Corona No. 1 66 kV subtransmission lines (the "Pedley Source Lines") within the City of Corona. The Pedley Source Lines are described in greater detail in Section 2.5.2.2, *Mira Loma-Circle City-Pedley and Circle City-Corona No. 1 66 kV Subtransmission Lines (the Pedley Source Lines)*.
  - Two source lines would be approximately 1.2 miles in length and would be created by connecting the existing Chase-Corona-Databank 66 kV Subtransmission Line from a point just west of Rimpau Avenue on the south side of Magnolia Avenue to the Circle City Substation forming the new Circle City-Corona No. 2 and Chase-Circle City-Databank 66 kV subtransmission lines (the "Databank Source Lines") within the City of Corona. The Databank Source Lines are described in greater detail in Section 2.5.2.3, *Circle City-Corona No.2 and Chase-Circle City-Databank 66 kV Subtransmission Lines (the Databank Source Lines)*.

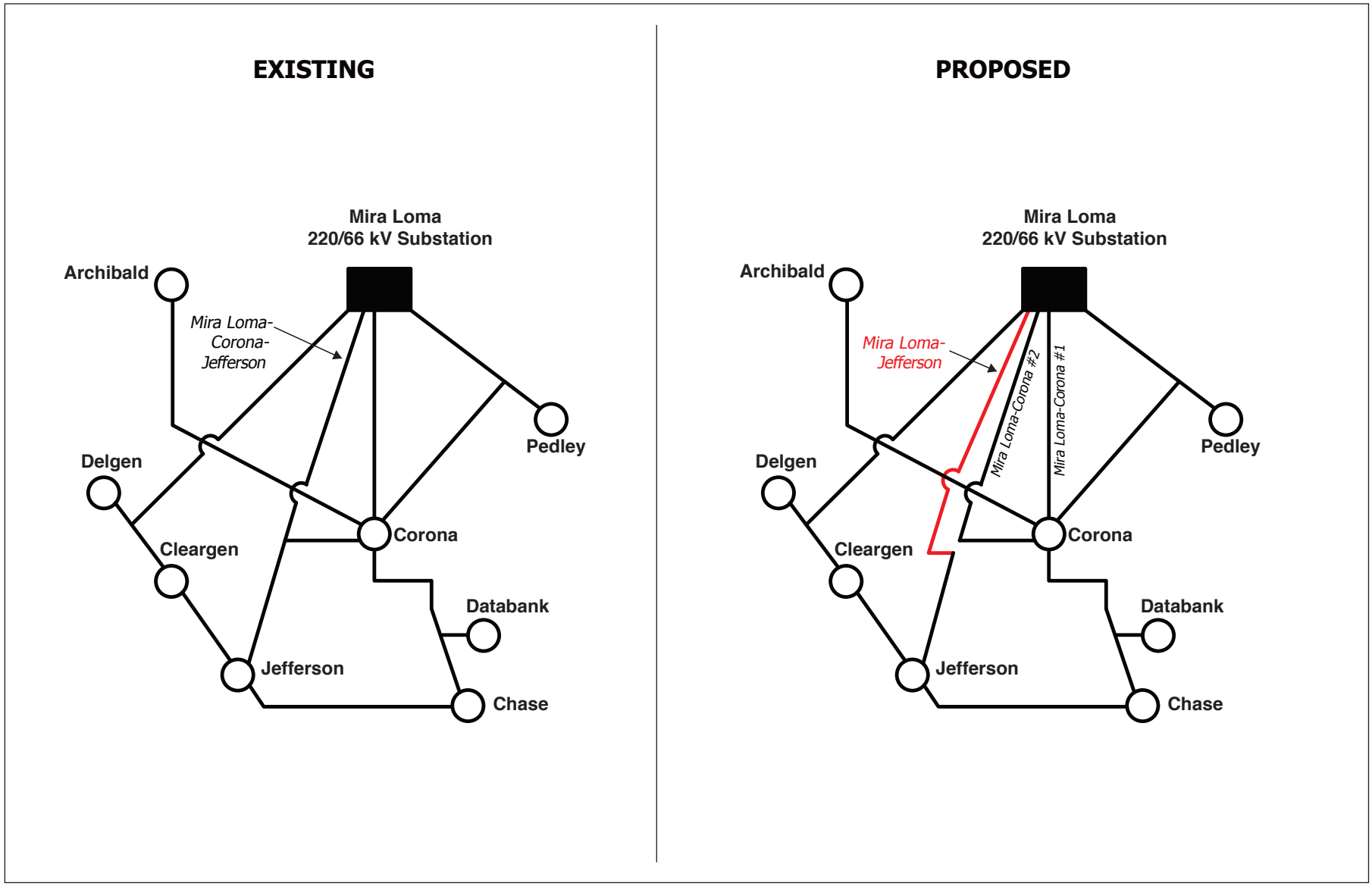
[1] A double-circuit configuration consists of two independent 66 kV lines routed on the same support structures. In overhead construction, both 66 kV subtransmission lines would be routed on the same poles. In underground construction, both 66 kV subtransmission lines would be routed down from a single pole and then continue underground through an underground conduit system.



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-3a
Existing and Proposed System Configuration for Circle City Substation



SOURCE: SCE, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-3b
Existing and Proposed System Configuration
for Mira Loma-Jefferson Subtransmission Line

- Construction of an approximately 10.9-mile 66 kV subtransmission line (the "Mira Loma-Jefferson Subtransmission Line"), which would be installed using a combination of both overhead and underground construction techniques. The new line would be constructed from SCE's existing Mira Loma Substation in the City of Ontario, located west of Interstate 15 (I-15) off Hamner Avenue near the corner of Cantu-Galleano Ranch Road, to a location in the City of Corona, near southwest corner of SCE's existing Corona Substation near the corner of North Cota Street and Railroad Street. This line would run in a southerly direction within San Bernardino and Riverside counties within the cities of Ontario, Eastvale, Chino, Norco, and Corona. The proposed Mira Loma-Jefferson Subtransmission Line is described in greater detail in Section 2.5.2.4, *Mira Loma-Jefferson 66 kV Subtransmission Line*.
- Relocation of approximately 1.9 miles of an existing overhead 33 kV distribution line along River Road between Corydon Avenue and North Cota Street in the cities of Norco and Corona to an underground position. This proposed relocation is described in more detail in Section 2.5.2.4, *Mira Loma-Jefferson 66 kV Subtransmission Line*.
- Installation of new or upgraded telecommunications equipment within existing Mechanical and Electrical Equipment Rooms (MEERs) to connect the proposed subtransmission facilities to SCE's telecommunications system within Circle City, Mira Loma, Pedley, Corona, Chase, Jefferson, Cleargen, and Bain substations.

The overall purpose and objectives of the proposed Project are described in Section 1.3 of this Draft EIR.

2.5 Project Components

The main components of the Project are described in detail below.

2.5.1 Circle City Substation

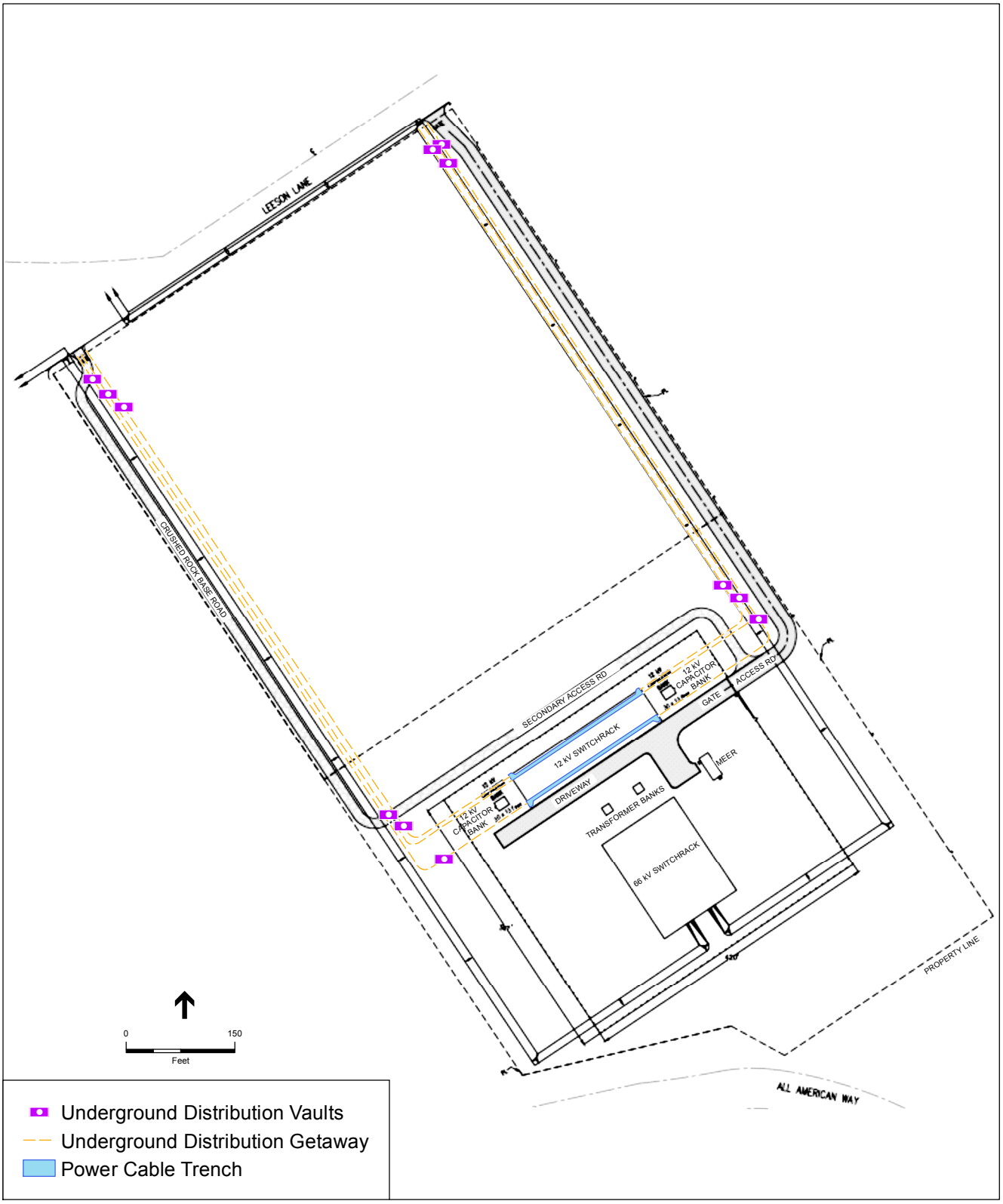
2.5.1.1 Overview

The Circle City Substation, an unstaffed and automated 66/12 kV low-profile 56 MVA substation would be constructed on a 19.5-acre site in the City of Corona. The substation would be comprised of a 420-foot by 387-foot facility located on approximately 11.08 acres of the site. Refer to **Figure 2-4a**, *Substation Layout*, and **Figure 2-4b**, *Proposed Circle City Substation*, which shows the proposed substation's layout and a profile view of the substation site.

2.5.1.2 66 kV Switchrack

The substation would include a ~~steel~~ 66 kV steel switchrack, approximately 5 feet tall, 156 feet long and 120 feet wide. The switchrack would consist of both a north operating bus and a south operating bus and would contain four positions, each connecting to the north and to the south operating buses and designed to support four subtransmission lines, two transformer banks, and two vacant positions for future use. The use of these two vacant positions would not be required within the 10-year forecast period and is not considered to be reasonably foreseeable.[2] Therefore, any

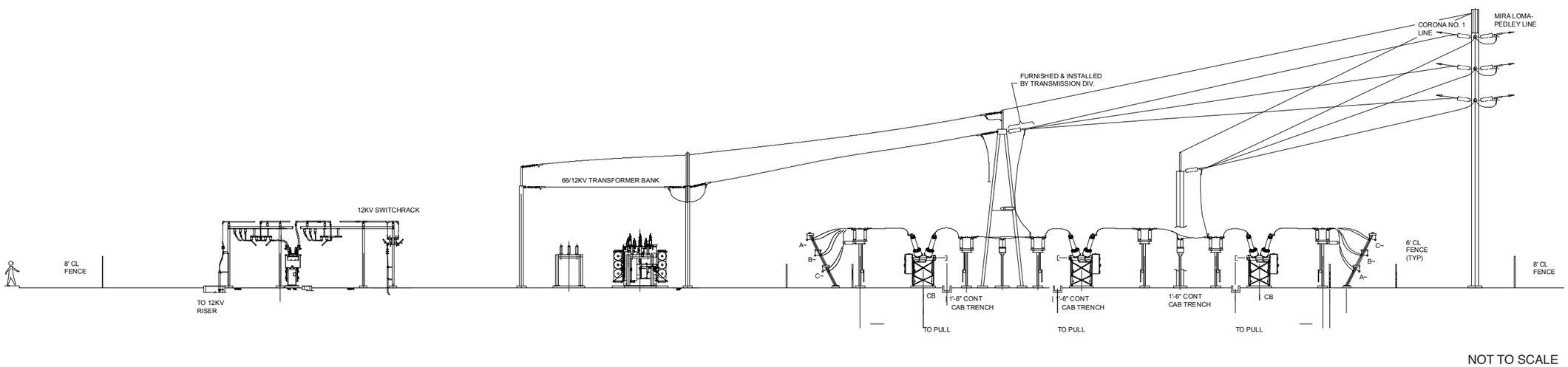
[2] SCE has stated that a potential future capacity upgrade to 112 MVA could occur between the years of 2034 and 2040. The CPUC does not consider this to be reasonably foreseeable because it would occur well beyond the 10-year forecast period for the Project when variables that contribute to growth in the ENA, such as specific growth-inducing projects and local economic conditions, cannot be estimated with assurance of not being overly speculative.



SOURCE: SCE, 2016, 2017

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-4a
Substation Layout



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-4b
Proposed Circle City Substation Profile View

This page intentionally left blank

construction of facilities related to the future use of the vacant positions is not considered in this EIR. Each bus would be approximately 120 feet long, and consist of two approximately 2,156-thousand-circular-mil (kcmil) Aluminum Conductor Steel-reinforced (ACSR) conductors for each of the three electrical phases.[3] Two of the 66 kV switchrack positions each would be equipped with two circuit breakers and four group-operated, horizontally-mounted disconnect switches. Two 66 kV switchrack positions would be equipped with three circuit breakers; six group-operated, horizontally-mounted disconnect switches; and two potential transformers per line position.

2.5.1.3 66/12 kV Transformers

The substation would include two 28 MVA, 66/12 kV transformers with adjacent group-operated disconnect switches on the high-voltage and low-voltage sides. The transformer area dimensions would be approximately 25 feet tall, 67 feet long, and 109 feet wide.

2.5.1.4 12 kV Switchrack

The substation also would include a 12 kV low-profile steel switchrack, the dimensions of which would be approximately 15 feet tall, 34 feet long, and 216 feet wide. The switchrack would include a 12-position operating and transfer bus of which seven positions would be equipped for use, including four positions for 12 kV circuits, two positions for transformer banks, and one position for a bus tie between the operating bus and transfer bus. Five positions would be vacant and available for future use.

2.5.1.5 Capacitor Banks

There would be two 12 kV, 4.8 MVA reactive capacitor banks installed at the substation. Each 12 kV capacitor bank would be approximately 17 feet tall, 30 feet long, and 13 feet wide.

2.5.1.6 Mechanical and Electrical Equipment Room

The substation would include a Mechanical and Electrical Equipment Room (MEER) that would be a prefabricated steel structure with dimensions of approximately 11 feet tall, 60 feet long, and 15 feet wide. The MEER would have sidewalls designed with a light tan exterior color and with a flat roofline, wall joints, and doorway colored brown/bronze. The MEER would be equipped with two air-conditioning units that would maintain the interior temperature at 76 degrees Fahrenheit (°F) and would house equipment, such as protective relaying equipment, telecommunications equipment, substation automation and control equipment, batteries, and associated equipment. Control cable trenches would be installed to connect the MEER to the 66 kV and 12 kV switchracks.

2.5.1.7 Restroom Facilities

The substation would include a permanent restroom installed within the substation perimeter. SCE would apply to the City of Corona for sewer and water service. The restroom enclosure would be approximately 10 feet tall, 14 feet long, and 14 feet wide. Exterior coloring would be

[3] A circular mil (cmil) is a unit equal to the area of a circle with a diameter of 1 mil (0.001 inch), and is used chiefly in specifying cross-sectional areas of round conductors. One kcmil is 1,000 circular mils.

consistent with the MEER: light tan roof and walls with brown/bronze roofline, wall joints, and doorway. Trenching for the sewer and water lines would extend from the restroom structure to a point along Leeson Lane for a distance of approximately 1,000 feet. The sewer pipe trench would be up to 10 feet deep and approximately 5 feet wide, while the water line would be installed with a minimum cover per City of Corona standards with a trench width estimated to be approximately 3 feet wide. Trenching for the water line also would extend from the restroom structure to a point along Leeson Lane.

2.5.1.8 Substation Access

Primary access to the substation would be from Leeson Lane along the eastern corridor of the substation property. Access would be achieved via a new paved road approximately 24 feet wide and 1,000 feet long. A new road would be constructed to provide secondary access to the substation from Leeson Lane along the western corridor of the substation property. This secondary access road would be constructed on a crushed rock base and would measure approximately 16 feet wide and 1,400 feet long. An automated substation entry gate approximately 8 feet high and 26 feet wide would be installed at the primary Leeson Lane entrance. Power for operation of the gate and security lighting would be provided. In addition to the substation entry gate, an approximately 4-foot-wide walk-in gate would be installed within the substation fence for personnel access and would be secured by a padlock.

2.5.1.9 Lighting and Utilities

Lighting at the new substation would consist of light-emitting diode, low-intensity lights located in the switchracks around the transformer banks and in areas of the yard where operation and maintenance activities may take place during evening hours for emergency and scheduled work. Maintenance lights would be controlled by a manual switch and normally would be in the “off” position. A light, indicating the operation of the rolling gate, would automatically turn on once the gate begins to open and would turn off shortly after the gate is closed.

Existing water, sewer, and electrical power utilities which would be used to supply/service the substation are located within Leeson Lane.

2.5.1.10 Substation Perimeter

The substation site would be enclosed on all sides by an 8-foot-high perimeter concrete masonry unit block wall with a light tan color. Five strands of barbed wire would be affixed near the top of the wall on the inside; the barbed wire would not be visible from the outside of the substation site.

2.5.2 Subtransmission Lines

2.5.2.1 Overview

The Project would include four new 66 kV subtransmission source lines to supply electricity to the new Circle City Substation, and one new 66 kV subtransmission line connecting the Mira Loma and Jefferson substations. See Figures 2-3a, *Existing and Proposed System Configuration for Circle*

City Substation, and 2-3b, *Existing and Proposed System Configuration for Mira Loma-Jefferson Subtransmission Line*, for the system configurations that would be associated with the proposed source lines and the Mira Loma-Jefferson subtransmission line, respectively. The proposed alignments for the lines are described in detail below and are illustrated in **Figure 2-5**, *Proposed Source Lines*, and **Figure 2-6**, *Mira Loma-Jefferson 66 kV Subtransmission Line Route*. These figures indicate how many poles of which types would be removed or installed, and which segments would be installed aboveground and below. The numbers and locations of proposed vaults and duct banks also are indicated. See also **Figure 2-7**, *Subtransmission Structures*, which illustrates single-circuit and double-circuit configurations with and without underbuild (i.e. additional wires, cables, and other facilities below the subtransmission conductor position on the structures) for the different types of poles and other structures proposed for installation. Relevant terms are discussed below. Refer to Figures 2-12 through 2-21 for the proposed subtransmission line pole locations. Prior to placement of poles and other subtransmission infrastructure, SCE would conduct an evaluation of existing and approved features along the public rights-of-way, including but not limited to, existing and planned drive ways, street light poles, underground utilities, and other features. Exact pole and infrastructure locations would be planned to minimize any conflict with these features.

2.5.2.2 Mira Loma-Circle City-Pedley and Circle City-Corona No. 1 66 kV Subtransmission Lines (the Pedley Source Lines)

This portion of the Project would connect three existing substations to the proposed Circle City Substation: the existing Corona, Pedley, and Mira Loma substations. This would create two new source lines referred to collectively in this EIR as the Pedley Source Lines, which would be located in a double-circuit configuration along the same poles and within the same underground duct banks. The Pedley Source Lines would include:

- Circle City-Corona No. 1 Subtransmission Line; and
- Mira Loma-Circle City-Pedley Subtransmission Line.

The Pedley Source Lines would consist of approximately two new wood poles, 76 new light weight steel (LWS) poles, 23 new tubular steel poles (TSPs), four underground vaults, and approximately 2,000 linear feet of new underground duct bank containing six conduits and six cables. Subtransmission line pole types are described in Section 2.5.2.5, *Subtransmission Poles*. The lines would be installed above ground at the intersection of North Cota Street and Harrison Street by looping into an existing 66 kV subtransmission line (see Figure 2-3a). The line would be on the south side of West Harrison Street to North Sheridan Street, where it would turn south on the east side of the road. Along the south side of West Blaine Street the route would turn east towards Main Street. At the west side of Main Street, the line would convert to underground and would continue underground for approximately 790 linear feet following the Blaine Street undercrossing of Main Street (see Figure 2-19). Construction-related trenching for the underground run would occur. On the east side of Main Street, the underground line would convert to overhead and would continue easterly along the north side of Blaine Street to Joy Street, where the route would turn south on Joy Street and continue along the east side of Joy Street until just north of Pearl Street (see Figure 2-20).

From this point, the source lines would continue underground to the intersection of Grand Boulevard and 3rd Street, then continue east on 3rd Street for approximately 100 feet, where the lines would transition back to an overhead configuration. The overhead lines then would continue to the east along the south side of East 3rd Street. The existing distribution poles would be replaced with new subtransmission poles and the existing distribution circuits would be installed onto the new subtransmission poles (for a complete description of the distribution poles that would be replaced with new subtransmission poles, refer to Section 2.5.4, *Relocation of Existing Distribution Facilities*). At the end of East 3rd Street, the lines would enter privately owned property and would continue easterly to the west side of the existing Temescal Wash flood control channel (see Figure 2-20). The lines would span the flood control channel to reach the north side of Quarry Street, where they would continue to the east side of El Sobrante Road, then would head south. At the intersection of East 6th Street the lines would head east, crossing I-15 and continuing east on the north side of East 6th Street to Radio Road. At Radio Road the lines would cross to the south side of East 6th Street and would continue east to the east side of Magnolia Avenue, where they would turn south to the south side of Leeson Lane (see Figure 2-21). At Leeson Lane the lines would continue northeastward to a location approximately 800 feet northeast of Magnolia Road, where they would continue southeast to the proposed Circle City Substation where they would terminate (see Figure 2-21). The Pedley Source Lines alignment would have a total length of approximately 3.5 miles.

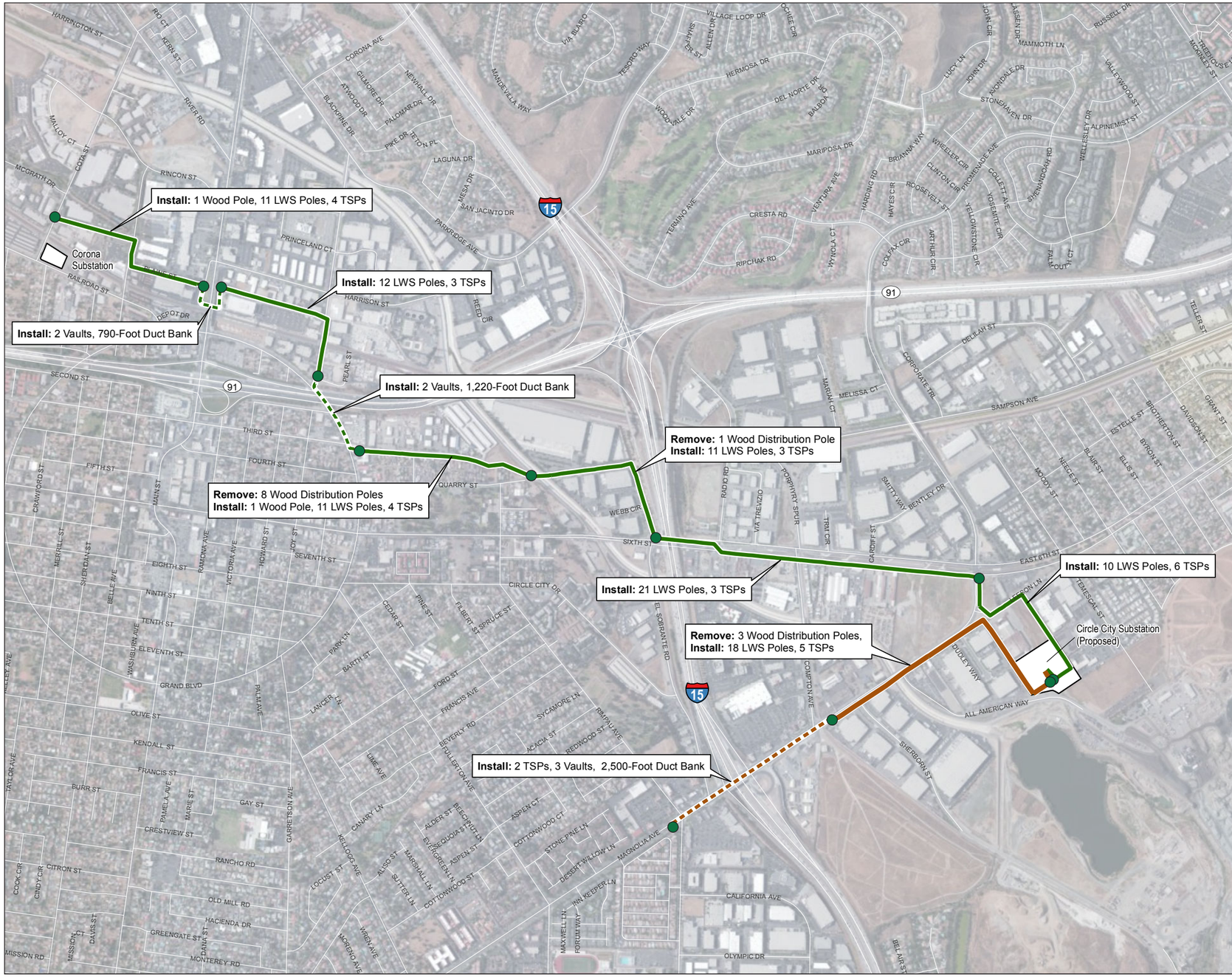
2.5.2.3 Circle City-Corona No.2 and Chase-Circle City-Databank 66 kV Subtransmission Lines (the Databank Source Lines)

This component of the Project would connect the existing Corona Substation to the proposed Circle City Substation and would connect the existing Chase and Databank substations to the proposed Circle City Substation, creating two new subtransmission source lines referred to in this EIR as the Databank Source Lines, which would be located in a double-circuit configuration along the same poles and within the same underground duct banks. The Databank Source Lines would include:

- the Circle City-Corona No. 2 Subtransmission Line; and
- the Chase-Circle City-Databank Subtransmission Line.

The Databank Source Lines would consist of approximately 18 new LWS poles, seven new TSPs, three underground vaults, and approximately 2,500 linear feet of new underground duct bank containing six conduits and six cables. The lines would loop into an existing 66 kV subtransmission line approximately 100 feet west of Rimpau Avenue on the south side of Magnolia Avenue. A tubular steel riser pole would be installed to accommodate the overhead connection to the existing 66 kV subtransmission line and allow for the line to be placed underground. On Magnolia Avenue, the lines would head northeasterly underground, cross over I-15 through an existing utility bridge cell[4] located within the Magnolia Avenue bridge, cross under existing Burlington Northern Santa Fe (BNSF) Railroad Company Right of Way, and then would convert to overhead northeast of Compton Avenue. The lines would continue northeasterly along the south side of Magnolia Avenue

[4] A bridge cell is a pre-casted concrete tunnel located below the bridge deck (sub-deck) that allows for utility facility crossings, such as gas, electrical, and communication facilities.



Substation
Pedley Source Lines - Overhead
Pedley Source Lines - Underground
Databank Source Lines - Overhead
Databank Source Lines - Underground
Segment Break

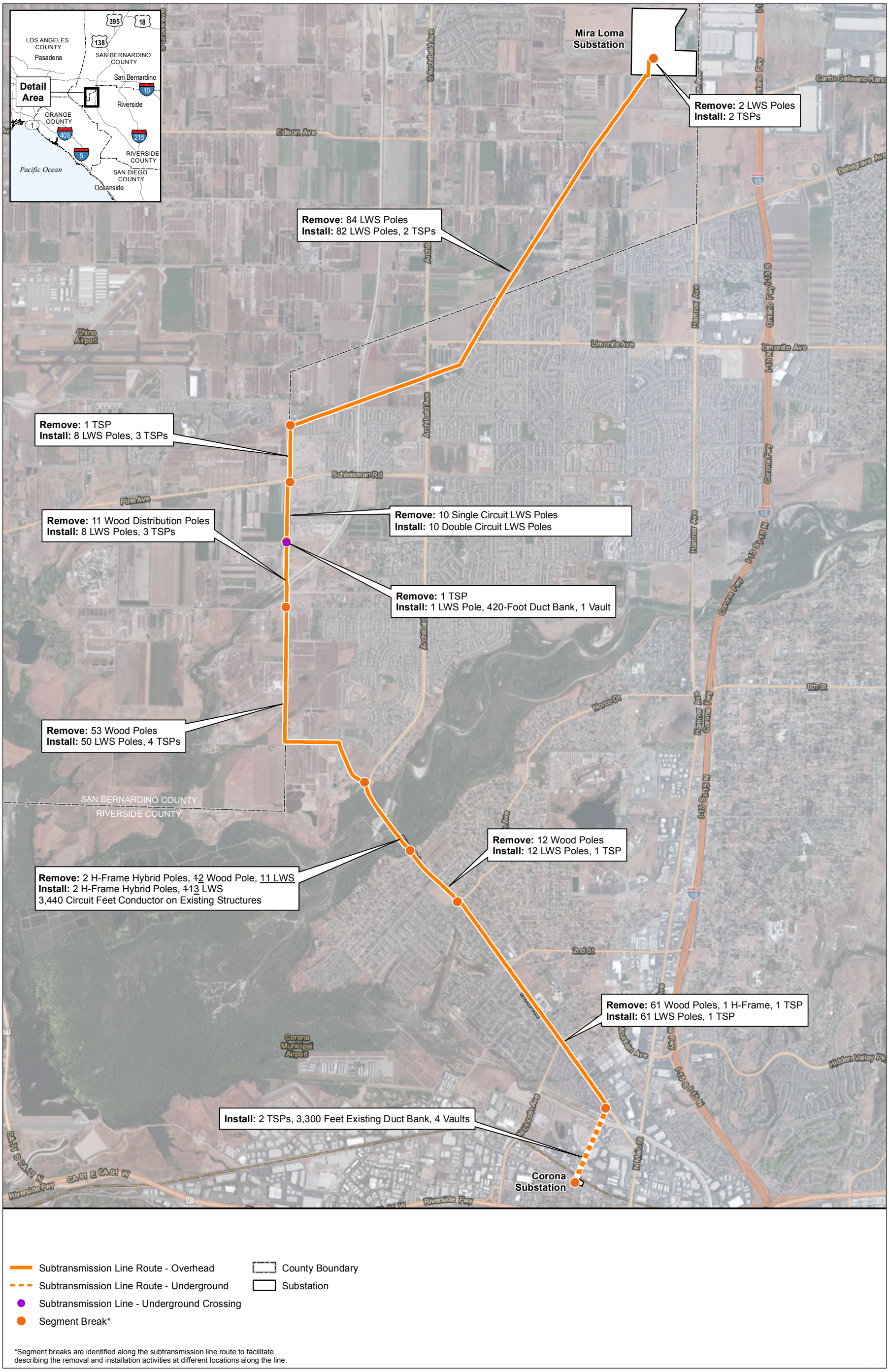
Note: The pole quantities indicated may increase or decrease upon completion of final engineering. Table 3-2: Subtransmission Structure Quantity and Dimensions provides a range of approximate pole quantities based on the preliminary design.

1:15,000
0 1,000 2,000 Feet

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-5
Proposed Source Lines

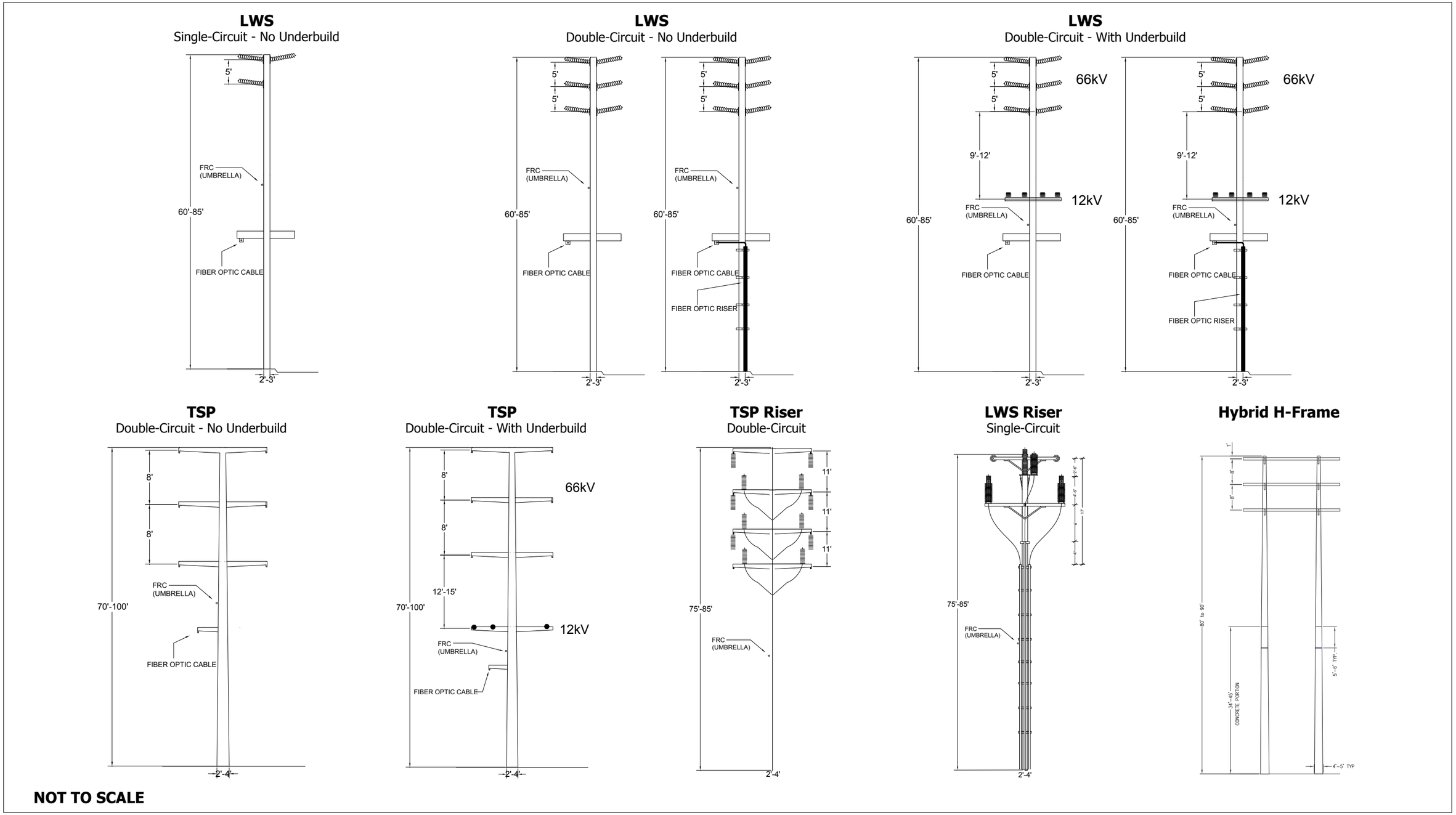


SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-6

Mira Loma-Jefferson 66 kV Subtransmission Line Route



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-7
Subtransmission Structures

This page intentionally left blank

to Leeson Lane, where they would continue northeast along the south side of Leeson Lane, and then turn and travel southeast onto private property to the proposed Circle City Substation site (see Figure 2-20). The Databank Source Lines alignment would have a total length of approximately 1.2 miles.

2.5.2.4 Mira Loma-Jefferson 66 kV Subtransmission Line

A new 66 kV subtransmission line would be constructed to connect the existing Mira Loma Substation to the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line near Corona Substation, creating the Mira Loma-Jefferson 66 kV Subtransmission Line. The route would consist of approximately 244 LWS poles, 18 TSPs, two H-frame hybrid poles, 420 linear feet of new underground duct bank containing six conduits, one underground vault, and approximately 3,300 feet of underground cable installation within existing duct bank. See Section 2.5.2.5, *Subtransmission Poles*, for a description of the subtransmission line pole types that would be associated with this subtransmission line.

The proposed subtransmission line would originate at Mira Loma Substation where two existing LWS poles within the substation would be replaced with two TSPs and two LWS poles would be replaced with two new LWS poles to accommodate the new Mira Loma-Jefferson and Mira Loma-Corona No. 2 66 kV subtransmission lines. The new subtransmission lines would then extend from the substation in a southwestern direction on two existing TSPs that currently support the Mira Loma-Corona-Jefferson 66 kV Subtransmission Line (see Figures 2-12 through 2-14). The new subtransmission lines would parallel the east side of the existing Mira Loma-Serrano No. 1 and No. 2 500 kV transmission lines and the Mira Loma-Olinda 220 kV Transmission Line to Hellman Avenue and would result in the replacement of 84 LWS poles with 82 LWS poles and two TSPs to accommodate the two circuits. At Hellman Avenue, the route would turn south along the east side of Hellman Avenue on eight new LWS poles and three new TSPs to Schleisman Road (see Figure 2-15).

At Schleisman Road, the subtransmission lines would cross to the west side of Hellman Avenue and continue south along Hellman Avenue replacing 10 existing LWS poles with new LWS poles for approximately 2,300 feet. According to the PEA, SCE intends to use these 10 LWS poles instead of replacing them; however, during final engineering, it may be determined that these existing poles do not meet the appropriate pole loading requirements to support two subtransmission line circuits. Therefore, for the purpose of this EIR, it is assumed that the poles would be replaced, but in the event that the existing poles are determined to be suitable for the Project, they would not be replaced with new LWS poles.

At Hellman Avenue, approximately 470 feet south of Outback Way, the Mira Loma-Corona No. 2 line, currently known as the Mira Loma-Corona-Jefferson line, would diverge from the proposed route to the west on existing poles. At this location the existing Archibald-Chino-Corona 66 kV Subtransmission Line would be converted to underground for approximately 420 feet in order to accommodate the proposed subtransmission line crossing (see Figure 2-15).

The single-circuit Mira Loma-Jefferson line would continue heading south to Chino Corona Road, replacing approximately 11 distribution wood poles with eight LWS poles and three TSPs. At the

intersection of Chino Corona Road and Hellman Avenue, the Mira Loma-Jefferson line would join the Archibald-Chino-Corona line in a double-circuit configuration and continue south along the west side of Hellman Avenue to River Road (see Figure 2-16). At River Road, the lines would head east along the south side of River Road to Baron Drive, then would turn south along the west side of Baron Drive to River Road replacing existing structures associated with the Archibald-Chino-Corona 66 kV Subtransmission Line, which would require the removal of approximately 54 wood poles and installation of approximately 50 LWS poles and four TSPs (see Figures 2-16 and 2-17); the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor associated with the Archibald-Chino-Corona line.

The subtransmission line then would head southeast along the southwestern side of River Road, replacing two wood poles and five LWS poles with seven new LWS poles, and cross the Santa Ana River. At the Santa Ana River crossing, the existing H-frames would be replaced with engineered hybrid H-frames (see Figure 2-17). The route would continue southeast along the southwest side of River Road replacing six LWS poles from the Archibald-Chino-Corona 66 kV Subtransmission Line with six new LWS poles, replacing 12 wood poles with 12 LWS poles and one TSP. At the intersection of River Road and Corydon Avenue, the Mira Loma-Jefferson 66 kV Subtransmission Line would cross River Road and continue on the northeastern side of River Road in a southern direction, replacing existing wood poles (Archibald-Chino-Corona 66 kV Subtransmission Line) with 61 LWS poles and one TSP (see Figure 2-18); the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor.

The existing 33 kV distribution line would convert to underground along River Road between Corydon Avenue and North Cota Street to accommodate the proposed subtransmission line (see Figures 2-18 and 2-19). At the intersection of North Cota Street and River Road, the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to underground on a new tubular steel riser pole and attach to an existing duct bank within North Cota Street, and would then continue along North Cota Street to a location just outside of Corona Substation, where the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to an overhead configuration at a new tubular steel riser pole and tap into an existing 66 kV subtransmission line (see Figure 2-19).

2.5.2.5 Subtransmission Poles

The Project would utilize LWS poles, H-frame hybrids, wood poles, and TSPs. Each subtransmission structure would support, at a minimum, polymer post insulators and dead-end insulators, 954 kcmil stranded aluminum conductor (SAC), and 4/0 ACSR fault return conductor (FRC). The subtransmission conductor would be a minimum of 30 feet aboveground as measured at the point where it would be connected to the pole. The vertical distance between the conductors would be a minimum of five feet. The span length between poles would range from 80 to 600 feet. The approximate dimensions of the proposed structure types are summarized in **Table 2-1**, *Subtransmission Structure Quantity and* Dimensions. All 66 kV subtransmission line structures would be designed consistent with the Avian Power Line Interaction Committee (APLIC)'s Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006.[5]

[5] Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006 published by the Edison Electric Institute and the Avian Power Line Interaction Committee in collaboration with the Raptor Research Foundation. This document can be found at http://www.Aplic.org/SuggestedPractices2006(LR).pdf.

TABLE 2-1
SUBTRANSMISSION STRUCTURE QUANTITY AND DIMENSIONS

Pole/ Structure Type	Approximate Quantity	Approximate Diameter (feet)	Approximate Height Above Ground (feet)	Approximate Auger Hole Depth (feet)	Approximate Auger Diameter (feet)
Wood Pole	2	2 to 3	65 to 70	10 to 11	2 to 4
LWS Pole	338	2 to 3	60 to 85	8 to 11	2 to 4
TSP	48	3 to 6	70 to 105	Not Applicable (NA)	NA
TSP Concrete Foundation	48	4 to 8	Subgrade to 2	20 to 40	5 to 9
H-Frame Hybrid	2	4 to 5	80 to 90	25 to 50	6 to 8
Wood Guy Stub	2	1 to 2	29 to 39	6 to 8	2 to 3

NOTES:

1 Specific pole/structure type, quantity, height, and spacing would be determined upon final engineering and other factors, and would be constructed in compliance with CPUC General Order (GO) 95 and SCE standards.

2 Wood poles ~~would~~ could consist of a wood pole with a steel wire known as a "down guy," which attaches to a 1-inch-diameter anchor at ground level located at the back side of the wood pole and a steel span guy that attaches to the top of the wood pole and the subtransmission poles (wood and LWS).

3 An FRC would be installed on all LWS poles, including where the structures support distribution circuits. The FRC is attached to the substation ground grid from the 66 kV source substation and to all the LWS poles on the line. A clamp attachment would bond the FRC to all of the LWS poles at approximately 25 feet to 35 feet above ground level.

4 The TSPs would be attached to concrete foundations that would be approximately 4 to 8 feet in diameter and would extend underground by approximately 20 to 40 feet, with up to approximately 2 feet of concrete visible aboveground. Each TSP foundation would require approximately 13 to 80 cubic yards of concrete.

5 Approximately eight subtransmission vaults and approximately 4,910 linear feet of new six-conduit duct bank would be used for the Project. Subtransmission vaults would be approximately 11 feet wide, 11 feet deep, and 21 feet long. Subtransmission six-conduit concrete-encased duct banks would be approximately 2 feet wide by 2 feet high and would be placed in a 5-foot deep trench to allow for a minimum of 36 inches of cover.

SOURCE: PEA Table 3-2 (SCE, 2015)

2.5.3 Distribution Getaway Duct Bank Systems

The Project would include the construction of six distribution getaway duct bank systems. These duct bank systems would extend from the power cable trench within the Circle City Substation to Leeson Lane, where they would be capped. Each duct bank system also would have two vaults installed within the substation property line. Distribution vaults would be approximately 18 feet long, 7 feet wide, and 8 feet deep. The distances of the proposed getaway duct bank systems from the power cable trench at the substation to Leeson Lane are provided in **Table 2-2**, *Distribution Getaway Distances*.

TABLE 2-2
DISTRIBUTION GETAWAY DISTANCES

Distribution Getaway No.	Distance from Trench to Leeson Lane (feet)
1	970
2	950
3	930
4	960
5	980
6	1,000

Distribution circuits would be placed in an underground conduit system. SCE designed the Circle City Substation to accommodate up to sixteen 12 kV distribution circuits. These additional electrical distribution circuits would be constructed from the proposed Circle City Substation to serve electrical demand on an as-needed basis, which is currently not reasonably foreseeable. Therefore, only the six distribution circuit getaways listed in Table 2-2 included in this Project are analyzed in this EIR. These circuits would be constructed and connected to the electrical grid with consideration of the following design parameters:

- the location of the current load growth;
- existing electrical distribution facilities in the area; and
- the location of roads and existing SCE right-of-way (ROW).

SCE has not identified the exact locations and routing of these proposed 12 kV distribution circuit connections; however, SCE anticipates that they would be installed almost exclusively within franchise rights as the distribution circuits would be aligned towards existing distribution facilities that originate from Chase, Jefferson, and Corona substations. For purposes of the analysis in this Draft EIR, the CPUC assumes that four of these would connect to existing 12 kV distribution circuits just northwest of the substation property, similar to as described for Alternative D1 (see Section 3.4.4.1), with two of the distribution circuit connections exiting two of the distribution getaways on the southwest side of the property and would proceed toward the southwest. These circuit connections would turn northwest and proceed along the perimeter of the western property line towards Leeson Lane. At Leeson Lane the two lines would turn southwest and then cross the street to Magnolia Avenue, where they would connect to the Whisper and Palace distribution circuits in an existing vault. The other two distribution circuit connections would exit two of the distribution circuit getaways on the northeast side of the site and would turn northwest and proceed along the perimeter of the eastern property line towards Leeson Lane. At Leeson Lane the two underground lines would transition to overhead where they would be connected to the Wyle and Weirick distribution circuits on an existing pole. Where these new facilities would meet the existing facilities, they would be tied together and then load would be transferred to Circle City Substation (SCE, 2017a). The detailed design of the initial 12 kV distribution circuits would be completed approximately 18 months prior to the beginning of operation date of the Project. These 12 kV distribution circuits cannot be designed at this time due to the uncertainty of where electrical demand relief would be needed and where future load growth would occur precisely, as well as unforeseen changes in the physical and environmental conditions of the surrounding area. In addition, detailed design of the circuit routes requires the most complete and comprehensive details that can be provided by other utilities regarding their existing and planned infrastructure in the area, as the locations of these facilities would impact the ultimate electrical distribution line routes. This information must be provided as close to the operating date as possible to minimize design conflicts and construction delays due to additional changes.

Whether the distribution circuit connections would be installed aboveground or below, the sites and types of supporting infrastructure (including the soil sensitivity, mineral availability, or habitat present in the areas affected by such infrastructure), and other details essential to environmental analysis of impacts associated with these distribution circuits is unknown. Without this information, analysis of potential impacts related to these distribution circuit connections

would be premature and speculative. Consequently, this EIR does not evaluate impacts related to construction, operation, and maintenance of the distribution circuit connections.

2.5.4 Relocation of Existing Distribution Facilities

In order to accommodate the proposed 66 kV subtransmission line facilities that would be associated with the Pedley Source Lines and the Mira Loma-Jefferson Subtransmission line, some of the existing 33 kV, 12 kV, and 4 kV distribution facilities would need to be modified as described below.

2.5.4.1 Pedley Source Lines

Location 1: Approximately eight distribution poles would be removed from the intersection of East 3rd Street and Grand Boulevard in the City of Corona, heading easterly along East 3rd Street. Existing 33 kV and 12 kV distribution facilities would be transferred to new subtransmission facilities. The existing 4 kV distribution circuit would be removed along East 3rd Street. The remaining portion of the 4 kV distribution line on Arroyo Avenue and Quarry Street would be tied into the existing 12 kV distribution line along East 3rd Street. This would comprise the extension of existing 12 kV distribution lines in three locations for a total of approximately 1,540 feet and replacement of 15 wood distribution poles with new wood poles.

Location 2: One distribution pole would be removed at the end of Quarry Street, east of the Temescal Wash flood control channel. Existing distribution facilities would be transferred to a new proposed ~~TSP~~ distribution structure (i.e., wood or LWS pole). In addition, an existing underground distribution duct bank would be extended approximately 100 feet to the new ~~TSP~~ distribution structure (i.e., wood or LWS pole).

Location 3: Approximately three distribution poles would be removed from the southeast corner of Magnolia Avenue and Leeson Lane, heading easterly along Leeson Lane. Existing distribution facilities would be transferred to the new subtransmission facilities.

Location 4: Just outside of the proposed Circle City Substation and within Leeson Lane, a new distribution vault, measuring approximately 7 feet wide, 18 feet long, and 8 feet deep, would be installed with approximately 80 feet of duct bank to connect to existing underground distribution facilities.

2.5.4.2 Mira Loma-Jefferson 66 kV Subtransmission Line

Location 1: On Hellman Avenue, starting at Schleisman Road to a point immediately south of Outback Way, the distribution facilities currently located on the existing subtransmission line would be lowered to accommodate the second subtransmission circuit.

Location 2: Approximately 11 distribution poles would be removed along Hellman Avenue from about 470 feet south of Outback Way to Chino Corona Road. Existing distribution facilities would be transferred to the new subtransmission facilities.

Location 3: Approximately 54 subtransmission poles with 12 kV distribution underbuild (i.e., lower voltage distribution lines under the subtransmission lines) would be removed along Hellman Avenue from Chino Corona Road to River Road, along River Road from Hellman to Baron Road, and Baron Road between the western part of River Road to the southern part of River Road. Existing distribution facilities would be transferred to new subtransmission facilities; one additional 12 kV distribution pole would be installed for the existing capacitor bank.

Location 4: Approximately 12 wood subtransmission poles with 12 kV distribution underbuild would be removed along River Road from just south of the Santa Ana River to Corydon Avenue. Existing distribution facilities would be transferred to new subtransmission facilities.

Location 5: Along River Road from Corydon Avenue to North Cota Road, approximately 62 wood subtransmission poles with 33 kV and 12 kV distribution underbuild would be replaced with new poles. To accommodate the proposed Mira Loma-Jefferson 66 kV Subtransmission Line, the 33 kV distribution facilities would be placed in a new underground conduit system within River Road, and the 12 kV distribution facilities would be transferred to the new poles. The new underground facilities would consist of 13 distribution vaults measuring approximately 7 feet wide, 18 feet long, and 8 feet deep and would be installed with approximately 10,050 feet of duct bank to connect to existing overhead distribution facilities.

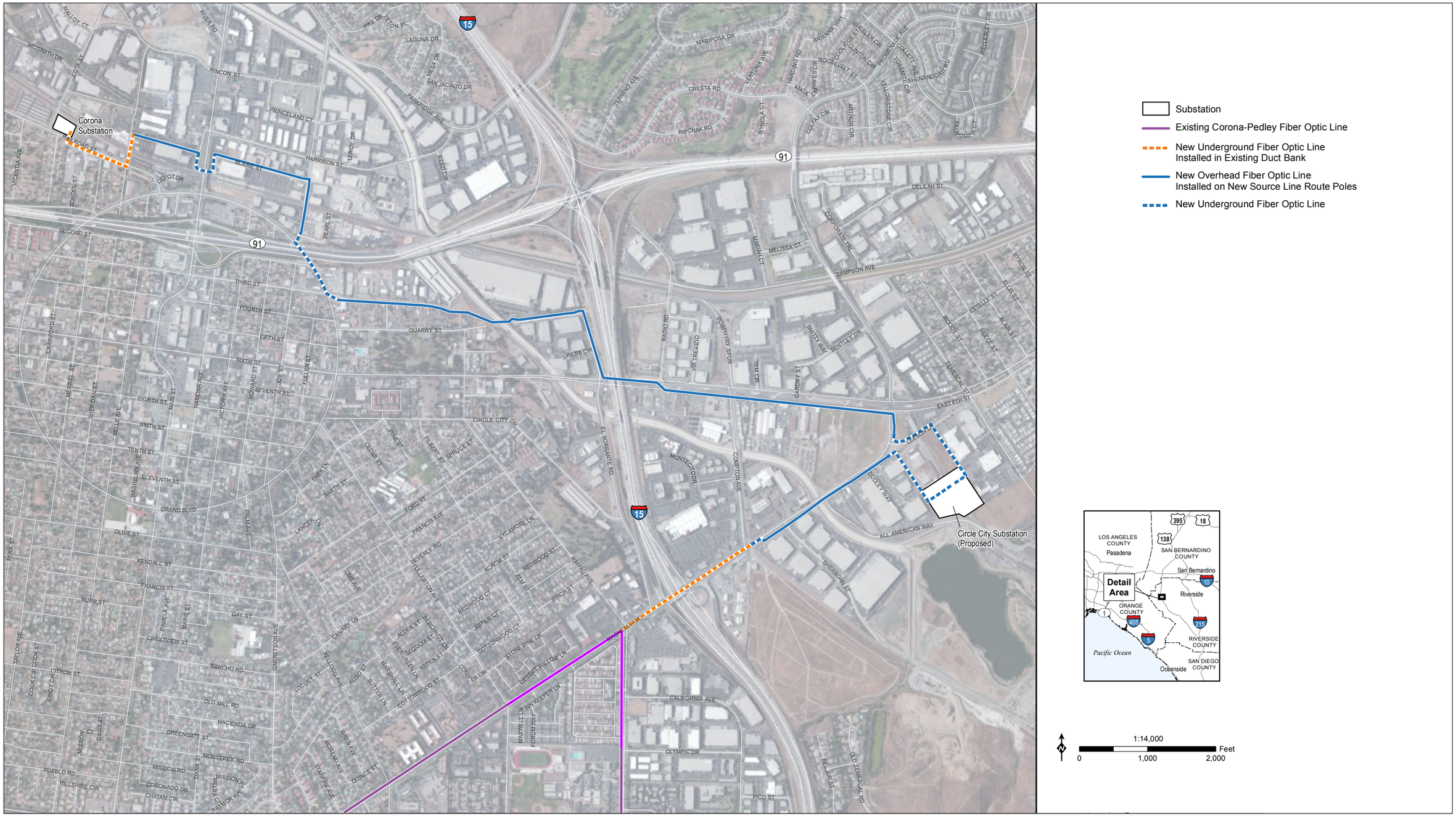
2.5.5 Telecommunications Facilities

Electrical equipment at the proposed Circle City Substation would be monitored through SCE's existing telecommunications system. Telecommunications infrastructure would be added to connect the Circle City Substation to SCE's telecommunications system and would provide supervisory control and data acquisition, protective relaying, data transmission, and telephone services for the substation and associated facilities.

The Circle City Substation would include a MEER (see Section 2.5.1.6, *Mechanical and Electrical Equipment Room*), which would contain telecommunications equipment, such as light wave optic equipment, channel bank equipment, and equipment to provide voice, data, and protection circuits. Additional light wave and channel bank equipment would be installed at the Mira Loma, Pedley, Corona, Chase, and Jefferson substations to provide protection circuits. This additional equipment would be installed within the existing substation MEERs; therefore, no additional ground disturbance would be associated with the proposed telecommunications work.

The new telecommunications infrastructure would include additions and modifications to the existing system. One new fiber optic cable would connect the proposed Circle City Substation to the existing Corona Substation and one new fiber optic route would connect the substation to the existing Corona-Pedley fiber optic cable. The proposed fiber optic routes are shown in **Figure 2-8**, *Proposed Telecommunications Routes*, and are described as follows.

The fiber optic cable route that would connect to Corona and Circle City substations would begin inside the MEER at the Circle City Substation. Inside the substation, the cable would be installed in a new underground duct bank system that would head north toward Leeson Lane, continue west on Leeson Lane for approximately 650 feet to Magnolia Avenue, then continue north on



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-8
Proposed Telecommunication Routes

This page intentionally left blank

Magnolia Avenue for approximately 200 feet to a proposed subtransmission LWS pole. One new manhole would be located near the proposed LWS riser pole. Typical manhole dimensions are approximately 4 feet long, 4 feet wide, and 6 feet deep. The fiber optic cable then would convert to overhead at the proposed subtransmission LWS riser pole located along the proposed Pedley Source Lines. In an overhead position, the fiber optic cable would continue to be installed on the proposed Pedley Source Lines poles for approximately 200 feet to 6th Street, then would head west on 6th Street for approximately 4,300 feet, turn north on El Sobrante Road and continue for approximately 1,000 feet, and turn west along Quarry Street and continue for approximately 1,300 feet to Temescal Channel, where the line would turn northwest for approximately 700 feet.

The fiber optic cable then would head west on the Pedley Source Lines poles on East 3rd Street for approximately 1,600 feet to Grand Boulevard, where the fiber optic cable would convert to underground. The fiber optic cable then would proceed northwest along Grand Boulevard for approximately 1,500 feet to Joy Street, following the underground segment of the Pedley Source Lines. To accommodate this underground segment, two manholes would be installed on Grand Boulevard. At Joy Street, the fiber optic cable would convert to overhead at the proposed LWS pole that would be associated with the ~~Paley~~ Pedley Lines. In an overhead position, the fiber optic cable would continue north on Joy Street for approximately 600 feet along proposed the Pedley Source Lines Source Line Route to Blaine Street. The fiber optic cable would continue west on Blaine Street for approximately 1,400 feet to Main Street, where the fiber optic cable would again convert to underground. The fiber optic cable would then proceed underground for approximately 1,200 feet and two manholes would be installed in this underground segment. The fiber optic cable would then convert to overhead and continue along the Source Line Route for approximately 800 feet to Sheridan Street, where the cable would convert to underground. Approximately 200 feet of new conduit and one manhole would be required to connect to an existing conduit and continue south on Sheridan Street for approximately 500 feet to Railroad Street, then west on Railroad Street approximately 1,000 feet, then north for approximately 100 feet to Corona Substation. The entire route would be approximately 3.2 miles long.

The fiber optic cable that would connect Circle City Substation to the existing Corona-Pedley fiber optic cable would begin inside the new MEER at the proposed Circle City Substation. Inside the substation, the cable would be placed in a new underground duct bank system that would head north toward Leeson Lane, then continue southwest on Leeson Lane approximately 150 feet to a proposed LWS riser pole. There would be one new manhole located near the proposed LWS pole. The fiber optic cable would then convert to overhead at the proposed LWS pole located along the Databank Source Lines. In an overhead position, the fiber optic cable would then continue for approximately 2,100 feet on the Databank Source Lines poles to Sherborn Street, where the fiber optic cable would convert to underground. The fiber optic cable would then proceed southwest in new underground conduit along Magnolia Avenue for approximately 200 feet to an existing underground vault, then continue southwest along Magnolia Avenue in existing underground conduit for approximately 2,500 feet to Rimpau Avenue. The entire route would be approximately 0.9 mile long.

2.6 Construction

2.6.1 Access Roads

Access for construction and ongoing maintenance of the proposed subtransmission lines would be accomplished by utilizing a network of existing and proposed temporary and permanent roads within existing SCE ROW, public ROW, and public and private lands. Property owner approval would be obtained prior to construction activities for temporary access to areas outside of SCE's ROW. The existing network of access roads along the Project routes are a combination of paved and unpaved surfaces, which include dirt, gravel base, asphalt concrete, and cement concrete. During construction, the Project would utilize, to the maximum extent practicable, existing public roads and existing subtransmission and transmission line access roads. Rehabilitation and improvements to existing roads and construction of temporary and permanent roads may be required to facilitate construction access; in most cases transmission access roads used for the Project would comprise a network of dirt roads accessed from new and existing paved public and private roads.

Typical construction activities associated with the rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, over-excavation, and re-compacting of soils to remove potholes, ruts, and other road surface irregularities in order to provide a smooth, dense riding surface capable of supporting heavy construction and maintenance equipment. Rehabilitated roads may require additional improvements, such as protection for underground utilities, widening existing road widths, accommodating site drainages, installing/replacing access gates, and installing paved driveway approaches for ingress/egress between paved and unpaved roads. Typical activities associated with the construction of new temporary and permanent access roads would be similar for construction on flat terrain. For existing rolling terrain with an approximately 5 to 12 percent grade, construction activities would generally include rehabilitation and additional road improvement activities, and may require cut and fill slopes, benched grading, drainage and erosion control improvements, and slope stability improvements.

New roads typically would have circular turnaround areas near the structure locations that would be approximately 95 feet in diameter. Generally, temporary and permanent dirt access roads would be at least 14 feet wide with 2 feet of shoulder on each side. Along curved sections of such roads the road width would be increased to up to 22 feet. Access road gradients would be leveled so that sustained grades generally would not exceed 12 percent.

Proposed construction access roads, including existing access roads to be improved, new access roads, and temporary access roads, are shown in Figures 2-12 through 2-21.

2.6.2 Staging Yards and Work Areas

Construction of the Project would require the establishment of up to seven temporary staging yards. Staging yards would be used as a reporting location for workers, vehicle and equipment parking, and material storage. These areas also may have construction trailers for supervisory and clerical personnel. Staging areas would be lit as needed for safety and security. Activities at staging yards would also include maintenance and refueling of construction equipment. All

refueling and storage of fuels would be in accordance with the Storm Water Pollution Prevention Plan (SWPPP) (see Section 2.6.12, *Storm Water Pollution Prevention Plan*).

SCE would use one or more of the locations listed in **Table 2-3**, *Potential Staging Yards*, and depicted in **Figure 2-9**, *Potential Staging Yard Locations*, as the staging yard(s) for the Project. Construction staging yard areas first would be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Sites would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area would be compacted to at least 90 percent relative density, and would be capable of supporting heavy vehicular traffic. Preparation of the staging yard would include the installation of temporary perimeter fencing and, depending on existing ground conditions at the site, the application of gravel or crushed rock. Any land that may be disturbed at the staging yards would be restored to near pre-construction conditions or to the landowner's requirements following the completion of construction.

TABLE 2-3
POTENTIAL STAGING YARDS

Staging Yard Number	Location	Condition	Approximate Size (acres)
1	Circle City Substation	Graded Property	–up to 8
2	Mira Loma Substation	Previously Disturbed	3
3	Hamner Avenue	Vacant Field	3
4	Hellman Avenue	Vacant Field	5
5	South Temescal Street	Vacant Field	5
6	Ontario Service Center	Previously Disturbed	1
7	Jefferson Substation	Previously Disturbed	0.5

SOURCE: PEA Table 3-3 (SCE, 2015)

A temporary power source would be needed at all yards. The source of this power would be determined based on the type of equipment/facilities being used at the staging yards. If existing distribution facilities are available, a temporary service and meter would be used for electrical power at the yards. A portable generator may be used intermittently for electrical power tools or equipment at one or more of the staging yards.

Materials commonly stored at the substation construction staging yard would include, but are not limited to: portable sanitation facilities; electrical equipment, such as circuit breakers, disconnect switches, lightning arresters, transformers, vacuum switches, steel beams, rebar, foundation cages, conduit, insulators, conductor, and cable reels; pull boxes; and line hardware. Portable sanitation facilities would be maintained by an outside service company; no power, sewer, or water service would be needed in connection with these portable facilities. Materials commonly stored at the subtransmission, and/or telecommunications construction staging yards would include, but not be limited to: construction trailers, construction equipment, portable sanitation facilities, steel bundles, steel/wood poles, conductor reels, overhead ground wire or overhead optical ground wire (OPGW) reels, hardware, insulators, cross arms, signage, consumables, such as fuel and filler compound,

waste materials for salvaging, recycling, or disposal, and best management practice (BMP) materials, such as straw wattles, gravel, and silt fences. Construction materials generally would be delivered by truck to the designated staging yards, with some materials being delivered directly to the temporary subtransmission line construction staging and laydown areas as needed.

There would also be numerous Project work areas along the proposed subtransmission, distribution, and telecommunication line routes. Subtransmission, distribution, and telecommunication line work areas would serve as temporary work areas for the crews and as sites where Project-related equipment and/or materials would be placed at or near each structure location within SCE ROW or franchise. In some areas (e.g., for installation of subtransmission support structures) establishment of a temporary crane pad may be necessary. The crane pad would occupy an area of approximately 50 feet by 50 feet and would be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pad may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation.

Table 2-4, *Estimated Temporary and Permanent Land Disturbance*, identifies the approximate land disturbance that would be associated with the Project, including all construction staging yard areas, and other proposed subtransmission, distribution, and telecommunication line construction work areas.

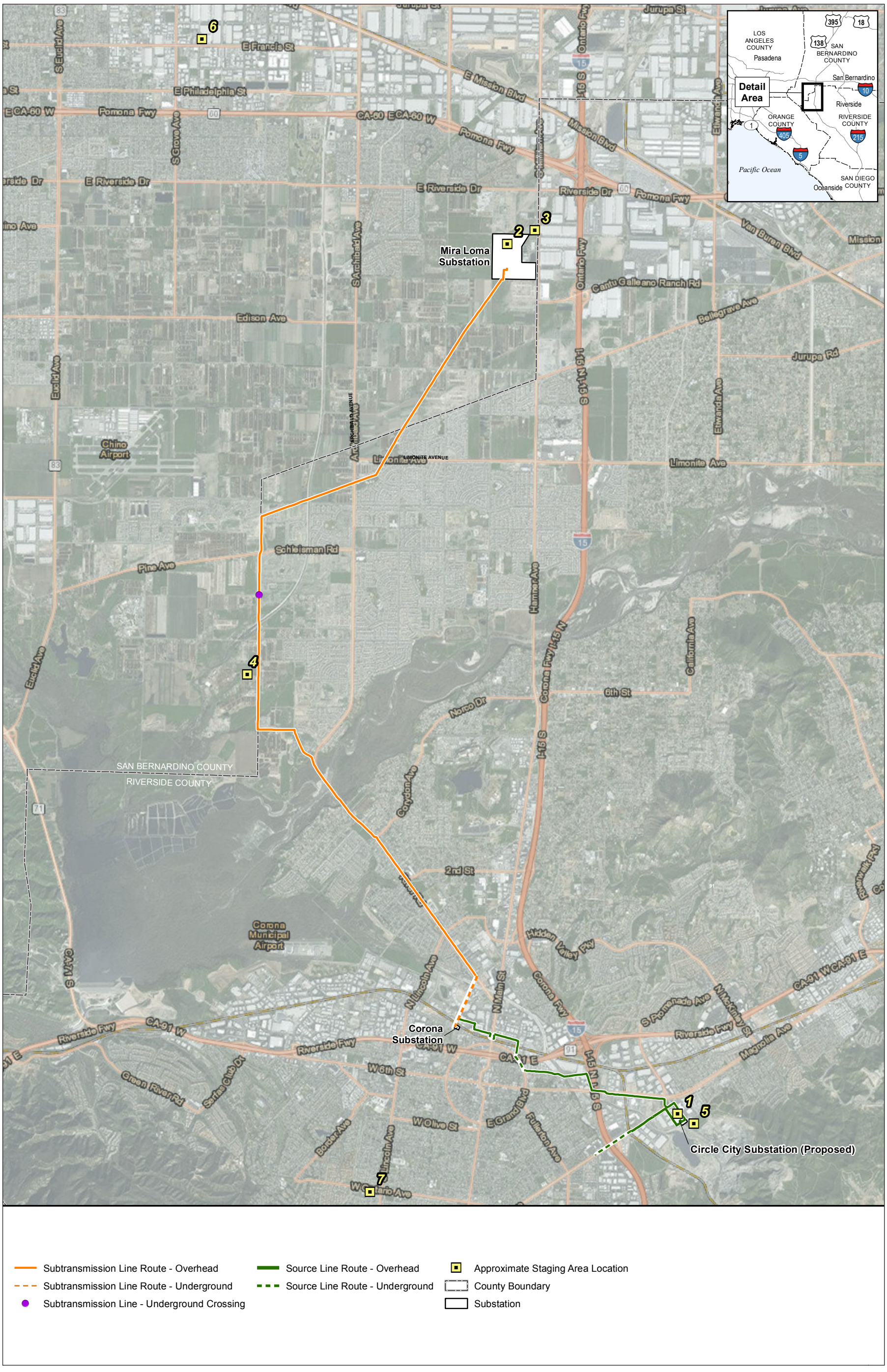
2.6.3 Vegetation Clearance

When needed, brush and ground vegetation would be removed via hand clearance using power brush cutters and, as required, by mechanical equipment with a grading blade. To ensure that proper line clearances are consistent with CPUC GO 95 and GO 128, tree trimming may be required. Tree trimming activities typically require power and hand tools such as chain saws, pole pruners, and hand saws. Debris would be mulched and spread on site or it would be removed to a permitted disposal location.

2.6.4 Circle City Substation Construction

2.6.4.1 Grading and Drainage

The proposed Circle City Substation site is relatively flat. The substation pad would be graded to maintain a minimum of 1-percent slope to drain toward the north. Surface runoff at the site would drain to the north on surface swales through both the eastern and western site corridors, discharging at Leeson Lane. If required by the City of Corona, an approximately 700-foot extension of the existing storm drain system may be constructed to accept site flow onto Leeson Lane. In addition, a standard catch basin would be installed in the Leeson Lane ROW. An alternative to the surface swales would include the installation of an approximately 1,300-foot-long buried drain pipe through the eastern access corridor. A collection basin or headwall would be required in the substation property's southeast corner to direct off-site drainage into the applicable drainage improvements. Prior to construction, SCE would prepare final engineering drawings for grading and drainage, and submit these drawings to the City of Corona to obtain a ministerial grading permit if required. SCE would include a detention or retention basin just north and/or south of the substation perimeter block wall if needed.



SOURCE: Insignia, 2015; SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-9
Potential Staging Yard Locations

This page intentionally left blank

TABLE 2-4
ESTIMATED TEMPORARY AND PERMANENT LAND DISTURBANCE

Facility or Activity	Quantity	Approximate Area Disturbed per Facility or Activity	Total Approximate Area to be Disturbed During Construction (acres)	Approximate Temporary Disturbance (acres)	Approximate Permanent Disturbance (acres)
Circle City Substation					
Street encroachment (sewer, water, and driveway)	1	8,700 square feet	0.2	0.2	0.0
Street encroachment (possible storm drain extension)	1	17,800 square feet	0.4	0.4	0.0
Circle City Substation and Laydown Yard	1	849,420 square feet	19.5	8.4	11.1
Subtotal: Circle City Substation			**20.1**	**9.0**	**11.1**
Source Line Routes					
Guard structures	30	50 feet by 75 feet	2.6	2.6	0.0
Remove existing wood pole (1)	2	100 feet by 75 feet	0.3	0.3	0.0
Remove existing wood poles and replace with LWS poles (1, 2, 3)	8	200 feet by 100 feet	3.7	3.7	0.0
Construct new wood poles (2, 12)	2	200 feet by 100 feet	0.9	0.9	< 0.1
Construct new LWS poles (2, 12)	86	200 feet by 100 feet	39.5	38.6	0.9
Construct new TSPs (2, 13)	25	200 feet by 100 feet	11.5	10.0	1.5
Construct new TSPs (4)	5	200 feet by 100 feet	2.3	2.3	0.0
Conductor stringing set-up areas – puller/tensioner (5)	29	600 feet by 100 feet	38.5	38.5	0.0
Install new underground vaults (6, 15)	7	175 feet by 100 feet	2.8	2.8	< 0.1
Install new underground duct banks (6, 7, 17)	4,490 linear feet	Linear feet by 15 feet wide	1.6	1.6	0.0
Horizontal bore pit areas	2	150 feet by 150 feet	1.0	1.0	0.0
Access and spur roads (8, 9)	0.4	Linear miles by 18 feet wide	1.0	0.4	0.6
Material and equipment staging area (near Circle City Substation) (11)	1	5 acres	5.0	5.0	0.0
Subtotal: Source Lines			**110.7**	**107.7**	**3.0**
Mira Loma-Jefferson 66 kV Subtransmission Line					
Guard structures	60	50 feet by 75 feet	5.2	5.2	0.0
Remove existing wood pole (1)	2	100 feet by 75 feet	0.3	0.3	0.0
Remove existing wood pole and replace with LWS pole (1, 2, 3)	141	200 feet by 100 feet	64.7	64.7	0.0
Remove existing LWS pole and replace with LWS pole (1, 2, 3)	83	200 feet by 100 feet	38.1	38.1	0.0

TABLE 2-4 (CONTINUED)
ESTIMATED TEMPORARY AND PERMANENT LAND DISTURBANCE

Facility or Activity	Quantity	Approximate Area Disturbed per Facility or Activity	Total Approximate Area to be Disturbed During Construction (acres)	Approximate Temporary Disturbance (acres)	Approximate Permanent Disturbance (acres)
Mira Loma-Jefferson 66 kV Subtransmission Line (cont.)					
Construct new LWS pole (2, 12)	18	200 feet by 100 feet	8.3	8.1	0.2
Remove existing LWS pole and replace with TSP (1, 2, 13)	3	200 feet by 100 feet	1.4	1.2	0.2
Construct new TSP (2, 13)	6	200 feet by 100 feet	2.8	2.4	0.4
Remove existing TSP and replace with TSP (1, 2, 13)	1	200 feet by 100 feet	0.5	0.5	0.0
Remove existing TSP and replace with LWS pole (1, 2, 3)	1	200 feet by 100 feet	0.5	0.5	0.0
Remove existing wood pole and replace with TSP (1, 2, 13)	10	200 feet by 100 feet	4.6	4.1	0.5
Remove existing wood H-Frame and replace with LWS pole (1, 2, 3)	1	200 feet by 100 feet	0.5	0.5	0.0
Remove existing H-frame hybrid and replace with H-frame hybrid (1, 2, 3)	2	200 feet by 100 feet	0.9	0.9	0.0
Conductor stringing set-up area – puller/tensioner (5)	28	600 feet by 100 feet	39.9	39.9	0.0
Install new underground vault (6, 15)	1	175 feet by 100 feet	0.4	0.4	< 0.1
Install new underground duct bank (6, 7, 16)	420 linear feet	Linear feet by 15 feet wide	0.1	0.1	0.0
Install new cable into existing vaults and duct bank (6, 7)	4	175 feet by 100 feet	1.6	1.6	0.0
Horizontal bore pit areas	2	150 feet by 150 feet	1.0	1.0	0.0
Access and spur roads (8, 9)	5.8	Linear miles by 18 feet wide	12.6	0	12.6
Construction areas for access roads (10)	6.1	Linear miles by 10-foot-wide minimum buffer on each side	14.8	14.8	0.0
Material and equipment staging area (Hellman Avenue) (11)	1	5 acres	5.0	5.0	0.0
Mira Loma Vacant Lot – material and equipment staging area (11)	1	3.0 acres	3.0	3.0	0.0
Jefferson Substation - material and equipment staging area (11)	1	0.5 acre	0.5	0.5	0.0
Mira Loma Substation – material and equipment staging area (11)	1	3 acres	3.0	3.0	0.0
Subtotal Mira Loma-Jefferson 66 kV Subtransmission Line			**208.7**	**190.3**	**13.9**

TABLE 2-4 (CONTINUED)
ESTIMATED TEMPORARY AND PERMANENT LAND DISTURBANCE

Facility or Activity	Quantity	Approximate Area Disturbed per Facility or Activity	Total Approximate Area to be Disturbed During Construction (acres)	Approximate Temporary Disturbance (acres)	Approximate Permanent Disturbance (acres)
Telecommunications					
Underground conduit installation	1,200 feet	Linear feet by 24 feet	0.7	0.7	0.0
Manhole installation	7	40 feet by 50 feet	0.3	0.3	0.0
Subtotal: Telecommunications			**1.0**	**1.0**	**0.0**
Distribution					
Install new underground vault	29	40 feet by 51 feet	1.4	1.4	< 0.1
Install new underground duct bank	15,840 feet	Linear feet by 32 feet	11.6	11.6	0.0
Remove existing pole	4	100 feet by 200 feet	1.8	1.8	0.0
Remove existing wood pole and replace with wood pole (12)	15	100 feet by 200 feet	6.9	6.9	0.0
Install wood pole (12)	6	100 feet by 200 feet	2.8	2.8	< 0.1
Subtotal: Distribution			**24.5**	**24.5**	**0.0**
Total			**365.0**	**332.5**	**28.0**

NOTES:

[1] Includes the removal of existing conductor, teardown of existing structure, and removal of foundation (applicable to TSPs only) 2 feet below ground surface.

[2] Includes structure assembly and erection, conductor installation, and foundation installation (applicable to TSPs only); area would be restored after construction. A portion of the ROW beneath and within 25 feet of the structure would remain permanently disturbed and cleared of vegetation.

[3] The structure would be replaced with the same or similar size/type of structure; therefore, the permanent disturbance is negligible or cancelled out.

[4] Includes structure assembly and erection, conductor installation, and foundation installation (applicable to TSPs only) all located on Circle City Substation; property would be restored to a condition that meets the needs of the operation and maintenance of the Project. Permanent disturbance amounts are accounted for within the Circle City Substation amounts.

[5] Based on 6,400-foot conductor reel lengths, the number of circuits, and the route design.

[6] Includes all underground civil construction activities associated with vault, duct bank, and cable installations; area would be restored and/or repaved after construction.

[7] Based on 1,650-foot conductor reel lengths, the number of circuits, and the route design.

[8] Based on the length of road in "miles x road width," which varies from 14 to 22 feet, curve-widening, intersections, and miscellaneous transitional areas.

[9] May include, but is not limited to, areas for slope cuts/fills, and drainages outside of the 18-foot access road width.

[10] Temporary disturbance for access road construction areas include a minimum of 10 feet of buffer on each side of the access roads to accommodate for best management practices (BMPs) and/or potential environmental resource protection devices during construction.

[11] The disturbed acreage for the material storage yards would be restored upon completion of the Project.

[12] Wood and LWS Pole Information: average depth 11 feet and average diameter 4 feet, earth removed per hole = 5.12 cubic yards, average surface area = 12.56 square feet per pole. Portion of ROW within 10 feet of a Light Weight Steel or Wood Pole, are to remain cleared of vegetation and would be permanently disturbed (approximately 0.01 acre per LWS and Wood Pole).

[13] TSP Foundation Information: average depth 30 feet and average diameter 8 feet, earth removed per foundation = 55.82 cubic yards, average surface area = 50.24 square feet per TSP. Portion of ROW within 25 feet of a TSP are to remain cleared of vegetation and would be permanently disturbed (approximately 0.06 acre per TSP).

[14] H-frame Hybrid: depth 18 feet and 5-foot-diameter, quantity two per H-frame, earth removed for footing = 18.17 cubic yards each, 36.34 cubic yards total; surface area = 19.63 square feet each, 39.26 square feet total. Portion of ROW within 25 feet of a Hybrid Pole are to remain cleared of vegetation and would be permanently disturbed (approximately 0.06 acre per Hybrid pole)

[15] Underground Vault Excavation Information: average 12 feet deep, 12 feet wide, and 24 feet long = 128 cubic yards, average surface area = 288 square feet per vault.

[16] Underground Duct Bank Trenching Information for Mira Loma-Jefferson and Source Line Routes: average 5 feet deep, 2 feet wide, and 420 feet long = 155.55 cubic yards, average surface area = 840 square feet.

[17] Underground Duct Bank Trenching Information Source Line: average 5 feet deep, 2 feet wide, and 4,490 feet long = 1,662.96 cubic yards, average surface area = 8,980 square feet.

SOURCE: PEA Table 3-4 (SCE, 2015)

Because the anticipated volume of aboveground storage of oil for use at the site would be in excess of 1,320 gallons, a Spill Prevention Control and Countermeasures (SPCC) Plan would be required in accordance with Title 40 Sections 112.1-112.7 of the Code of Federal Regulations (CFR). Typical SPCC secondary containment features include curbs designed and installed to contain spills, should they occur. These features would be part of SCE's final engineering design for the Project.

2.6.4.2 Ground Surface Improvements

The enclosed substation surface would be covered with permeable material (e.g., crushed rock) in areas where no paving or structures would be placed. **Table 2-5**, *Substation Ground Surface Improvement Materials and Volumes*, lists the approximate square footage and volumes of materials to be used.

TABLE 2-5
SUBSTATION GROUND SURFACE IMPROVEMENT MATERIALS AND VOLUMES

Element	Material	Approximate Surface Area (square feet)	Approximate Volume (cubic yards)
Site Grading, Cut	Soil	267,568	9,000
Site Grading, Fill	Soil	327,027	12,500
Import	Soil	327,027	3,500
Waste Removal	Soil	131,290	22,400
	Asphalt Concrete[1]	39,590	490
Clearing and Grubbing	Vegetation[2]	160,000	500
Drainage Swales	Concrete	17,065	316
Substation Equipment Foundations	Concrete	3,050	250
Cable Trenches	Concrete	6,500	240
Block Wall Foundation	Concrete	1,615 feet long	300
Chain-link Fence Around Property[3]	Metal	16,000 (long by 8 feet tall)	2,000 feet in length
Internal Driveway	Asphalt Concrete Class II Aggregate Base	11,930 11,930	150 300
External Driveway	Asphalt Concrete Class II Aggregate Base	23,600 23,600	290 580
Secondary Access Road	Crushed Rock	20,150	250
Substation Rock Surfacing	Rock, per SCE standard, 4-inch depth	162,200	2,005
Distribution Duct Banks/ Vaults	Concrete	13,500	750
66 kV Bus Enclosure	Asphalt Concrete[1]	4,295	80

NOTES:
1 The type of asphalt concrete to be removed and/or installed is asphalt concrete or Portland Cement concrete
2 A 1-inch thickness is assumed for vegetation that would need to be cleared.
3 The chain-link fence around the property would be installed in areas that are not already fenced.

SOURCE: PEA Table 3-1 (SCE, 2015)

2.6.4.3 Above-Grade Construction

Above-grade installation of substation facilities such as buses, capacitor banks, switchracks, disconnect switches, circuit breakers, transformers, steel support structures, perimeter chain-link fence, restroom facilities, and the MEER would commence after the below-grade structures are in place. The transformers, and potentially other substation facilities, would be delivered by heavy-transport vehicles. If necessary, traffic control measures would be implemented consistent with those published in the *California Joint Utility Traffic Control Manual* (CIUCC, 2015).

2.6.4.4 Temporary Power during Construction

Prior to construction, SCE would select a nearby 12 kV distribution circuit to serve as the temporary power source during construction activities at the Circle City Substation site. The wood poles installed for temporary power would be approximately 20 feet tall and would be placed approximately 20 feet apart. It is estimated that 8 to 10 wood poles would extend from a nearby 12 kV distribution circuit to the substation construction site. Wood poles would be installed using a work truck with an auger and placed at a depth of approximately 4 feet. Conductor would be strung from the nearby 12 kV distribution circuit and attached to the wood poles. Temporary power would be in place for the duration of construction at the substation site and the associated poles and related equipment would be removed once construction activities at the site would be completed. Small electrical generators (i.e., less than 49 horsepower) may be used intermittently to power small hand tools during construction.

2.6.5 Modifications at Other Substations

In order to accommodate the Mira Loma-Jefferson, Circle City-Corona No. 1, Circle City-Corona No. 2, Mira Loma-Circle City-Pedley, and Chase-Circle City-Databank 66 kV subtransmission line connections at Mira Loma, Jefferson, Corona, Pedley, Chase, and Databank substations, the following work would be conducted:

- Install an existing position of the 66 kV switchrack with one circuit breaker, two horizontal-mounted group-operated disconnect switches, and one transformer at Mira Loma Substation.
- Upgrade the protection scheme as needed at Mira Loma, Jefferson, Corona, Pedley, Chase, and Databank substations. The protection scheme is a protection system designed to detect a particular system condition that is known to cause unusual stress to the power system and to take some type of predetermined action to counteract the observed condition in a controlled manner. The protection scheme for the Project includes the new telecommunications facilitates described in Section 2.5.5.

2.6.6 Subtransmission Line Construction (Above Ground)

2.6.6.1 Removal of Existing Structures

Prior to removal of existing structures, the existing subtransmission lines, distribution lines, and telecommunication lines would be transferred to the new structures, where applicable. The existing conductor would be removed using wire pulling equipment. Upon placement of the wire pulling equipment, the subtransmission conductor would be pulled out with a pulling rope and/or

cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. All subtransmission, distribution, and telecommunication lines that would not be reused by SCE would be removed and delivered to a facility for disposal as described in Section 2.6.13, Site *Cleanup, Dust Control, and Waste Management*.

The existing wood poles, TSPs, LWS poles, and H-frame hybrid poles would be completely removed once the subtransmission, distribution, and telecommunication lines are transferred to the new poles. The removal would consist of the above and belowground portions of the pole, and the holes left from removing the poles would be backfilled with spoils that may be available as a result of the excavation for new poles and using imported fill, as needed. Once the holes are filled, the area would be compacted and smoothed to match the surrounding grade.

2.6.6.2 Pole Installation

Wood Poles

Each wood pole would require a hole to be excavated by using an auger, backhoe, or hand digging. Excavated material would be managed as described in Section 2.6.13, *Site Cleanup, Dust Control, and Waste Management*. The wood poles would be placed in temporary laydown areas at each pole location. While on the ground, the wood poles may be configured (if not pre-configured) with the necessary cross arms, insulators, and wire-stringing hardware before being set in place. The wood poles then would be installed in the holes, typically by a line truck with an attached boom. Wood guy stub pole installation would occur similarly to wood pole installation.

Lightweight Steel Poles

Installation of holes for the LWS poles would be similar to that described for the wood poles. LWS poles consist of separate base and top sections. Depending on the conditions at the time of construction, the top sections may be pre-configured, be configured on the ground, or be configured after pole installation with the necessary cross arms, insulators, and wire-stringing hardware. When the base section is secured, the top section would be installed on top of it. Depending on the terrain and available equipment, the pole sections also could be assembled into a complete structure on the ground prior to setting the poles in place within the holes.

H-Frame Hybrid Poles

Each H-frame hybrid pole would consist of a pre-fabricated concrete base that would require a hole to be excavated by using either an auger or a backhoe. Excavated material would be managed as described in Section 2.6.13, *Site Cleanup, Dust Control, and Waste Management*. The poles would consist of separate base and top sections and may be placed in temporary laydown areas at each pole location. Depending on conditions at the time of construction, configuration of the top LWS sections could occur prior to or after installation similar to LWS poles. Depending on soil conditions, a steel caisson may be set in the hole prior to the concrete base. The pre-fabricated concrete base then would be set inside of the caisson and backfilled. When the base section is secured, the LWS sections would be installed by slipping them onto the concrete base. Typically, a crane and a line truck are used for the installation of hybrid poles. The poles would be set one

section at a time. Once the pole is completely assembled, the sections would be jacked together. The final engineering design would determine whether a granular, slurry or other material would be the appropriate backfill material to fill the annular space around the foundation.

Tubular Steel Poles

Each TSP would require a drilled, poured-in-place, concrete footing that would form the structure foundation. The hole would be drilled using truck or track-mounted excavators. Excavated material would be managed as described in Section 2.6.13, *Site Cleanup, Dust Control, and Waste Management*. Excavation of the foundation footings, steel-reinforced cages would be set, survey positioning would be verified, and concrete would then be poured. Foundations in soft or loose soil, or that extend below the groundwater level, may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole after drilling to prevent the sidewalls from sloughing. Concrete would be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would be collected in a pit adjacent to the foundation or vacuumed into a truck and then pumped out to be reused or discarded at an appropriate off-site disposal facility.

TSPs consist of separate base and top sections. The pole sections would be placed in temporary laydown areas at each pole location. Configuration would be similar to LWS poles and could occur prior to or after installation. A crane would be used to set each steel pole base section on top of the previously prepared foundations. If existing terrain around the TSP location is not suitable to support crane activities, a temporary crane pad would be constructed within the laydown area. When the base section is secured, the top section of the TSP would be set into place onto the base section and the two sections would be slipped or bolted together. The two sections also could be spot-welded together for additional stability. Depending on the terrain and available equipment, the pole sections could be pre-assembled into a complete structure prior to setting the poles.

2.6.6.3 Conductor Stringing

Wire stringing activities would be in accordance with SCE common practices and would be similar to process methods detailed in the IEEE Standard 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*. To ensure the safety of workers and the public, safety devices such as traveling grounds, electrical-shock prevention mat, guard structures, radio-equipped public safety roving vehicles, and linemen would be in place prior to the initiation of wire stringing activities.

Wire stringing includes all activities associated with the installation of the primary conductors onto subtransmission line structures. These activities include the installation of conductor, ground wire, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, and suspension and dead-end hardware assemblies for the entire length of the route.

The following five steps describe typical wire stringing activities:

- **Step 1 – Planning:** Develop a wire stringing plan to determine the sequence of wire pulls and the set-up locations for the wire pulling/tensioning/splicing equipment. Proposed stringing sites are shown in Figures 2-12 through 2-21.

- **Step 2 – Sock Line Threading:** A bucket truck would be used to install a light-weight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull.
- **Step 3 – Pulling:** The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel.
- **Step 4 – Splicing, Sagging, and Dead-Ending:** Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures.
- **Step 5 – Clipping-In:** After the conductor is dead-ended, the conductors would be secured to all tangent structures using a process called "clipping in." ~~Once this is complete, spacers would be attached between the bundled conductors of each phase to keep uniform separation between each conductor.~~

Wire stringing and pull sites may be slightly offset and/or angled to extend outside of the ROW to clear unavoidable obstructions. Also, at deflection points along the subtransmission line routes, wire stringing and pull sites can extend from the pole location a distance as much as three times the pole height, which typically extends beyond the ROW as well.

The puller, tensioner, and splicing set-up locations associated with the Project would be temporary and the sites would be restored to near pre-construction conditions following completion of pulling and splicing activities. The set-up locations require level areas to allow for maneuvering of the equipment. When possible, these locations would be located on existing roads and level areas to minimize the need for grading and cleanup. Approximately 57 set-up locations are proposed (see Table 2-4, *Estimated Temporary and Permanent Land Disturbance*). Figures 2-12 through 2-21 show 46 conductor stringing set-up areas; however, SCE has clarified that 11 of the 57 set-up sites are merged with the 46 mapped set-up areas (SCE, 2017b). The approximate area needed for stringing set-up locations associated with wire installation is variable and depends upon terrain.

Wire pulls are the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 4,000 to 6,000 feet on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull typically is diminished. Generally, pulling locations and equipment set-ups would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Each stringing operation consists of a puller set-up positioned at one end, and a tensioner set-up with a wire reel stand truck positioned at the other end of the wire pull. Pulling and wire tensioning locations may also be utilized for splicing and field snubbing (i.e., anchoring and

dead-end hardware) of the conductors. Temporary splices may be necessary since permanent splices that join the conductor together cannot travel through the rollers. Splicing set-up locations are used to remove temporary pulling splices and install permanent splices once the conductor is strung through the rollers located on each structure. Field snubs would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned behind a dead-end structure.

2.6.6.4 Guard Structures

Guard structures are temporary facilities that would be installed at transportation, flood control, and utility crossings for conductor stringing activities to stop the movement of a conductor, should it momentarily drop below a conventional stringing height. Temporary netting could be required to be installed by the California Highway Patrol, California Department of Transportation, or other jurisdictional agency to protect under-built infrastructure such as highway, railroad, and open channel water crossings. The temporary netting would be installed by pulling safety wire across the infrastructure and attaching it to each of the guard structures on either side of the infrastructure, and then the netting would be attached to the safety wire and extended over and across the structure to be protected. Up to a total of 90 guard structures could be constructed along the proposed route. Guard structures consist of standard wood poles 40 to 70 feet tall. Depending on the overall spacing of the conductors being installed, two to four guard poles would be required on either side of a crossing. The guard structures would be removed after the conductor is secured into place. In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks.

2.6.7 Subtransmission Line Construction (Below Ground)

The following subsections describe the construction activities that would be associated with installing the underground 66 kV subtransmission lines for the Project.

2.6.7.1 Survey

Construction activities would begin with the survey of existing underground utilities along the proposed underground routes. SCE would notify all applicable utilities via Underground Service Alert to locate and mark existing utilities. Underground Service Alert is a non-profit mutual benefit organization that links people that excavate with the owners of underground utilities to avoid damage to existing utilities.

2.6.7.2 Trenching

The Project includes a total of approximately ~~4,980~~ 4,910 feet of new underground 66 kV subtransmission lines and associated transition and support structures. An approximately 20- to 24-inch-wide by 60-inch-deep trench would be required to place the 66 kV subtransmission line underground. This depth is required to meet the minimum 36 inches of cover above the duct bank and may vary to avoid other existing utilities. Trenching would be performed by using the following general steps, including, but not limited to: mark the location and applicable underground utilities, lay out trench line, saw cut asphalt or concrete pavement as necessary, dig to the appropriate depth with a backhoe or similar equipment, and install the new duct bank. Once

the duct bank has been installed, the trench would be backfilled with a sand slurry mix. Approximately 27,161 cubic yards of material would be removed from the trenches. Approximately one-third (896 cubic yards) of excavated materials would be reused as fill for the Project, and the remainder (approximately 26,264 cubic yards) would be disposed of at an off-site disposal facility in accordance with applicable laws. See Table 2-6, *Landfills and Recycling Centers near the Project*, for a list of off-site disposal facilities likely to be used for the Project. Should groundwater be encountered, it would be dispersed at the site or pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

The trench for underground construction would be widened and shored where appropriate to meet California Occupation and Safety Health Administration requirements. Trenching would be staged so that open trench lengths would be limited to the minimum required for installation of duct banks. Where needed, open trench sections would have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access would be arranged with local jurisdictions in advance of construction activities.

2.6.7.3 Horizontal Boring

As discussed above, SCE would use the open-cut trenching technique to install the majority of the underground subtransmission lines. However, an alternate method such as horizontal boring (jack-and-bore) would likely be required to cross the railroad facilities along Cota Street and Magnolia Avenue.

Horizontal boring is a drilling operation that pushes a casing through the earth under a facility or feature being crossed, while simultaneously removing the spoils inside the casing with a rotating auger. Boring operations would begin by excavating large bore pits at the sending and receiving ends of the bore. After establishing the bore pits, the boring equipment would be delivered to the site and then installed into the bore pit at the sending end. Depending on the soil conditions, boring operations may require water to lubricate the auger. The casings would be installed at least 3 to 4 feet below the feature that would be crossed. Once the casing is in place, the construction crew would install the underground duct bank by using spacers to hold the conduits in place and backfill the remaining space with a slurry mix. The casing would be left in place to protect the underground duct bank. A temporary construction area would be required for horizontal boring operations of approximately 150 feet by 150 feet at each bore pit location. Boring and receiving pits would typically measure 20 feet by 40 feet with depths between 10 feet and 20 feet, depending on the facilities or features that would be crossed. SCE would obtain the necessary ministerial permits to conduct this specialized technique and would implement standard best management practices (BMPs) in compliance with the SWPPP SCE would prepare for the Project. Following the duct bank installation, the crew would backfill the bore pits with native materials and cover the duct bank with at least 36 inches of engineered or native fill, as appropriate. Any excess soil material would be hauled off site and disposed of at an approved disposal facility.

2.6.7.4 Duct Bank Installation

As trenching for the underground 66 kV subtransmission line is completed, SCE would begin to install the underground duct bank. Collectively, a duct bank is comprised of cable conduit, spacers, ground wire, and concrete encasement. Duct banks would consist of six ~~or eight 6-~~5-inch-diameter polyvinyl chloride (PVC) conduits fully encased with a minimum of 3 inches of concrete all around. Typical 66 kV subtransmission duct bank installations would accommodate six cables. The Project would utilize six cable conduits pursuant to SCE's current standards for 66 kV underground construction. The majority of the 66 kV duct banks would be installed in a vertically stacked configuration. Each duct bank would be approximately 21 to 27 inches tall and 20 inches wide. Clearances and depths would meet the requirements set forth in Rule 41.4 of CPUC GO 128. For an illustration of a subtransmission line duct bank, refer to **Figure 2-10**, *Typical Subtransmission Duct Bank*.

2.6.7.5 Vault Installation

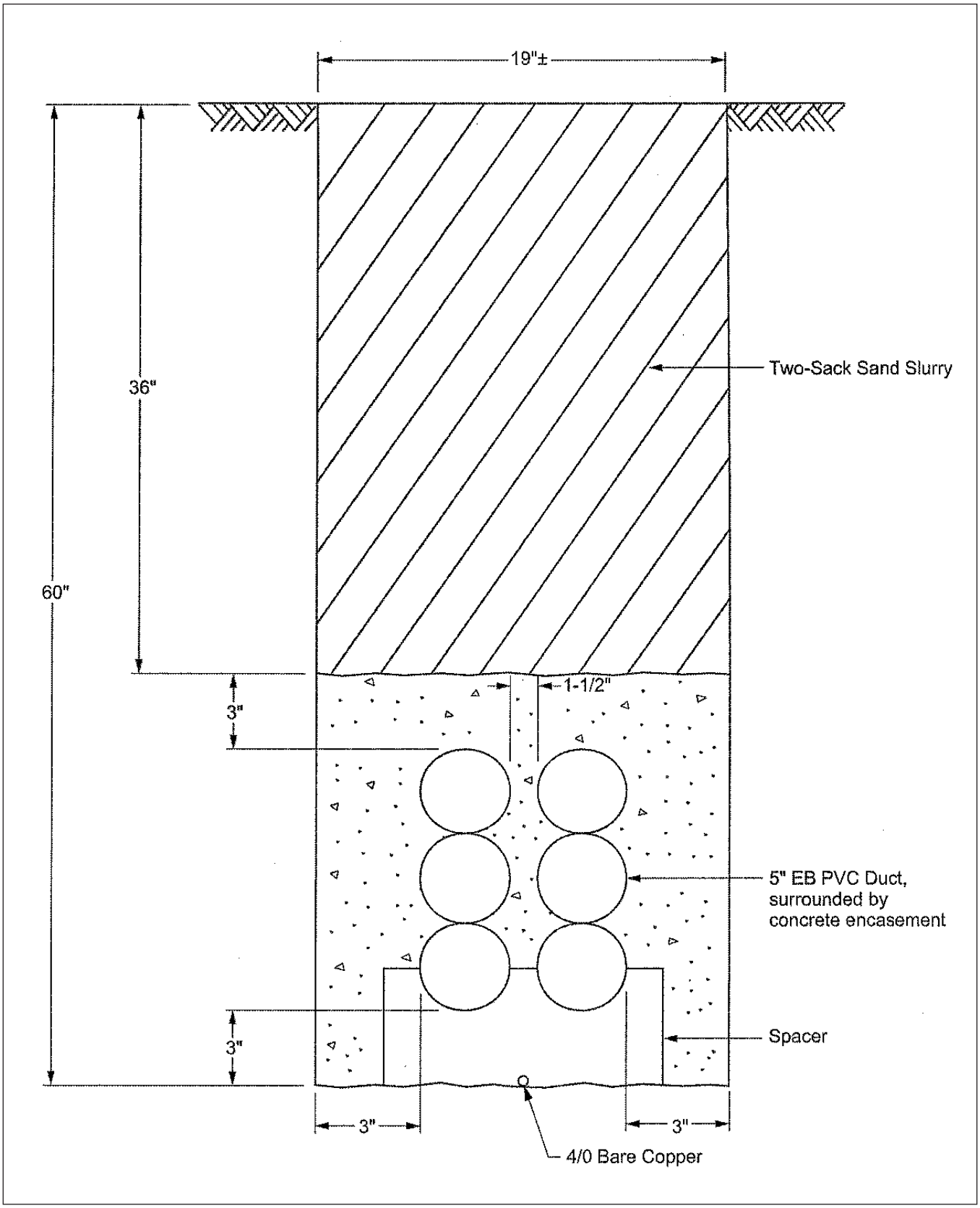
Vaults are below-grade enclosures where the duct banks terminate. The vaults would be constructed out of pre-fabricated, steel-reinforced concrete and be designed to withstand heavy truck traffic loading. The inside dimensions of the vaults would be approximately 10 feet wide, 20 feet long, and 9.5 feet deep. The vaults would be placed approximately ~~300 to 800~~ 50 to 1,500 feet apart along the underground portion of the subtransmission lines.

Initially, the vaults would be used as pulling and feed locations to pull cable through the conduits. After the cable is installed, the vaults would be utilized to splice the cables together. During operation, the vaults would provide access to the underground cables for maintenance, inspections, and repairs.

Installation of each vault would take place over an approximately one-week period, depending on soil and traffic conditions. First, the vault pit would be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base would be placed to cover the entire bottom of the pit, followed by delivery and installation of the vault. Once the vault is set, grade rings and the vault casting would be added and set to match the existing grade. The excavated area would be backfilled with a sand slurry mix to a point just below the top of the vault roof. Excavated materials (if suitable) or imported fill material would be used to backfill the remainder of the excavation and any excess spoils would be disposed of at an appropriate off-site disposal facility. The excavated area would be restored as required. For an illustration of a subtransmission vault, refer to **Figure 2-11**, *Typical Subtransmission Vault*.

2.6.7.6 Cable Pulling, Splicing, Termination

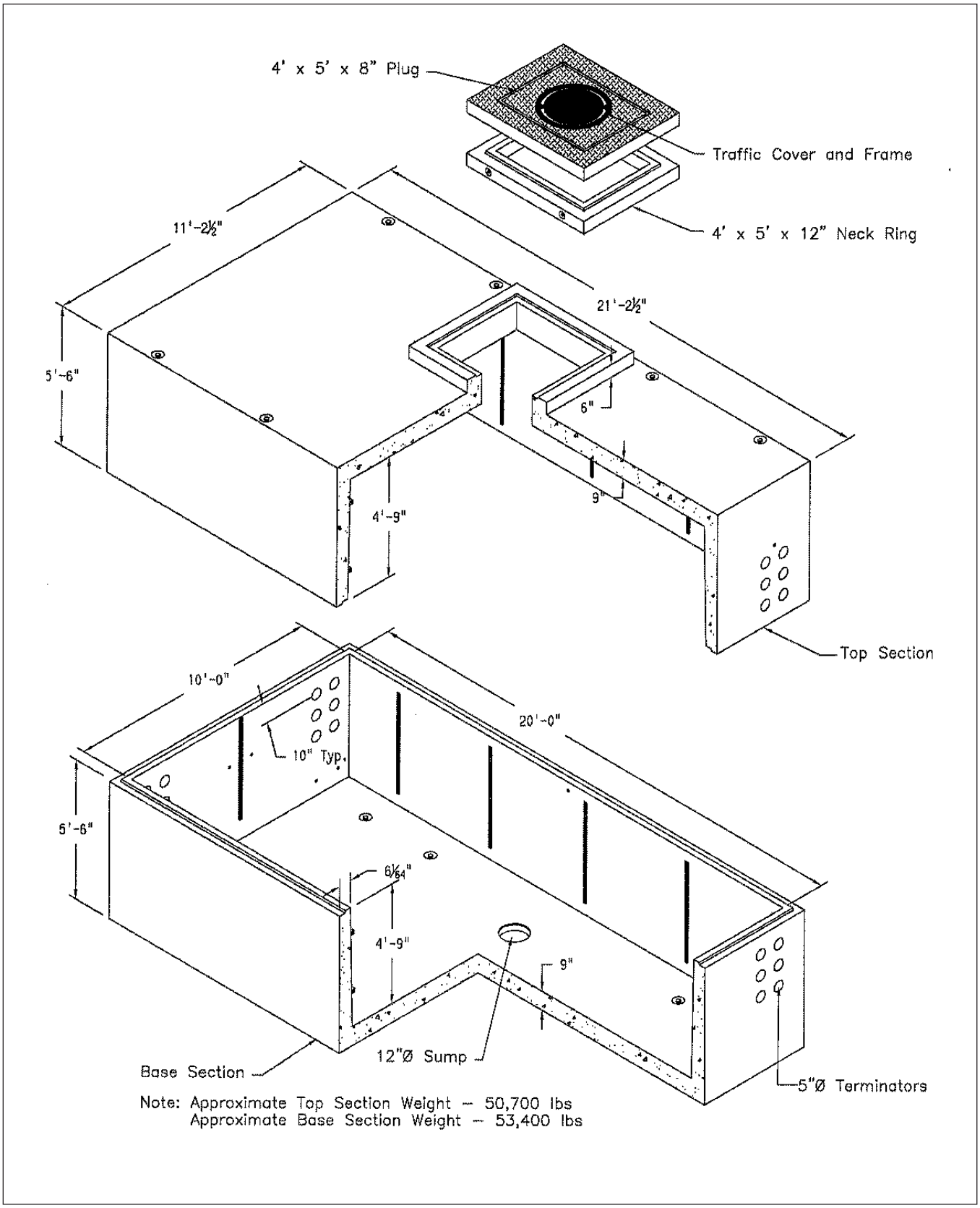
Following vault and duct bank installation, SCE would utilize the new vaults and duct banks, as well as existing vaults and duct banks, to pull the electrical cables through the duct banks, splice the cable segments at each vault, and terminate cables at the transition structures where the subtransmission lines would transition from underground to overhead. To pull the cables through the duct banks, a cable reel would be placed at one end of the conduit segment, and a pulling rig would be placed at the opposite end. The cable from the cable reel would be attached to a rope in the duct bank, and the rope would be linked to the pulling rig, which would pull the rope and the



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-10
Typical Subtransmission Duct Bank



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 2-11
Typical Subtransmission Vault

attached cable through the duct banks. A lubricant would be applied as the cable enters the ducts to decrease friction and facilitate travel through the PVC conduits. The electrical cables for the subtransmission line circuits would be pulled through the individual conduits in the duct bank at a rate of two to three segments between vaults per day. After cable pulling is completed, the electrical cables would be spliced together. A splice crew would conduct splicing operations at each vault location and continue until all splicing is completed.

2.6.7.7 Transition Structure Construction

Transition structures constructed as part of the Project would consist of engineered TSP structures. The transition structure would support cable terminations, lightning arresters, and dead-end hardware for overhead conductors. At each end of an underground segment, the cables would rise out of the ground at transition structures, which accommodate the transition from underground to overhead subtransmission lines. Construction methods for these structures would be similar to those described in the *Tubular Steel Poles* discussion in Section 2.6.5.2, *Pole Installation*.

2.6.8 Energizing 66 kV Subtransmission Lines

Energizing the new subtransmission lines would be the final step in completing the 66 kV subtransmission construction. The existing Mira Loma-Corona-Jefferson and Archibald-Chino-Corona 66 kV subtransmission lines would be de-energized in order to connect the new 66 kV subtransmission line segments to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing subtransmission lines would occur ~~at night~~ when electrical demand is low or otherwise in accordance with California Independent System Operator's requirements.

2.6.9 Telecommunications Construction

Installation of the proposed telecommunications system for telemetry purposes would include new or upgraded telecommunications equipment that would be installed within Circle City, Mira Loma, Pedley, Corona, Chase, Jefferson, Cleargen, and Bain substations. Overhead and underground fiber optic cables would be installed on or in new and existing structures. Installation of telecommunications equipment within new and existing substations would be performed within the MEER. Telecommunications equipment would be installed into the rack, wired, and placed into service.

Overhead fiber optic cable would be installed on overhead structures, as described in Section 2.6.6.3 ~~2.6.5.3~~, *Conductor Stringing*. A truck with a cable reel would be set up at one end of the section to be pulled, and a truck with a winch would be set up at the other end. Typically, fiber optic cable pulls vary between 6,000 feet and 10,000 feet in length. Cable would be pulled into the pole and permanently secured. Fiber strands in the cable from one reel would be spliced to fiber strands in the cable from the next reel to form one continuous path.

New underground telecommunications conduit and structures would be collocated within the same duct banks that would be installed for the subtransmission line and the Circle City Substation distribution getaways (refer to Section 2.6.7, *Subtransmission Line Construction (Below Grade)*,

and Section 2.6.10, *Distribution Getaway and Underground 33 kV Installation*). For manholes and pull boxes, a hole approximately 6 to 9 feet deep, 7 to 8 feet long, and 6 to 7 feet wide would be excavated. The manhole or pull box would be lowered into place, connected to the conduits, and the area surrounding the manhole or pull box would be backfilled with concrete slurry.

The fiber optic cable would be installed throughout the length of the underground conduit and structures through an innerduct, which provides protection and identification for the cable. The innerduct would be pulled in the conduit from structure to structure using a pull rope and pulling machine or truck-mounted hydraulic capstan. The fiber optic cable then would be pulled inside the innerduct using the same procedure.

2.6.10 Distribution Getaway and Underground 33 kV Installation

Typical excavation for distribution duct bank installation would encompass construction of a trench approximately 2 feet wide and 4.5 feet deep. Ground disturbance for trenching and vault installation would be associated with the conduit and structure installation and concrete encasement. Construction activities would typically include the use of a backhoe, dump trucks, concrete trucks, and a crane. Excavated soils would be used to refill the trench and area surrounding the vaults, and excess soil would be trucked to an approved off-site disposal facility. See **Table 2-6**, *Landfills and Recycling Centers near the Project*, for a list of off-site disposal facilities that would likely be used for the Project.

2.6.11 Land Disturbance

Total permanent land disturbance for the Project would be approximately 28 acres, with temporary land disturbance of approximately 333 acres, as shown in Table 2-4, *Estimated Temporary and Permanent Land Disturbance.*

2.6.12 Storm Water Pollution Prevention Plan

Construction of the Project would disturb a surface area greater than 1 acre. Therefore, SCE would be required to obtain coverage under the Statewide Construction General Permit (Order No. 2009-0009-DWQ) from the State Water Resources Control Board. BMPs frequently included in SWPPPs to demonstrate compliance with Construction General Permit requirements include: storm water runoff quality control measures (boundary protection), dewatering procedures, and concrete waste management.

2.6.13 Site Cleanup, Dust Control, and Waste Management

SCE would clean up all areas that would be temporarily disturbed by construction of the Project, including the staging yards, construction setup areas, stringing sites, splicing sites, etc., to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction. SCE would provide closed trash containers at construction sites. Trash containers would be removed from the Project sites as required and would not be permitted to overfill.

TABLE 2-6
LANDFILLS AND RECYCLING CENTERS NEAR THE PROJECT SITE

Facility and Location	Waste Accepted	Approximate Capacity (cubic yards)		Approximate Distance from the Proposed Substation (miles)
		Total	Remaining	
El Sobrante Landfill 10910 Dawson Canyon Road, Corona	Solid waste, household refuse, yard trimmings, furniture, appliances, electronic waste	184,930,000	145,530,000	6.4
Frank R. Bowerman Sanitary Landfill 11002 Bee Canyon Access Road, Irvine	Mixed municipal, industrial, construction/demolition	266,000,000	205,000,000	14.4
West Valley Material Recovery Facility/Transfer Station (Transfer/ Processing Facility; Composting Facility; Construction and Demolition debris and Inert Debris Processing) 13373 Napa Street, Fontana	Construction/demolition, green materials, industrial, mixed municipal, wood waste	--	--	15.0
Olinda Alpha Sanitary Landfill 1932 North Valencia Avenue, Brea	Agricultural, industrial, construction/demolition, mixed municipal, tires, wood waste	74,900,000	38,578,383	18.4
San Bernardino County: Mid-Valley Landfill 2390 Alder Avenue, Rialto	Treated wood, solid waste, household refuse, yard trimmings, furniture, appliances, electronic waste, construction waste	101,300,000	67,520,000	19.8
Badlands Sanitary Landfill 31125 Ironwood Avenue, Moreno Valley	Solid waste, household refuse, electronic waste, tires	33,560,993	14,730,025	23.4
SAFETY-KLEEN (LAIDLAW) Imperial County, Westmorland, CA 92281	Wastewaters, contaminated soil, inorganics, organics, latex paint sludges, PCBs (< 50 ppm), pesticides, TCLP toxic metals, acid sludges, caustic sludges, and oil sludges	--	--	--
Buttonwillow Landfill 2500 West Lokern Road, Buttonwillow	Non-hazardous soil, California hazardous soil, hazardous soil for direct landfill, hazardous waste for treatment of metals, plating waste, hazardous and non-hazardous liquid, and debris for microencapsulation.	10,000,000	950,000	150

NOTES:

1 Due to the distance of the landfills and recycling centers from the Project in general, the proposed Circle City Substation was selected as a reference point because it is representative of the Project as a whole for purposes of evaluating relative distances from the site.

2 "--" means information is not available

SOURCE: PEA Table 4.17-1 (SCE, 2015); Colorado River Basin RWQCB, 2002

Project construction would require limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets (SDS) would be made available at the construction site for all crew members. The SWPPP prepared for the Project (see Section 2.6.12, *Storm Water Pollution Prevention Plan*) would provide the locations for storage of hazardous materials during construction, as well as protective measures, notifications, and cleanup requirements for any incidental spills or other potential releases of hazardous materials.

During construction, migration of fugitive dust from the construction sites would be limited by the implementation of control measures set forth in South Coast Air Quality Management District (SCAQMD) Rule 403. These measures may include, but not be limited to, the use of water trucks and other dust control measures. SCE estimates that approximately 107 acre-feet of water would be used during construction. Prior to construction, SCE would submit applications for temporary fire hydrant meters to connect to local fire hydrants to draw water for temporary construction needs. Water trucks would fill up as needed along the 66 kV routes at various approved fire hydrants by connecting a temporary floating hydrant meter. During construction of the Circle City Substation, a single-source hydrant meter would be established and a stand tank would be delivered to the site for water storage.

Project construction would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (e.g., from portable toilets). Material from existing infrastructure that would be removed as part of the Project such as conductor, steel, concrete, and debris, temporarily would be stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal. Material excavated for the Project either would be used as fill; backfill for pole installation; made available for use by the landowner; or disposed of at an appropriately licensed, off-site waste facility. Existing wood poles would be returned to an SCE staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified municipal landfill (SWRCB, 2003). See Table 2-6, *Landfills and Recycling Centers Near the Project Site*, for potential landfill disposal options in the Project area.

If potentially contaminated material is encountered during excavation, work would stop at that location and SCE's Spill Response Coordinator would be called to the site to make an assessment and notify the proper authorities. Work would continue at that location only when given clearance by the Spill Response Coordinator. Any potentially contaminated soil encountered would be segregated into lined stockpiles or placed in dump trucks or roll-off containers, sampled, and tested to determine appropriate handling, treatment, and disposal options. If the soil is classified as hazardous, it would be properly managed on location before being transported in accordance with United States Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility. All hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE protocols designed to protect the environment, workers, and the public.

2.6.14 Construction Workforce and Equipment

The estimated number of personnel and equipment required for construction of the Project are summarized in **Table 2-7**, *Construction Equipment and Workforce Estimates*.

Construction would be performed by either SCE construction crews or contractors. SCE construction crews typically would be based at SCE's local facilities, such as the existing Mira Loma Substation. Contractor construction personnel would be managed by SCE construction management personnel. Based on the large number of job openings for construction workers and supervisors of construction trades projected to occur between 2014 and 2024 within Riverside

and San Bernardino counties, it is assumed that contractor construction personnel also would come from the local area (EDD, 2017). SCE anticipates a total of approximately 100 construction personnel would be working on the Project any given day. SCE anticipates that crews would work concurrently whenever possible; however, the estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling.

TABLE 2-7
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Circle City Substation				
Survey	2	45	1 Survey Truck	8
Grading	7	60	2 Earth Movers	8
			2 Water Trucks	8
			1 Tracker	8
			2 Dump Trucks	8
			1 Water Tower	8
Soil Import/Export	1 person per truck	20	10 Haul Trucks	8
Fencing	6	20	1 Bobcat	8
			1 Flatbed Truck	8
			1 Crewcab Truck	8
Temporary Power-Pole Installation	2	3	1 Work Truck with Attached Auger	8
Civil	30	95	1 Excavator	8
			1 Dump truck	6
			1 Skip Loader	8
			2 Forklift	6
			2 17-Ton Crane	4
			1 Concrete Pump Truck	4
			2 Drill Rig	8
			3 Bobcat	8
			2 Backhoe Tracker	8
			2 Tool Trailer	8
			2 Pickup Truck	4
			2 Crew Truck	4
			2 Water Truck	4
MEER	6	30	1 Carry-all Truck	2
			1 Stake Truck	2
Electrical	25	80	2 Scissor Lifts	8
			2 15-Ton Crane	8
			1 20-Ton Crane	6
			1 50-Ton Crane	6
			1 Flatbed Truck	4
			2 Tool Trailer	8
			1 Commander Truck	8
			2 Pickup Truck	8

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Circle City Substation (cont.)				
Electrical (cont.)			2 Crew Truck	8
			3 Reach Manlift	8
			2 Forklift	8
Wiring	6	40	2 Manlift	4
			2 Tool Trailer	2
Transformers	4	30	2 15-Ton Crane	4
			1 Forklift	6
			2 Manlift	6
			2 Crew Trucks	2
			1 Low Bed Truck	2
Maintenance Crew Equipment Check	4	30	2 Maintenance Truck	8
Testing	4	60	2 Crew Truck	8
Asphalting	8	15	1 Paving Roller	8
			1 Asphalt Paver	8
			2 Dump Trucks	8
			1 Crew Truck	8
			1 Asphalt Curb Machine	8
			1 Tractor	8
Mira Loma Substation Work to Accommodate Mira Loma-Jefferson 66 kV Subtransmission Line				
Civil	8	20	1 Drill Rig	4
			1 Backhoe	8
			1 Bobcat	8
			1 Crew Truck	2
			1 Pickup Truck	2
Electrical	7	20	1 Crew Truck	2
			1 Crane/Boom Truck	8
			2 Manlift	6
Maintenance Commission	2	5	1 Maintenance Truck	1
Test	2	20	1 Test Truck	1
Source Line Construction				
Marshaling Yard	4	Duration	1 1-Ton Crew Cab, 4x4	4
			1 Boom/Crane Truck	2
			1 Rough Terrain Forklift	6
			1 Truck, Semi-Tractor	2
ROW Clearing	5	1	1 1-Ton Crew Cab, 4x4	8
			1 Road Grader	6
			1 Water Truck	8
			1 Backhoe/Front Loader	4
			1 Track Type Dozer	6
			1 Lowboy Truck/Trailer	4

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Source Line Construction (cont.)				
Road Work	5	1	1 1-Ton Crew Cab, 4x4	8
			1 Road Grader	6
			1 Water Truck	8
			1 Backhoe/Front Loader	4
			1 Drum Type Compactor	4
			1 Track Type Dozer	4
			1 Excavator	4
			1 Lowboy Truck/Trailer	3
Survey	4	5	2 1-Ton Trucks, 4x4	8
Guard Structure Installation	6	6	1 3/4-Ton Truck, 4x4	8
			1 1-Ton Crew Cab, 4x4	8
			1 Bucket Truck	4
			1 Boom/Crane Truck	6
			1 Auger Truck	4
			1 Compressor Trailer	4
			1 Extendable Flat Bed Pole Truck	8
Wood/H-Frame/LWS Pole Removal	6	2	1 1-Ton Truck, 4x4	8
			1 Compressor Trailer	4
			1 Manlift/Bucket Truck	6
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8
Install TSP Foundation	7	60	1 1-Ton Crew Cab, 4x4	4
			1 Boom/Crane Truck	4
			1 Auger Truck	6
			1 Water Truck	8
			1 Backhoe/Front Loader	4
			1 Dump Truck	6
			3 Concrete Mixer Trucks	2
TSP Haul	4	8	1 3/4-Ton Truck, 4x4	4
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8
TSP Assembly	8	30	2 3/4-Ton Trucks, 4x4	4
			2 1-Ton Crew Cabs, 4x4	4
			1 Compressor Trailer	4
			1 Boom/Crane Truck	6
TSP Erection	8	30	2 3/4-Ton Trucks, 4x4	4
			2 1-Ton Crew Cabs, 4x4	4
			1 Compressor Trailer	4
			1 30-Ton Rough Terrain Crane	6
Install Wood/LWS Pole	6	16	1 1-Ton Crew Cab, 4x4	8
			1 Bucket Truck	6
			1 Boom/Crane Truck	6

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Source Line Construction (cont.)				
Install Wood/LWS Pole (cont.)			1 Auger Truck	4
			1 Backhoe/Front Loader	8
			1 Extendable Flat Bed Pole Truck	8
Install Conductor	20	11	3 1-Ton Crew Cabs, 4x4	4
			4 Bucket/Trucks	8
			1 Boom/Crane Truck	8
			2 Wire Trucks/Trailers	6
			1 Dump Truck	2
			1 3-Drum Sock Line Puller	6
			1 Bull Wheel Puller	6
			1 Static Truck/Tensioner	6
			1 Backhoe/Front Loader	2
			2 Lowboy Trucks/Trailers	4
Guard Structure Removal	6	8	1 3/4-Ton Truck, 4x4	8
			1 1-Ton Crew Cab, 4x4	8
			1 Bucket Truck	4
			1 Boom/Crane Truck	6
			1 Compressor Trailer	4
			1 Extendable Flat Bed Pole Truck	8
Restoration	7	5	2 1-Ton Crew Cabs, 4x4	4
			1 Road Grader	6
			1 Water Truck	8
			1 Backhoe/Front Loader	2
			1 Drum Type Compactor	4
			1 Lowboy Truck/Trailer	3
Vault Installation	6	22	2 1-Ton Crew Cabs, 4x4	6
			1 Backhoe/Front Loader	6
			1 Excavator	6
			2 Dump Trucks	6
			1 Water Truck	8
			1 165-Ton Crane	6
			3 Concrete Mixer Trucks	2
			1 Lowboy Truck/Trailer	4
			3 Flat Bed Trucks/Trailers	4
Duct Bank Installation	6	19	2 1-Ton Crew Cabs, 4x4	4
			1 Backhoe/Front Loader	6
			2 Dump Trucks	6
			1 Pipe Truck/Trailer	6
			1 Water Truck	8
			3 Concrete Mixer Trucks	2
			1 Compressor Trailer	4
			1 Lowboy Truck/Trailer	4

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Mira Loma-Jefferson 66 kV Subtransmission Line construction				
Survey	4	12	2 1-Ton Trucks, 4x4	8
			1 1-Ton Crew Cab, 4x4	4
			1 Boom/Crane Truck	2
Marshaling Yard	4	Duration	1 Rough Terrain Forklift	6
			1 Truck, Semi-Tractor	2
			1 Water Truck	8
ROW Clearing	5	21	1 1-Ton Truck, 4x4	8
			1 Backhoe/Front Loader	6
			1 Track Type Dozer	6
			1 Motor Grader	6
			1 Water Truck	8
			1 Lowboy Truck/Trailer	4
Road Work	5	6	1 1-Ton Crew Cab, 4x4	8
			1 Backhoe/Front Loader	4
			1 Track Type Dozer	4
			1 Motor Grader	6
			1 Water Truck	8
			1 Drum Type Compactor	6
			1 Excavator	4
			1 Lowboy Truck/Trailer	4
Guard Structure Installation	6	12	1 3/4-Ton Truck, 4x4	8
			1 1-Ton Truck, 4x4	8
			1 Compressor Trailer	4
			1 Manlift/Bucket Truck	4
			1 Boom/Crane Truck	6
			1 Auger Truck	4
			1 Extendable Flat Bed Pole Truck	8
Remove Exiting Conductor and Ground Wire	14	1	2 1-Ton Trucks, 4x4	4
			2 Manlift/Bucket Trucks	8
			2 Boom/Crane Trucks	8
			1 Bull Wheel Puller	6
			1 Sock Line Puller	6
			1 Static Truck/Tensioner	6
			2 Lowboy Trucks/Trailers	4
Wood/H-Frame/LWS Pole Removal	6	25	2 1-Ton Trucks, 4x4	8
			1 Compressor Trailer	4
			1 Manlift/Bucket Truck	6
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8
H-Frame Hybrid Pole Structure Removal	8	8	2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	8
			1 Rough Terrain Crane (Medium)	6

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Mira Loma-Jefferson 66 kV Subtransmission Line construction (cont.)				
H-Frame Hybrid Pole Structure Removal (cont.)			1 Boom/Crane Truck	6
			1 Flat Bed Truck/Trailer	4
TSP Removal	8	4	2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	8
			1 Rough Terrain Crane (Medium)	6
			1 Boom/Crane Truck	6
			1 Flat Bed Truck/Trailer	4
TSP Foundation Removal	4	14	1 3/4-Ton Truck, 4x4	4
			1 Compressor Trailer	8
			1 Backhoe/Front Loader	6
			1 Dump Truck	6
			1 Excavator	4
Install TSP Foundations	6	40	1 3/4-Ton Truck, 4x4	4
			1 Boom/Crane Truck	4
			1 Backhoe/Front Loader	6
			1 Auger Truck	6
			1 Water Truck	8
			1 Dump Truck	4
			3 Concrete Mixer Trucks	2
TSP Haul	4	4	1 3/4-Ton Truck, 4x4	8
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8
TSP Assembly	8	18	2 3/4-Ton Trucks, 4x4	4
			2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	6
			1 Boom/Crane Truck	8
TSP Erection	8	18	2 3/4-Ton Trucks, 4x4	4
			2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	4
			1 Boom/Crane Truck	8
Wood/LWS Pole Haul	4	37	1 3/4-Ton Truck, 4x4	8
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8
Wood/LWS Pole Assembly	8	56	2 3/4-Ton Trucks, 4x4	4
			2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	6
			1 Boom/Crane Truck	8
Hybrid Pole Haul	4	4	1 3/4-Ton Truck, 4x4	8
			1 Boom/Crane Truck	6
			1 Flat Bed Pole Truck	8

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Mira Loma-Jefferson 66 kV Subtransmission Line construction (cont.)				
Install H-frame Hybrid Pole Structure	6	16	1 1-Ton Truck, 4x4	8
			1 Manlift/Bucket Truck	6
			1 Boom/Crane Truck	6
			1 Auger Truck	4
			1 Backhoe/Front Loader	8
			1 Extendable Flat Bed Pole Truck	8
Transfer and Install Conductor	20	33	3 1-Ton Trucks, 4x4	4
			4 Manlift/Bucket Trucks	8
			1 Boom/Crane Truck	8
			1 Dump Truck	2
			2 Wire Trucks/Trailers	6
			1 Sock Line Puller	6
			1 Bull Wheel Puller	6
			1 Static Truck/Tensioner	6
			1 Backhoe/Front Loader	2
			2 Lowboy Trucks/Trailers	4
Guard Structure Removal	6	9	1 3/4-Ton Truck, 4x4	8
			1 1-Ton Crew Cab, 4x4	8
			1 Compressor Trailer	4
			1 Manlift/Bucket Truck	4
			1 Boom/Crane Truck	6
			1 Extendable Flat Bed Pole Truck	8
Restoration	7	11	2 1-Ton Trucks, 4x4	4
			1 Backhoe/Front Loader	8
			1 Motor Grader	6
			1 Water Truck	8
			1 Drum Type Compactor	4
			1 Lowboy Truck/Trailer	4
Vault Installation	6	3	2 1-Ton Trucks, 4x4	4
			1 Backhoe/Front Loader	8
			1 Excavator	6
			2 Dump Trucks	8
			1 Water Truck	8
			1 Crane (Large)	6
			3 Concrete Mixer Trucks	2
			1 Lowboy Truck/Trailer	4
			3 Flat Bed Trucks/Trailers	4
Duct Bank Installation	6	2	2 1-Ton Trucks, 4x4	4
			1 Compressor Trailer	4
			1 Backhoe/Front Loader	6
			2 Dump Trucks	6
			1 Pipe Truck/Trailer	6
			1 Water Truck	8

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Mira Loma-Jefferson 66 kV Subtransmission Line construction (cont.)				
Duct Bank Installation (cont.)			3 Concrete Mixer Trucks	2
			1 Lowboy Truck/Trailer	4
Install Underground Cable	8	2	2 1-Ton Trucks, 4x4	4
			1 Manlift/Bucket Truck	6
			1 Boom/Crane Truck	6
			2 Wire Trucks/Trailers	6
			1 Puller	6
			1 Static Truck/Tensioner	6
Telecommunications Construction				
Fiber Optic Cable Installation	7	25	2 1-Ton Pickup Trucks	8
			2 Bucket Trucks	8
			1 Flatbed Truck	4
			1 Arrow Board Trailer	8
Fiber Optic Cable Splicing	2	10	1 1-Ton Pickup Truck	8
			2 Medium-Duty Splicing Lab Trucks	8
Underground Conduit	5	15	1 Dump Truck	8
			1 Flatbed Truck	8
			1 Backhoe	8
			1 1-Ton Pickup Truck	4
			1 Water Truck	4
			1 Cement Truck	4
Distribution Construction – Getaways				
Vault Installation	7	48	1 Backhoe	8
			1 Dump Truck with Triple-Axle Trailer	8
			1 1-Ton Pickup Truck with Single-Axle Trailer	8
			1 Water Truck	8
			2 Cement Trucks	8
			1 40-Ton Crane	8
			1 Flatbed Truck	8
Trench/Duct Installation	4	20	1 Backhoe	8
			1 Dump Truck with Triple-Axle Trailer	8
			1 1-Ton Pickup Truck with Single-Axle Trailer	8
			1 Water Truck	8
			2 Cement Trucks	8
Distribution Construction – Relocation of Existing Structures (Mira Loma-Jefferson 66 kV Subtransmission Line)				
Location 1 – Construction Line	9	11	2 Bucket Trucks	8
			1 Single-Axle Trailer	8
			1 1-Ton Pickup Truck	8
			1 1/2-Ton Pickup Truck	4

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Distribution Construction – Relocation of Existing Structures (Mira Loma-Jefferson 66 kV Subtransmission Line) (cont.)				
Location 1 – Stringing Crew	4	4	1 Truck Pulling Stringing Dolly 1 Truck Pulling Reel Dolly 1 1/2-Ton Pickup Truck	8 8 4
Location 2 – Construction Line	9	57	2 Bucket Trucks 1 Single-Axle Trailer 1 1-Ton Pickup Truck 1 1/2-Ton Pickup Truck	8 8 8 4
Location 2 – Stringing Crew	4	10	1 Truck Pulling Srtinging Dolly 1 Truck Pulling Reel Dolly 1 1/2-Ton Pickup Truck	8 8 4
Location 3 – Construction Line	9	13	2 Bucket Trucks 1 Single-Axle Trailer 1 1-Ton Pickup Truck 1 1/2-Ton Pickup Truck	8 8 8 4
Location 3 – Stringing Crew	4	5	1 Truck Pulling Stringing Dolly 1 Truck Pulling Reel Dolly 1 1/2-Ton Pickup Truck	8 8 4
Location 4 – Construction Line	9	83	2 Bucket Trucks 1 Single-Axle Trailer 1 1-Ton Pickup Truck 1 1/2-Ton Pickup Truck	8 8 8 4
Location 4 – Stringing Crew	4	11	1 Truck Pulling Stringing Dolly 1 Truck Pulling Reel Dolly 1 1/2-Ton Pickup Truck	8 8 4
Location 5 – Vault Installation	7	96	1 Backhoe 1 Dump Truck with Triple-Axle Trailer 1 1-Ton Pickup Truck with Single-Axle Trailer 1 Water Truck 2 Concrete Mixer Trucks 1 40-Ton Crane 1 Flatbed Truck	8 8 8 8 8 8 8
Location 5 – Trench/Duct Installation	4	165	1 Backhoe 1 Dump Truck with Triple-Axle Trailer 1 1-Ton Pickup Truck with Single-Axle Trailer 1 Water Truck 2 Cement Trucks	8 8 8 8 8

TABLE 2-7 (CONTINUED)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES

Activity	Number of Personnel	Number of Workdays	Equipment and Quantity	Duration of Use (Hours/Day)
Distribution Construction – Relocation of Existing Structures (Source Line Route 1)				
Location 1	9	45	2 Bucket Trucks	8
			1 Single-Axle Trailer	8
			2 1-Ton Pickup Trucks	8
			1 1/2-Ton Pickup Truck	4
Location 2	5	3	2 Bucket Trucks	8
			1 Single-Axle Trailer	8
			1 1-Ton Pickup Truck	8
Distribution Construction – Relocation of Existing Structures (Source Line Route 2)				
Location 1	5	10	2 Bucket Trucks	8
			1 1-Ton Pickup Truck	8
			1 Splicing Van	8
			2 Cable-Pulling Trucks with Single-Axle Cable Dolly	8
			1 Cable Chopping Truck	8
			1 Dump Truck	8
			1 Backhoe	8
			1 Arrow Board Trailer	8
Distribution Construction – Relocation of Existing Structures (Source Line Route 2) (cont.)				
Location 2	7	34	1 Backhoe	8
			1 Dump Truck with Triple-Axle Trailer	8
			1 1-Ton Pickup Truck with Single-Axle Trailer	8
			1 Water Truck	8
			2 Concrete mixer truck	8
			1 40-Ton Crane	8
			1 Flatbed Truck	8

NOTE: See PEA Table 3-6, *Construction Equipment Description*, for details about the intended uses of the various types of equipment.
SOURCE: PEA Table 3-5 (SCE, 2015).

2.6.15 Construction Schedule

SCE anticipates that construction of the Project would take approximately 18 months, as detailed in **Table 2-8**, *Proposed Construction Schedule*. Construction would commence following the CPUC's approval, final engineering, procurement activities, and receipt of all applicable authorizations.

Construction activities would adhere to the allowable construction work hours specified in the noise ordinances of local jurisdictions~~, including as allowed by variance if necessary~~ with the possible exception of some construction activities. ~~Work may be necessary outside generally allowed periods~~, for example, to deliver the transformer, fill substation transformers, or to effect or respond to outages (planned or unplanned) during nighttime hours.

TABLE 2-8
PROPOSED CONSTRUCTION SCHEDULE

Project Activity	Approximate Start Date	Approximate Duration (Months)
Final Engineering	Q1, 2019	12 months
ROW/Property Acquisition	Q2. 2019	17 months
Acquisition of Required Permits	Q3, 2019	18 months
Substation Construction	Q3, 2020	12 months
Subtransmission Line Construction	Q3, 2021	18 months
Telecommunications Construction	Q4, 2021	6 months
Distribution Construction	Q3, 2020	11 months
Project Operational	Q2, 2022	

NOTE: The construction schedule is based on the schedule presented in SCE's PEA, with adjustments assuming SCE would receive its CPUC Permit to Construct during the first quarter of 2019. The proposed construction schedule does not account for unforeseen delays, including but not limited to those that may result from inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds).

SOURCE: PEA Table 3-7 (SCE, 2015)

In the event construction activities are necessary on days or hours outside of what is specified by ordinance (for example, if existing electricity lines must be taken out of service for the work to be performed safely and the line outage must be taken at night for system reliability reasons, or if construction needs require continuous work), SCE would provide 5-day advanced notification, including a general description of the work to be performed, location, and hours of construction anticipated, to the CPUC, any applicable/impacted local jurisdiction, and residents within 300 feet of the anticipated work, as well as route all after-hours construction traffic away from residences, schools, and recreational facilities to the maximum extent feasible. These requirements may be waived in the event that emergency and/or potentially unsafe work conditions would be created by limiting construction activities to those hours specified by ordinance. SCE would report any such events to the CPUC within 5 business days.

2.7 Operation and Maintenance

The subtransmission and distribution lines would be maintained in a manner consistent with CPUC GO 95 and GO 128 as applicable such that normal operation of the lines, substation, and subtransmission lines would be controlled remotely through SCE control systems, and manually in the field as required.

GO 165 established minimum requirements for electric subtransmission and distribution facilities with respect to inspections, record-keeping, and reporting. SCE would inspect the subtransmission and distribution overhead facilities in a manner consistent with CPUC GO 165, which would be a minimum of once per year via ground.

Maintenance would occur as needed by existing SCE employees and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Most regular operation and maintenance activities of overhead facilities are

performed from existing access roads with no surface disturbance. Maintenance of existing facilities, including for example, repairing or replacing existing poles and towers, could occur in undisturbed areas. Existing conductors could require re-stringing to repair damages. Some pulling site locations could need to be established temporarily in previously undisturbed areas. Further, conductors could need to be passed through existing vegetation on route to their destination.

Routine access road maintenance is conducted annually and/or as-needed. Road maintenance includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention); blading to smooth over washouts, eroded areas, and washboard surfaces; and stormwater management work such as cleaning ditches, moving and establishing berms, clearing and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance includes trimming or removal of shrubs approximately 2 to 5 feet beyond the berm's or road's edge when necessary to keep vegetation from intruding into the roadway as well as the repair, replacement, and installation of storm water diversion devices on an as-needed basis.

Insulators could require periodic washing with water to prevent the buildup of contaminants (dust, salts, droppings, smog, condensation, etc.) and reduce the possibility of electrical arcing which can result in circuit outages and potential fire. Frequency of insulator washing is region specific and based on local conditions and build-up of contaminants. Replacement of insulators, hardware, and other components is performed as needed to maintain circuit reliability.

Maintenance of some pole locations and associated lay down areas could result in ground and/or vegetation disturbance, though attempts would be made to utilize previously disturbed areas to the greatest extent possible. In some cases, new access may be created to remove and replace an existing pole. During necessary wood pole testing and treating, intrusive inspections could be required that would result in the temporary removal of soil around the base of the pole, usually to a depth of approximately 12 to 18 inches, to check for signs of deterioration. Existing roads and trails would be utilized for access to poles for testing and treating. All soil removed for intrusive inspections would be reinstalled and compacted at completion of the testing.

Regular tree pruning would be performed in accordance with applicable requirements, including, but not limited to, the tree pruning standards for distances from overhead lines have been set by the CPUC (GO 95, Rule 35), California Public Resource Code Section 4293, and California Code of Regulations Title 14, Article 4. SCE's standard approach to tree pruning is to remove at least the minimum required by law plus one years' growth, depending on the species.

Clearance of brush and weeds around poles may be required by applicable regulations on fee-owned ROWs or for fire protection. A 10-foot radial clearance around non-exempt poles (as defined by California Code of Regulations Title 14, Article 4) and a 25- to 50-foot radial clearance around non-exempt towers (as defined by California Code of Regulations Title 14, Article 4) would be maintained in accordance with Public Resource Code Section 4292.

In addition to regular operation and maintenance activities, SCE would conduct emergency repairs in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of

downed poles, or lines or re-stringing conductors. Poles would be accessed on foot or by creating temporary access areas. The telecommunications equipment would also be subject to maintenance and repair activities on an as needed or emergency basis. Typically, access would be from existing access roads.

The telecommunications cables would be maintained on an as-needed or emergency basis. Maintenance activities would include patrolling, testing, repairing, and replacing damaged cable and hardware. Most regular maintenance activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs to existing facilities, such as repairing or replacing existing cables and re-stringing cables, could occur in undisturbed areas.

2.8 Worker Environmental Awareness Training

Prior to construction, a Worker Environmental Awareness Plan (WEAP) would be developed. SCE would prepare a presentation for use in training all site personnel prior to the commencement of work. SCE would keep a record of all trained personnel. In addition to instruction on compliance with any site-specific environmental resource protection measures and mitigation measures, SCE would provide all construction personnel with the following:

- A list of phone numbers of SCE environmental specialist personnel associated with the Project (e.g., the archaeologist, biologist, environmental compliance coordinator, and regional spill response coordinator).
- Instruction on the SCAQMD fugitive dust rules.
- A description of applicable noise construction time and/or noise level limits.
- A review of applicable federal, state, and local ordinances, laws and regulations pertaining to historic and paleontological preservation; a discussion of disciplinary and other actions that could be taken against persons violating historic and paleontological preservation laws and SCE policies; and a review of paleontology, archaeology, history, prehistory, and Native American cultures associated with historical and paleontological resources in the Project vicinity. Instruction on these resources would cover what typical cultural and paleontological resources look like, and direction that if any are discovered during construction, work is to be suspended in the vicinity of any find and the site foreman and SCE Project Archaeologist or environmental compliance coordinator is to be contacted for further direction.
- Instruction on the roles of environmental monitors (biological, cultural, and paleontological), if present, and the appropriate treatment by on-site personnel of areas designated as environmentally sensitive areas.
- Instruction on the importance of maintaining the construction site, such as ensuring all food scraps, wrappers, food containers, cans, bottles, and other trash from the Project area are deposited in closed trash containers.
- Instruction on the individual responsibilities under the Clean Water Act, the Project SWPPP, site-specific BMPs, and the location of SDSs for the Project.
- Instructions to notify the foreman and regional spill response coordinator in case of a hazardous materials spill or leak from equipment, or upon the discovery of soil or groundwater contamination.

- Instructions to cover all holes/trenches at the end of each day.
- A copy of the truck routes to be used for material delivery.
- Instruction that non-compliance with any laws, rules, regulations, or mitigation measures could result in being barred from participating in any remaining construction activities associated with the Project.

2.9 Land Rights

Some additional land rights may be required to construct, operate, and maintain the Project components described above. Upon final engineering and receipt of Project approvals, SCE would confirm the necessary land rights and acquire new or amend existing rights as follows:

- **Substation:** The proposed Circle City Substation would be located south of Leeson Lane, northeast of All American Way, and west of Temescal Street in the City of Corona, in Riverside County. SCE acquired approximately 19.5 acres for the substation footprint as well as a setback supporting future road improvements, landscaping, access, parking, transmission and subtransmission tie-in, and distribution getaway routes.
- **Access:** The proposed SCE fee-owned substation access would be provided directly from Leeson Lane, with a possible alternate access from All American Way. Access to the majority of all Project components would be provided from existing public roads and/or existing access roads. Upon final engineering and Project approval, new or amended access road rights for the Mira Loma-Jefferson Subtransmission Line between Mira Loma Substation and the proposed SCE fee-owned substation may be required.
- **Subtransmission:** The proposed 66 kV source lines would tie into the proposed substation from the existing Mira Loma-Corona-Pedley 66 kV Subtransmission Line at the intersection of West Harrison Street and North Cota Street and from the existing Chase-Corona-Databank 66 kV Subtransmission Line at the intersection of Magnolia Avenue and Rimpau Avenue. These 66 kV Source Lines would be located within public ROW where SCE holds franchise. The proposed Mira Loma-Jefferson 66 kV Subtransmission Line would originate at SCE's existing Mira Loma Substation and connect to the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line near the existing Corona Substation. SCE would install the proposed subtransmission facilities within existing SCE fee-owned ROW, easements, and public ROW where SCE is in franchise; however, approximately 110 private properties would require new or ~~upgraded~~ amended land rights and agency permits (87 private property and 23 agency) based on final engineering.
- **Distribution:** The distribution getaways would exit the proposed SCE fee-owned substation, but remain on the substation property until they exit the property. SCE would install the proposed distribution facilities within existing SCE fee-owned ROW, easements, and/or public ROW where SCE is in franchise. Any proposed and existing distribution lines along the proposed route would be collocated on the same structures and/or placed underground within the franchise position and should not require additional land rights.
- **Telecommunications:** SCE would install the proposed telecommunications facilities within existing SCE fee-owned ROW, easements, and/or public ROW where SCE is in franchise. Any proposed and existing telecommunications lines along the proposed route would be collocated on the same structures and/or placed underground within the franchise position and should not require additional land rights.

- **Construction Support:** Based on final engineering and construction requirements, temporary land rights (e.g., temporary construction easements [TCE], permits, leases, and licenses) may be required for access roads, laydown areas, pulling sites, and staging and work areas for any approved Project components.

To support the Project, SCE would utilize approximately 0.2 mile of SCE fee-owned property; approximately 3.9 miles of existing easements of variable widths, measuring up to 130 feet wide; approximately 7.6 miles of franchise rights; and approximately 4.1 miles of proposed new or upgraded easements that are sufficient to contain the proposed facilities and provide safety and access, which is estimated to be 25 to 30 feet wide. Ultimately, the final easement widths would be based on facility types, final design and type of right to be acquired; therefore, only approximate widths are available at this time. Upgrading easements may include amending existing ~~adding~~ land rights~~,~~ by adding width to existing easements~~,~~ and improving or clarifying access or maintenance rights.

2.10 Applicant-Proposed Measures

SCE has identified 19 Applicant-Proposed Measures (APMs) that it has developed to avoid or reduce anticipated potential impacts of the Project. SCE would conduct the design, construction, operation, and maintenance of the Project in accordance with its APMs. They are as follows:

APM AES-01: Construction Lighting. If temporary construction lighting is required, SCE would use shielded construction light fixtures and lighting would be directed away from nearby residences.

APM AIR-01: Fugitive Dust. During construction, surfaces disturbed by construction activities would be covered or treated with a dust suppressant until completion of activities at each site of disturbance. On-site unpaved roads and off-site unpaved access roads utilized during construction within the Project area would be effectively stabilized (e.g., using water or chemical stabilizer/suppressant) to control dust emissions. On-road vehicle speeds on unpaved roadways would be restricted to 15 miles per hour.

APM AIR-02: Tier 3 Engines. Off-road diesel construction equipment with a rating between 100 and 750 horsepower would be required to use engines compliant with United States (U.S.) Environmental Protection Agency Tier 3 non-road engine standards. In the event that a Tier 3 engine is not available, the equipment would be equipped with a Tier 2 engine and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled off-road construction equipment or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 2 engine is not available, that equipment would be equipped with a Tier 1 engine and documentation of the unavailability would be provided.

APM BIO-01: Implement Biological Monitoring. Biological Monitors would be utilized during Project construction within areas encompassing sensitive biological resources or habitats suitable for any special-status species. The Biological Monitors in coordination with the SCE Lead Biologist would be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and unique resources are avoided to the extent feasible. Biological

Monitors would flag the boundaries of areas where activities need to be restricted to protect native plants and wildlife and/or special-status species. These restricted areas would be monitored for their protection during construction. If non-listed sensitive fauna are found within the impact area and could be harmed, the Biological Monitor would relocate the individual out of the Project impact area. If listed species are found within the impact area, only a biologist with the appropriate permit to handle that species would be allowed to relocate the individual. The Biological Monitor would have the authority to suspend any operation that is, in the qualified biologist's opinion, not consistent with regulations or approved mitigation plans related to the protection of biological resources.

APM BIO-02: Avoid, Minimize, and/or Mitigate Impacts to Special-Status Plant Species. If any special-status plant species are discovered within the impact area, the Project impact boundary would be adjusted to avoid impacts on observed special-status plant species unless the adjustment would impact worker or public safety. If avoidance is not possible, a qualified biologist would prepare and implement a mitigation plan, which would include a detailed description of the appropriateness of the mitigation site, monitoring requirements, and annual reporting requirements. Measures may involve soil salvage, seed collection, and/or transplantation to establish the species in a suitable mitigation site.

Should SCE opt to participate in the Western Riverside County Multi Species Habitat Conservation Plan (MSHCP) for areas within Riverside County and for locations with positive survey results for narrow-endemic plant species, 90 percent of those portions of the property that provide for long-term conservation value would be avoided until it is demonstrated that conservation goals for the particular species are met. If the 90-percent threshold cannot be met, SCE would prepare the mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation (DBESP) document. The Regional Conservation Authority (RCA) would request U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on relevant biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and the CDFW. It should also be noted that, assuming all focused plant surveys are current at the time of the Participating Special Entity (PSE) and DBESP review, any MSCHP-covered plant species not observed during surveys, but is observed at a later date prior to or during construction, would not require additional mitigation.

Applicable to: Mira Loma Substation, Corona Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.

APM BIO-03: Avoid, Minimize, and/or Mitigate Impacts to Fairy Shrimp. Impacts to listed fairy shrimp would be avoided to the extent feasible. Habitat areas with listed fairy shrimp would be marked as "off limits" in construction plans and/or maps and in the field.

Should SCE opt to participate in the Western Riverside County MSHCP, pursuant to Section 6.1.2 of the MSHCP and/or if the Project design is determined to impact vernal pool

resources, avoidance and minimization measures would be implemented in accordance with the species-specific objectives for Riverside fairy shrimp and vernal pool fairy shrimp. If avoidance is not feasible, an alternative that minimizes direct and indirect effects to vernal pools and associated functions and values would be selected. Those impacts that are unavoidable would be mitigated such that the lost functions and values would be replaced, as set forth under a DBESP. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW. It should also be noted that, assuming all fairy shrimp surveys are current and have been conducted pursuant to approved protocols at the time of the PSE and DBESP review, any MSHCP-covered fairy shrimp species not observed during surveys, but which are observed at a later date prior to or during construction, would not require additional mitigation.

For areas within San Bernardino County, or if SCE opts out of the MSHCP in Riverside County, SCE would prepare a Habitat Conservation Plan (HCP) and seek take authorization through Section 7 or Section 10 of the FESA for impacts to listed fairy shrimp. Prior to construction, SCE would obtain a Biological Opinion issued from the USFWS authorizing the removal of applicable resources (i.e., listed fairy shrimp habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-04: Avoid, Minimize, and/or Mitigate Impacts to Delhi Sands Flower-Loving Fly. Impacts to DSFF would be avoided to the extent practicable. Should avoidance be infeasible, SCE would seek take authorization through Section 7 or Section 10 of the FESA for impacts to occupied habitat of DSFF in San Bernardino County, or if SCE did not opt to become a PSE in the MSHCP in Riverside County. Prior to construction, SCE would prepare an HCP and seek a Biological Opinion issued from the USFWS that would authorize the removal of applicable resources (i.e., DSFF habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts. Should SCE opt to participate in the MSHCP, and if DSFF are found full avoidance through on-site preservation would be preferred. However, should on-site preservation be infeasible, purchase of suitable DSFF habitat at a 3:1 ratio in specifically designated areas could be required by the RCA.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yard at the north end of the study area (portions that encompass Delhi series soils and that would be within the SCE Ontario Recovery Unit).

APM BIO-05: Avoid or Minimize Impacts to Special-Status Fish Species. Should Project work occur within open water (i.e., in the Santa Ana River), impacts to special-status fish species would be avoided to the extent feasible. Should SCE opt to participate in the MSHCP, avoidance/minimization measures are not specifically required by the MSHCP. Should SCE not opt to participate in the MSHCP, the following avoidance/minimization measures shall be required to ensure that special-status fish species are not present within the construction area:

- Work would be conducted during the dry season when there would be less potential to impact special-status fish species.
- Prior to the initiation of construction activities within the Santa Ana River, barrier nets would be installed upstream and downstream from the work area in open water, allowing sufficient space for construction crews to operate. These nets are intended to exclude fish from the work area.
- Any fish that may appear inside the netted area after the barrier nets are established would be captured and relocated outside the work area by a qualified Biologist.
- Daily monitoring of the nets would be performed to ensure the nets are in-place and free of debris.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-06: Avoid, Minimize, and/or Mitigate Impacts to Least Bell's Vireo. For areas in Riverside County, SCE may choose to mitigate potential impacts to the least Bell's vireo and the western yellow billed cuckoo by participation in the Western Riverside County MSHCP. SCE would prepare a DBESP to cover permanent impacts that would include conservation recommendations for least Bell's vireo and western yellow billed cuckoo pursuant to the MSHCP. The DBESP would also include a discussion of avoidance and minimization of temporary impacts (i.e., exclusion buffers during construction). The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" as well as DBESP approval. For areas within San Bernardino County, or if SCE opts out of the Western Riverside MSHCP, temporary and permanent impacts to least Bell's vireo, western yellow billed cuckoos, and their habitat would be mitigated by obtaining a take permit under the FESA and CESA. The conditions of the take permit would include acreages of disturbance, mitigation ratios for permanent and temporary disturbance, locations for restoration and/or potential mitigation banks for payment. Conservation recommendations may include the following at the discretion of the USFWS:

- In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, SCE would conduct non-protocol preconstruction clearance surveys no more than 7 days prior to construction to determine the location of nests and territories.
- In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, a buffer area around active nest(s) would be established by the SCE biologist and provided to FWS and CDFW for concurrence. The buffer would be established based on construction activities, potential noise levels and behavior of the species.
- Construction activities in occupied habitat for the least Bell's vireo and western yellow billed cuckoo would be monitored by a Qualified Biologist.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-07: Avoid and/or Minimize Impacts to Special-Status Vegetation – Non-Riparian. Impacts to special-status vegetation communities that may support special-status species and provide foraging habitat for sensitive raptors and other bird species would be avoided to the extent feasible. Non-riparian special-status vegetation, which includes Riversidean sage scrub, would be marked as "off limits" in construction plans and/or maps, and flagged prior to

construction by a qualified Biological Monitor. If significant impacts to special-status vegetation are unavoidable, mitigation may be necessary depending on the quality of vegetation and the ability to support habitat for special-status species. Should SCE opt to participate in the Western Riverside County MSHCP, impacts to special-status vegetation communities within Riverside County are fully covered through payment of mitigation fees. Should SCE choose to opt out of the MSHCP PSE process, a restoration plan would be prepared in consultation with the USFWS and CDFW. The restoration plan would include, but is not limited to, identification of responsible parties, restoration details and schedule, monitoring and maintenance, and success criteria.

Applicable to: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.

APM BIO-08: Avoid, Minimize, and/or Mitigate Impacts to Burrowing Owl. Should SCE opt to participate in the MSHCP for areas within Riverside County, then avoidance/minimization would be preferred. However, if avoidance/minimization would not be possible (i.e., 90 percent of the areas with long-term conservation value were conserved), then a DBESP would be prepared that would include suitable burrowing owl habitat creation and translocation. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval.

For areas within San Bernardino County, a Burrowing Owl Management Plan would be created for the Project. The plan would include information related to construction monitoring, relocation strategy, and exclusionary devices.

- A preconstruction non-protocol burrowing owl survey shall be conducted no more than 14 days prior to commencement of ground disturbing activities with suitable habitat to determine if any occupied burrows are present.
- If occupied burrows are found, adequate buffers would be established around burrows. Adequate buffers would be 160 feet from wintering burrows (i.e., from December 1-January 31) and 250 feet from breeding burrows during the breeding season (i.e., from February 1 to August 31).
- Biological monitors would monitor all construction activities that could potentially impact active burrows.

Applicable to: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, staging yards, access roads, guard structures, and stringing sites.

APM BIO-09: Avoid Impacts to Nesting Birds. SCE would conduct pre-construction clearance surveys no more than 7 days prior to construction to determine the location of nesting birds and territories during the nesting bird season (typically February 1 to August 31, or earlier for species such as raptors). An avian biologist would establish a buffer area around active nest(s) and would monitor the effects of construction activities to prevent failure of the active nest. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. Monitoring of construction activities that have the potential to affect

active nest(s) would continue until the adjacent construction activities are completed or until the nest is no longer active.

APM BIO-10: Avoid, Minimize, and/or Mitigate Impacts to MSHCP covered Riparian Vegetation/Riverine Habitat. Pursuant to MSHCP Section 6.1.2, impacts to riparian/riverine habitat would be avoided to the extent feasible. In areas where avoidance is not possible, permanent impacts to riparian vegetation, which includes willow riparian forest vegetation and/or riverine habitat would be mitigated to ensure no net loss of habitat. Prior to construction, the limits of grading would be clearly marked around any such habitat.

SCE also would prepare a mitigation plan in the format of a DBESP as part of the PSE review process. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-11: Mitigation for Impacts to Jurisdictional Waters. Impacts to potential USACE-, RWQCB-, and CDFW-jurisdictional areas would be avoided to the extent feasible. These areas would be marked as "off limits" in construction plans and/or maps and in the field. If avoidance is not feasible, permits from the USACE, RWQCB, and CDFW would be obtained for direct and indirect impacts on areas within these agencies' jurisdictions. It is anticipated that the regulatory permit requirements would contain measures to avoid, reduce, and/or mitigate for impacts in their respective jurisdictions. In areas where avoidance is not possible, impacts to jurisdictional waters would be mitigated to ensure no net loss of habitat. SCE would pay into a mitigation bank, pay into an in-lieu fee program, or work with a local RCD to establish appropriate mitigation within the same watershed as the area of impact. On-site restoration back to existing conditions would implemented where possible; however, on-site mitigation with conservation easements and deed restrictions is rarely possible within SCE work easements. Subject to the approval of the resource agencies (i.e., USACE, RWQCB, and CDFW), SCE would submit the required materials and mitigation proposal as part of the regulated waters application processes. SCE would comply with all conditions as set forth in the regulated water permits.

Applicable to: Source Line Route and Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-12: Avoid, Minimize, and/or Mitigate Protected Trees. The Project would be designed to avoid protected trees to the extent feasible. Should SCE need to trim, encroach into protected root zone, relocate, or remove any protected trees as identified during pre-construction surveys, a ministerial permit would be required by the local jurisdiction's applicable ministerial tree ordinances. Due to the varying jurisdictions within the survey areas, measures would be implemented depending on the location of the protected trees, as well as conditions stated in each approved ministerial tree permit.

Applicable to: All Project components within the cities of Chino, Corona, Eastvale, Norco, and Ontario, and in unincorporated San Bernardino County.

APM PAL-01: Paleontological Resources Management Plan. A Paleontological Resources Management Plan would be developed for construction within areas that have been identified as having a moderate and high sensitivity for paleontological resources, and would identify monitoring and treatment requirements for sensitive paleontological resources of significance. The Paleontological Resources Management Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology.

APM HAZ-01: Implement a Hazardous Materials Management Plan. SCE would prepare and implement a Hazardous Materials Management Plan (HMMP) during construction of the Project. The plan would outline hazardous material handling, use, storage, and disposal requirements, as well as hazardous waste management practices. The plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations. The HMMP would include procedures to address hazardous material storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous material release, containment/control procedures, hazard communication training, Personal Protective Equipment training, and release reporting requirements.

APM HAZ-02: Fire Management Plan. SCE would prepare and implement a Fire Management Plan during construction of the Project. The plan would provide guidance for prevention, control, and extinguishment of fires. The plan also would provide smoking and fire-related rules, storage and parking areas, usage of spark arrestors on construction equipment, and fire-suppression tools and equipment. The plan would also include the following measure:

- Cease work during Red Flag Warning events in areas where grassland or other vegetation would be susceptible to accidental ignition by Project activities that could ignite a fire (such as welding or use of equipment that could create a spark). During Red Flag Warning events, as issued by the National Weather Service, all non-emergency construction and maintenance activities would cease in affected areas.

APM TRA-01: Minimize Use of SR-91. Heavy-duty construction vehicles and equipment would not utilize SR-91 within the City of Corona (from the Green River Road exit to the Pierce Street exit) to access the proposed Circle City Substation site during peak traffic hours throughout the approximately 9-week-long grading period at the substation site. On weekdays between 7:00 a.m. and 9:00 a.m., heavy-duty construction vehicles and equipment would not utilize SR-91 heading west, and would not utilize SR-91 heading east between 4:00 p.m. and 6:00 p.m. Alternate travel routes, such as East 6th Street or Magnolia Avenue, would be used instead during these times.

2.11 Electric and Magnetic Fields Summary

Extremely low frequency (ELF) electric and magnetic fields (EMF) include alternating current (AC) fields and other electromagnetic, non-ionizing radiation from 1 Hz to 300 Hz. Power lines, like electrical wiring and electrical equipment, produce ELF fields at 60 Hz (OSHA, 2016). This EIR does not consider EMF in the context of the CEQA analysis of potential environmental impacts because: [1] there is no agreement among scientists that EMF creates a potential health risk, and [2] there are no defined or adopted CEQA standards for defining health risk from EMF. For example, on behalf of the CPUC, three scientists who work for the California Department of

Health Services (DHS) were asked to review studies by the National Institutes of Environmental Health Sciences Working Group, the International Agency for Research on Cancer, and the British National Radiological Protection Board about possible health problems from electric and magnetic fields from power lines, wiring in buildings, some jobs, and appliances (Neutra et al., 2002). The results of their evaluation noted "important differences between the three DHS reviewers' conclusions" and made no recommendations about actions to be taken to address potential health risks (*Id*.).

However, recognizing that there is a great deal of public interest and concern regarding potential health effects from human exposure to EMF from transmission lines, this document does provide information regarding EMF associated with electric utility facilities and human health and safety. Thus, the EMF information in this EIR is presented for the benefit of the public and decision makers.

Potential health effects from exposure to electric fields from transmission lines (i.e., the effect produced by the existence of an electric charge, such as an electron, ion, or proton, in the volume of space or medium that surrounds it) typically do not present a human health risk since electric fields are effectively shielded by materials such as trees, walls, etc. Therefore, the majority of the following information related to EMF focuses primarily on exposure to magnetic fields (i.e., the invisible fields created by moving charges) from transmission lines.

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remains inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer. Most recently the International Agency for Research on Cancer and the California Department of Health Services both classified EMF as a possible carcinogen.

Presently, there are no applicable federal, state, or local regulations related to EMF levels from power lines or related facilities, such as substations. However, the CPUC has implemented a decision (D.06-01-042) requiring utilities to incorporate "low-cost" or "no-cost" measures for managing EMF from power lines up to approximately four percent of total project cost.

Using the four percent benchmark and otherwise in accordance with "EMF Design Guidelines" filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06- 01-042, SCE would implement low- and no-cost measures to reduce magnetic field levels for the Project. The specific measures are described in the Field Management Plan submitted by SCE in its application for a PTC the Project (SCE, 2015). A copy of the Field Management Plan is included in the EIR as Appendix C.

References – Project Description

California Inter-Utility Coordinating Committee (CIUCC), 2014. California Joint Utility Traffic Control Manual. 6th ed. February 2014.

Colorado River Basin Regional Water Quality Control Board (RWQCB), 2002. Colorado River Basin RWQCB (7) -Waste Acceptance List. [http://www.waterboards.ca.gov/water_issues/programs/land_disposal/walist.shtml] September 24, 2002.

Employment Development Department (EDD), 2017. 2014-2024 Occupations With the Most Job Openings [in the] Riverside-San Bernardino-Ontario Metropolitan Statistical Area (Riverside and San Bernardino Counties). Published January 2017.

Neutra et al., 2002. Raymond Richard Neutra, M.D., Dr., P.H.; Vincent DelPizzo, Ph.D. GDE; and Geraldine M. Lee, Ph.D. An Evaluation of the Possible Risks from Electric and Magnetic Fields (EMFs) from Power Lines, Internal Wiring, Electrical Occupations, and Appliances, June 2002.

Southern California Edison (SCE), 2015. Application of Southern California Edison Company (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV and Proponent's Environmental Assessment for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project. December 4, 2015.

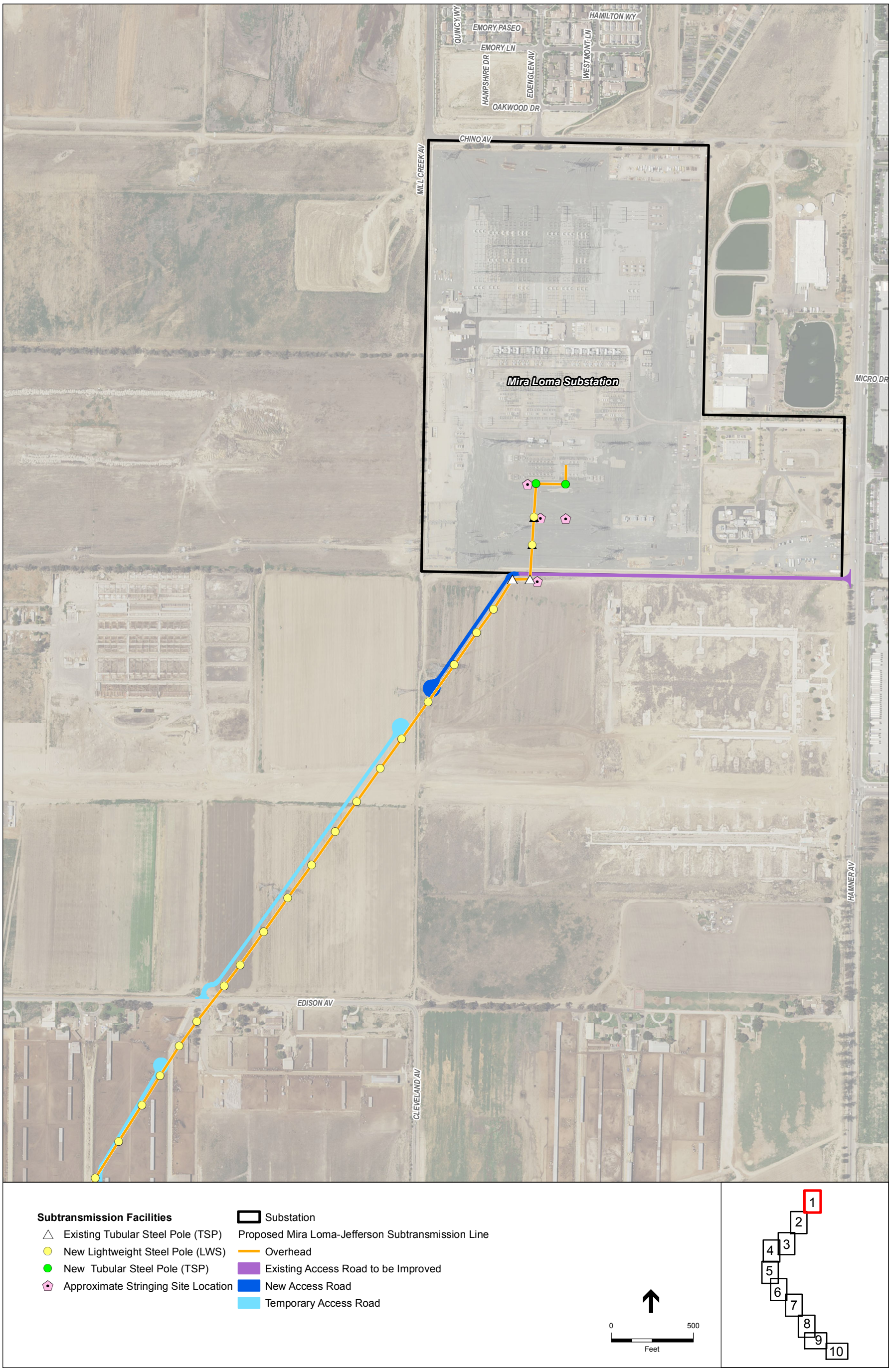
SCE, 2016. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 2 for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, received via e-mail, May 19, 2016.

SCE, 2017a. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 8 for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, received via mail, March 6, 2017.

SCE, 2017b. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 7, Question 3, for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, received via mail, February 22, 2017.

State Water Resources Control Board (SWRCB), 2003. Locations of Class II and III Landfills with Composite Lined Units. Available online at: http://www.waterboards.ca.gov/water_issues/programs/land_disposal/walist.shtml. Map date January 9, 2003.

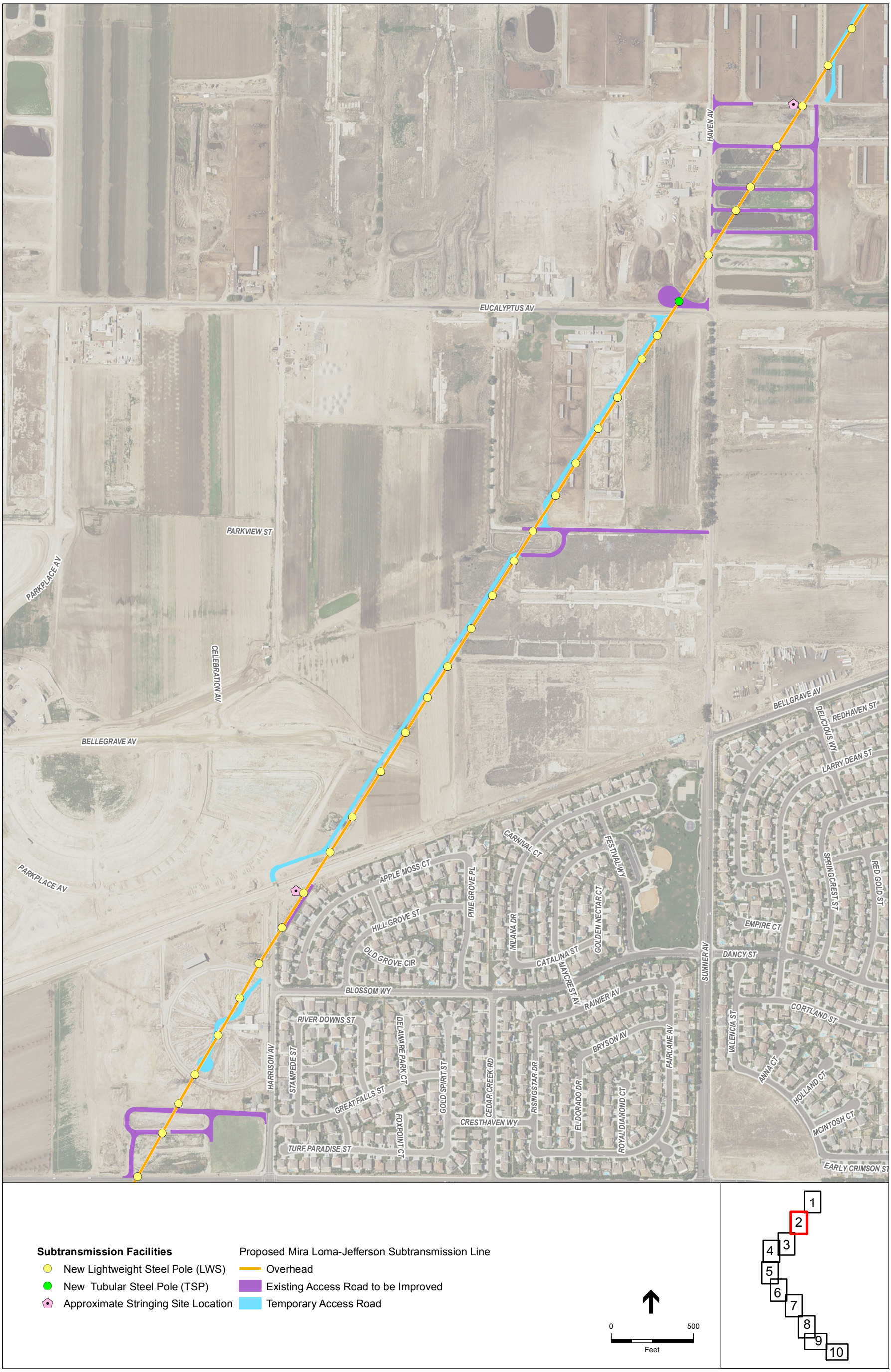
U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), 2016. Extremely Low Frequency (ELF) Radiation. Available online at: www.osha.gov/SLTC/elfradiation/index.html, accessed April 25, 2016.



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

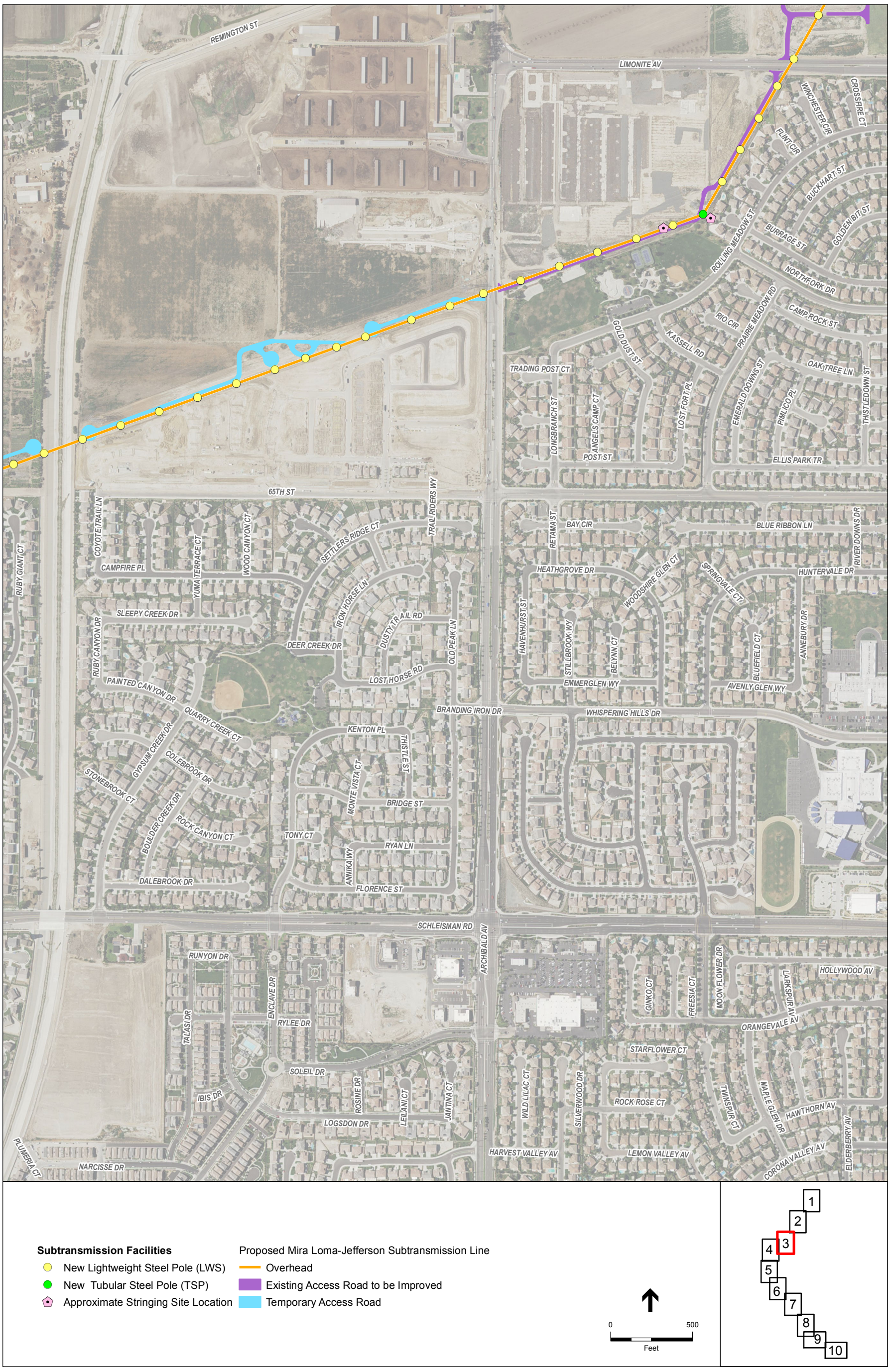
Figure 2-12
Proposed Project Index Map,
Map 1 of 10



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-13
Proposed Project Index Map,
Map 2 of 10



SOURCE: SCE, 2015

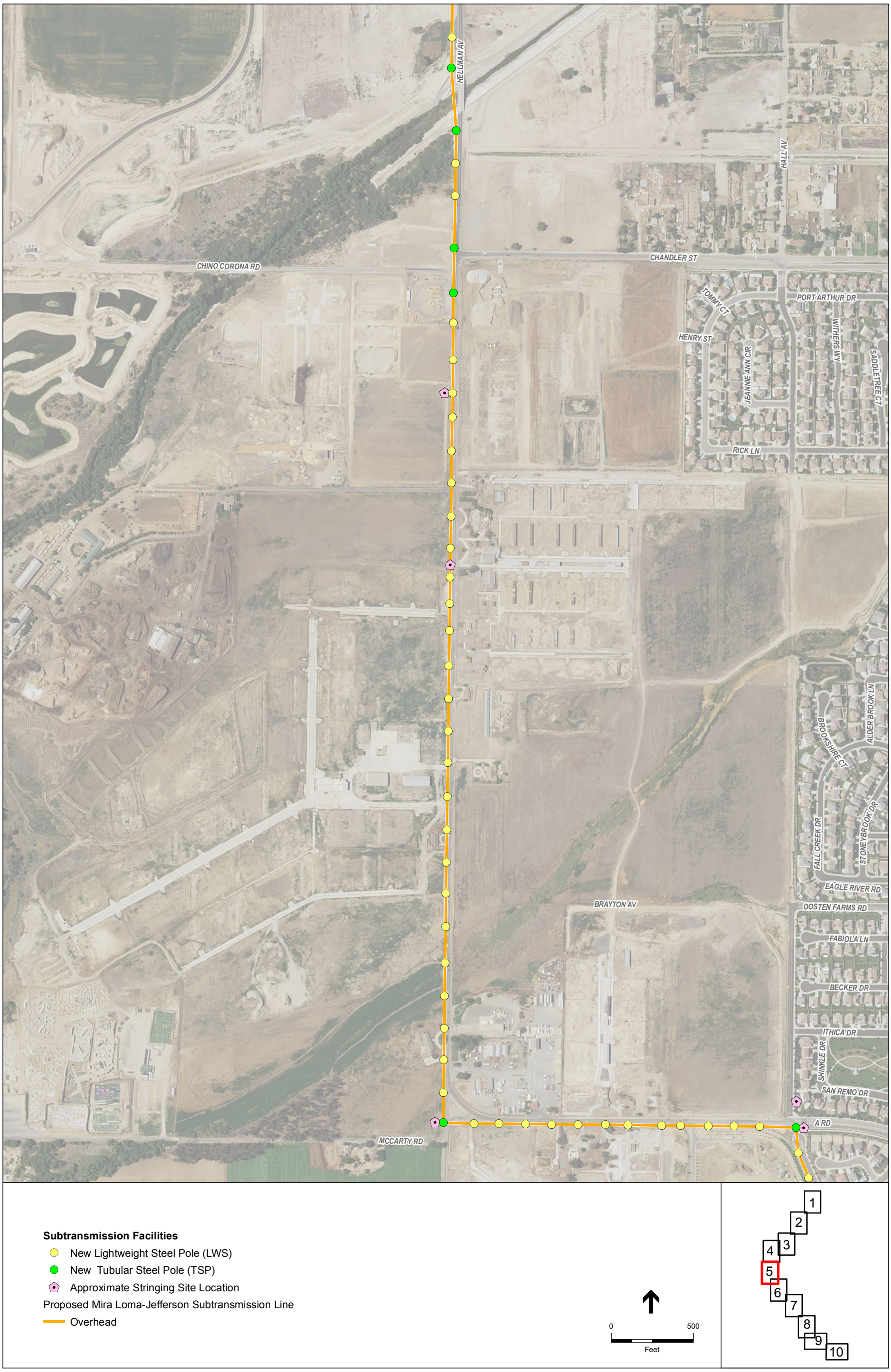
Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-14
Proposed Project Index Map,
Map 3 of 10

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-15
Proposed Project Index Map,
Map 4 of 10



SOURCE: SCE, 2015

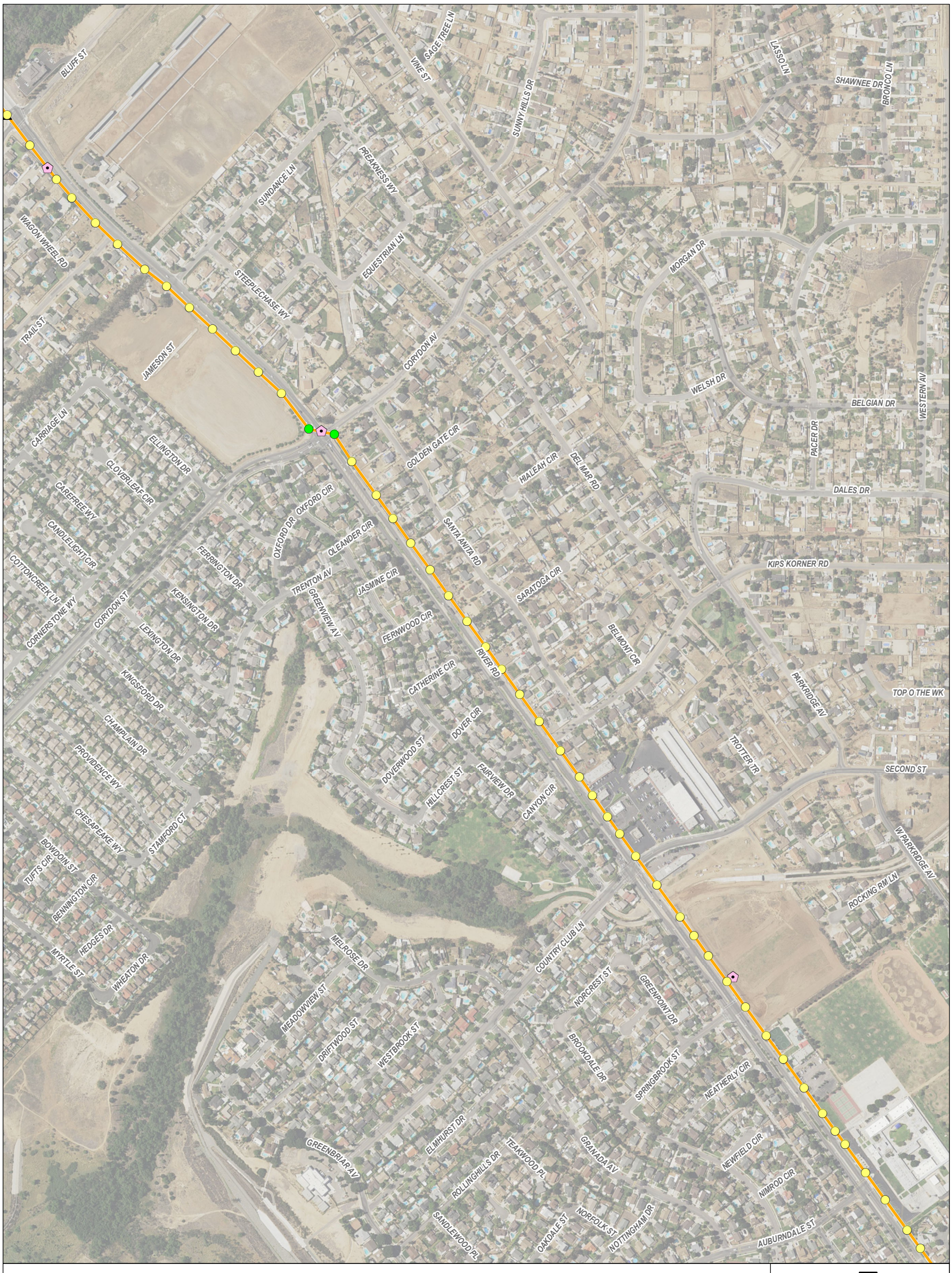
Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-16
Proposed Project Index Map,
Map 5 of 10

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-17
Proposed Project Index Map,
Map 6 of 10



Subtransmission Facilities

- New Lightweight Steel Pole (LWS)
- New Tubular Steel Pole (TSP)
- Approximate Stringing Site Location

Proposed Mira Loma-Jefferson Subtransmission Line

- Overhead

0 500
Feet

1 2 3 4 5 6 7 8 9 10

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-18
Proposed Project Index Map,
Map 7 of 10

Subtransmission Facilities

- New Lightweight Steel Pole (LWS)
- New Wood Pole
- New Tubular Steel Pole (TSP)
- Approximate Stringing Site Location

Substation

Proposed Mira Loma-Jefferson Subtransmission Line

- Overhead
- Underground

Proposed Source Line

- Overhead
- Underground

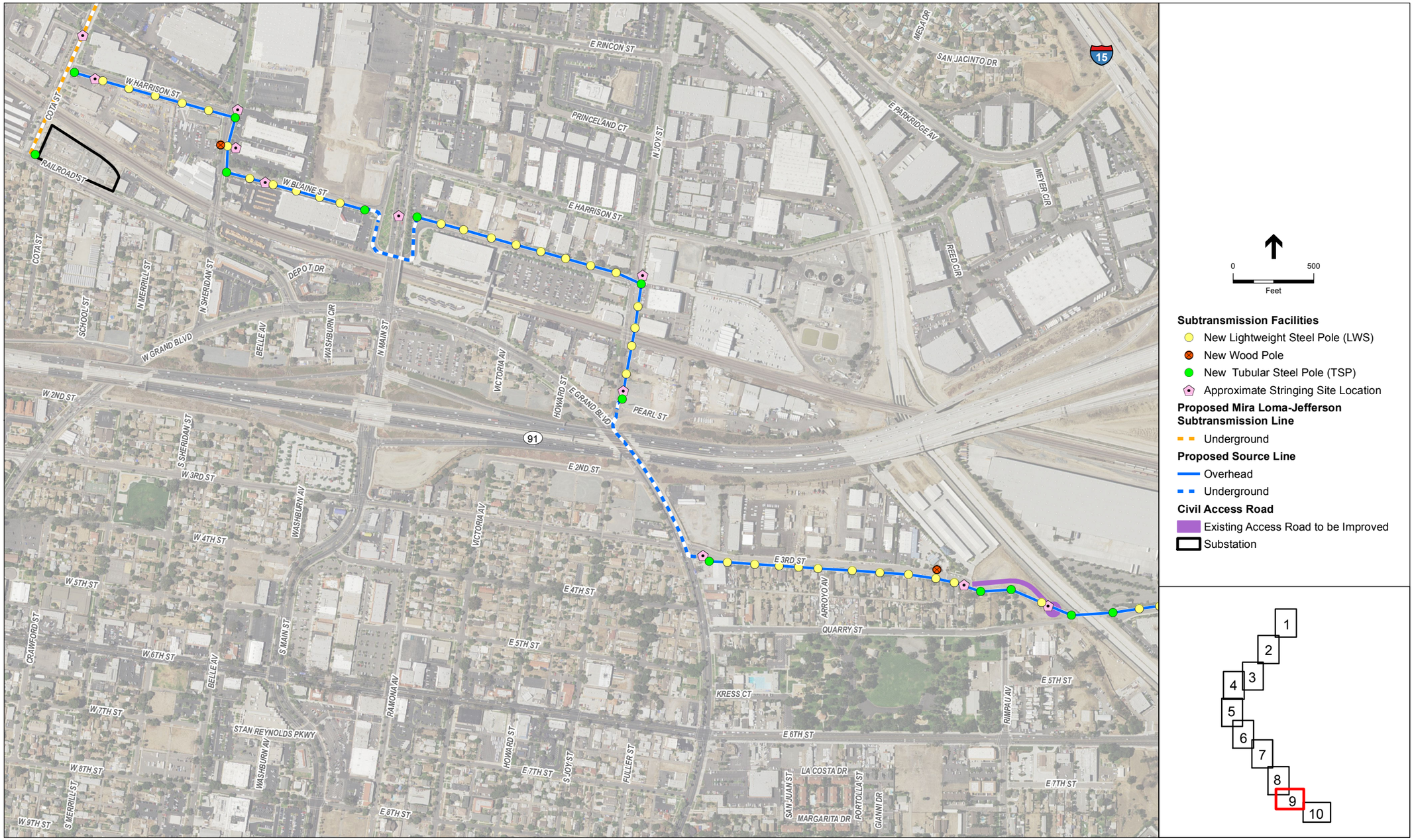
0 500 Feet

1 2 3 4 5 6 7 8 9 10

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

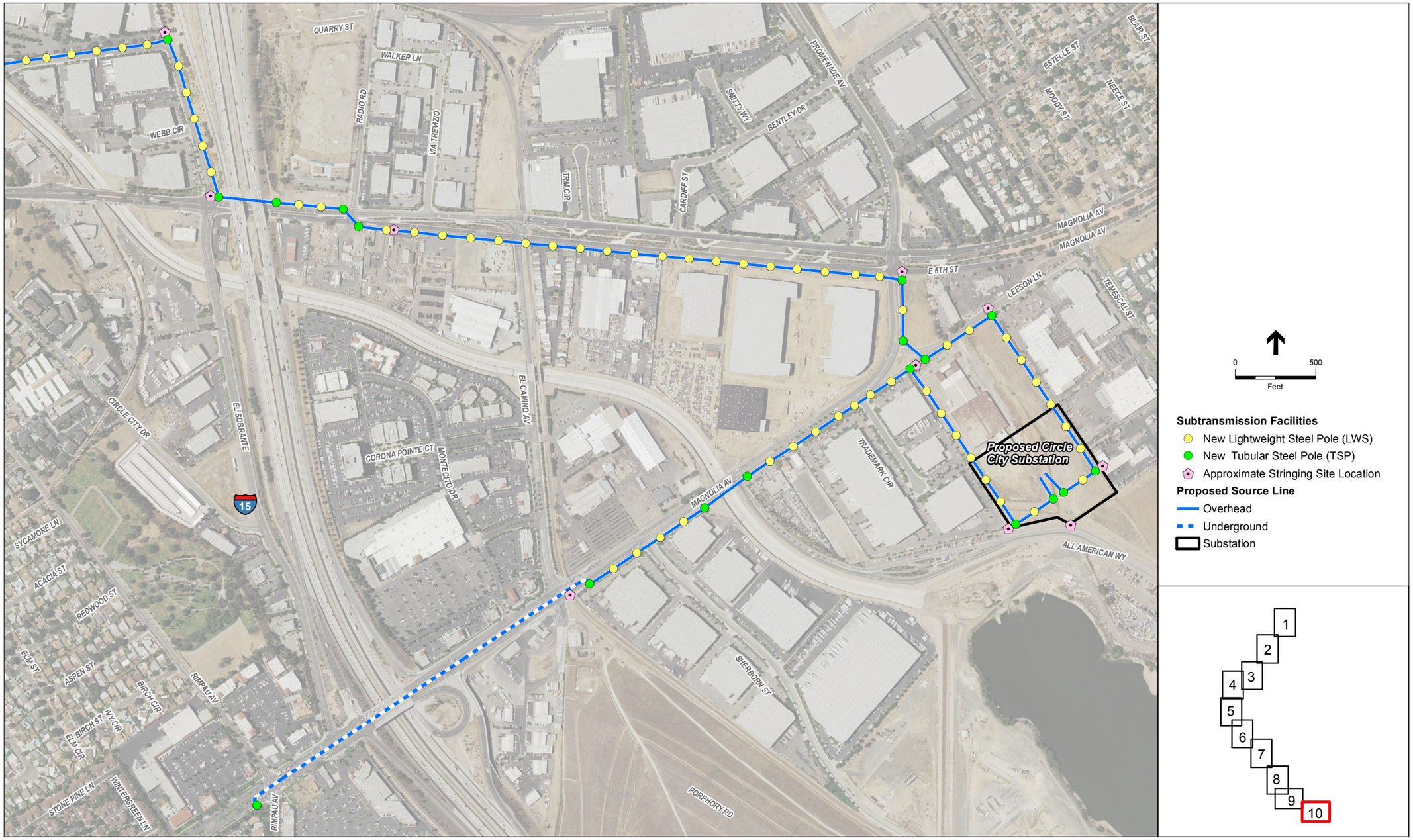
Figure 2-19
Proposed Project Index Map,
Map 8 of 10



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 2-20
Proposed Project Index Map,
Map 9 of 10



SOURCE: SCE, 2015

Figure 2-21
Proposed Project Index Map,
Map 10 of 10

CHAPTER 3
Project Alternatives

The California Environmental Quality Act (CEQA) requires an Environmental Impact Report (EIR) to describe a reasonable range of alternatives to a proposed project that would feasibly attain most of the basic objectives of the project while substantially reducing or eliminating any of its significant environmental effects. CEQA also requires an EIR to evaluate a "no project" alternative. This chapter describes the process that was used to identify and screen alternatives to the Project for consideration by the CPUC, explains why some alternatives were eliminated from further consideration, and describes those alternatives that were carried forward for further analysis in this EIR. The environmental impacts of the alternatives carried forward are analyzed and compared to the impacts of the Project in Chapter 4, *Environmental Analysis*. The results of the comparative analysis are summarized in Chapter 5, *Comparison of Alternatives*, which compares the conclusions of the impact analyses for each of the alternatives against the conclusions for the Project.

3.1 CEQA Context for the Consideration of Alternatives

The CEQA Guidelines provide the following guidance for discussing project 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 (CEQA Guidelines §15126.6(a)).
- An EIR is not required to consider alternatives that are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly (§15126.6(b)).
- The range of alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (§15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project (§15126.6(d)).

CEQA Guidelines Section 15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." Factors considered in addressing the

feasibility of potential alternatives for the Project included site suitability; economic viability; availability of infrastructure; statutory, regulatory, and other legal limitations; jurisdictional boundaries (e.g., the Applicant's service territory), and whether the Applicant has or could obtain access to potential alternative sites. None of these factors alone established a fixed limit on the scope of alternatives (CEQA Guidelines §15126.6(f)).

CEQA requires an EIR to evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving it (CEQA Guidelines §15126.6(e)). The No Project Alternative analysis evaluates the existing conditions at the time the Notice of Preparation was published as well as what reasonably would be expected to occur in the foreseeable future if the Project were not approved.

3.2 Alternatives Development and Screening Process

To develop a reasonable range of alternatives for analysis, the CPUC followed these steps:

- Developed an understanding of the Project, identified the basic objectives of the Project, and considered the Project's significant effects;
- Considered input received from the public during and after the scoping process that related to alternatives to the Project;
- Evaluated electrical engineering data projections for the Mira Loma System;
- Identified and evaluated alternative locations to the proposed substation and subtransmission line alignments;
- Identified and evaluated other technologies that may have the potential to achieve the project objective(s) while avoiding or substantially lessening any of the significant effects of the Project;
- Identified and evaluated whether alternative approaches, such as conservation and demand side management or distributed generation, could provide an alternative to the Project; and
- Considered the scenario of not constructing the Project, i.e., the No Project Alternative.

The Project is described in Chapter 2, *Project Description*. Project purpose and objectives are presented in Chapter 1, *Introduction*, Section 1.3, and again below in Section 3.2.2. The process used to identify and screen alternatives to the Project is described in the following sections.

3.2.1 Alternatives Screening Methodology

The screening of alternatives to the Project followed a three step process:

Step 1: Describe each alternative in sufficient detail to allow comparison of its impacts with those of the Project.

Step 2: Evaluate each alternative using CEQA criteria:

- Does the alternative meet most of the basic objective(s) of the Project?

- Is the alternative potentially feasible economically, environmentally, legally, socially, and technically?
- Does the alternative avoid or substantially lessen any significant effects of the Project (including consideration of whether the alternative could create significant effects potentially greater than those of the Project)?

Step 3: Determine the suitability of each alternative for full analysis in the EIR.

3.2.2 Consistency with Project Purposes and Objectives

In the Proponent's Environmental Assessment, the Applicant identified the following purposes and objectives for the Project (SCE, 2015):

- Serve current and long-term peak electrical demand requirements in the electrical needs area (ENA) as soon as possible after receipt of applicable permits;
- Enhance electrical system reliability by adding transformation and circuitry to serve increased electrical demand and by increasing operational flexibility;
- Construct the new electrical facilities in close proximity to the electrical demand to effectively and efficiently serve the ENA;
- Meet the proposed Project need while minimizing environmental impacts;
- Meet the proposed Project need in a cost-effective manner; and
- Design and construct the proposed Project in conformance with SCE's current engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.

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" (§15126.6(b)). Therefore, it is not required that each alternative meet all of the Project's objectives. Upon consideration of the Applicant's objectives, electrical demand projections, and other laws and regulations, this EIR identifies the following as the CPUC's basic CEQA objectives:

- **Subtransmission Service Objective** – Maintain electrical system reliability by addressing overloads on the Mira Loma-Corona-Jefferson and Mira Loma-Corona 66 kV subtransmission lines that could occur under peak electrical demand conditions during the 2017 to 2026 forecast period; and
- **Distribution Service Objective** – Maintain electrical system reliability by ensuring ~~Ensure~~ that the Corona, Jefferson, and Chase substations do not exceed capacity under peak electrical demand conditions through the 2017 to 2026 forecast period.

The CPUC considers these two CEQA objectives to be the underlying purpose for the proposed Project. Under the proposed Project, the Subtransmission Service Objective would be addressed by constructing the proposed Mira Loma-Jefferson subtransmission line and associated facilities; and the Distribution Service Objective would be addressed by the construction of the Circle City Substation, its source lines, and other associated facilities.

In order to assess the ability of alternatives to maintain electric reliability by meeting forecasted electrical demand and maintaining sufficient voltage, the following factors were considered:

- 10-year planning period demand growth projections based on estimated growth rates for the Corona, Chase, and Jefferson substation service areas; and
- power flow studies for the Mira Loma Subtransmission System.

Based on the current 10-year ENA forecast for the period of 2017 through 2026, the Subtransmission Service Objective needs to be addressed by 2018[1] and the Distribution Service Objective needs to be addressed by 2024 (SCE, 2017a; and 2017b).

Each of the alternatives considered is designed to address at least one of these basic objectives. Therefore, each project alternative would have to meet at least one of these two objectives in order to be considered a viable alternative to the proposed Project. For discussion of the various alternative options relative to the Project objectives, refer to Section 3.3.1, *Alternatives Evaluated in Detail in this EIR*.

3.2.3 Potential Feasibility

An EIR must "consider a reasonable range of potentially feasible alternatives…" (CEQA Guidelines §15126.6(a).) CEQA Guidelines Section 15364 defines "feasible" as:

> *. . . capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors*.

The alternatives screening analysis focused on the following primary feasibility criteria:

- **Legal:** Whether the alternative would require siting on lands with legal protection or would require activities that contradict laws or regulations.
- **Technological:** Whether the alternative can be implemented with available technology and given any space constraints.
- **Economic:** Whether the alternative is exceedingly costly such that implementation could not occur or that it would be impractical to proceed with the project.
- **Environmental:** Whether the alternative would cause substantially greater environmental damage than the proposed project so that the alternative is clearly inferior from an environmental standpoint.

In addition, CEQA requires that the Lead Agency consider other feasibility criteria including site suitability, economic viability, availability of infrastructure, general plan consistency, other

[1] It is acknowledged that the Subtransmission Service Objective will not be permanently addressed by 2018 given that construction of the Mira Loma-Jefferson Subtransmission Line is not proposed to begin until the third quarter of 2020. Until a permanent solution is put in place, SCE would implement a temporary system operating procedure by opening the circuit breaker at Corona Substation on the Corona segment of the Mira Loma-Corona-Jefferson 66 kV Subtransmission Line in the event of an overload. This would not be a permanent solution because it would result in two 66 kV lines being out of service, which would reduce the reliability of the system (SCE, 2016b).

regulatory limitations, jurisdictional boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in the EIR (CEQA Guidelines §15126.6(f)).

If an alternative was found not to meet any one of the primary feasibility criteria, the CPUC deemed it infeasible without reviewing whether it met the other feasibility criteria. This screening analysis does not focus on relative economic factors or costs of the alternatives (as long as they are found to be potentially economically viable) because the CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may be costlier (CEQA Guidelines §15126.6(b)).

3.2.4 Potential to Eliminate Significant Environmental Effects

CEQA requires an alternative to "avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines §15126.6(a)). Alternatives that would not substantially reduce or avoid a significant effect of the proposed project are dismissed from further consideration. CEQA does not require the alternatives discussion to include as much detail as the analysis for the proposed project, but the EIR must contain "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." (CEQA Guidelines §15126(d)).

The Project would result in significant and unavoidable environmental effects on aesthetics, air quality, ~~hazards,~~ and noise. No other significant impacts that would be associated with the Project have been identified that cannot be reduced to a less-than-significant level. Based on the methodology described above, each potential alternative was evaluated for its ability to meet most of the basic Project objectives, its potential feasibility, and its ability to avoid or substantially lessen one or more of the significant effects of the Project without creating significant unmitigable impacts of its own. **Table 3-1**, *Summary of Significant Unavoidable Environmental Impacts of the Project,* provides a summary of impacts by resource section. These are identified as Class I environmental impacts for analysis purposes.

TABLE 3-1
SUMMARY OF SIGNIFICANT UNAVOIDABLE (CLASS I) ENVIRONMENTAL IMPACTS OF THE PROJECT

Issue Area	Impact
Aesthetics	• Adverse effects to scenic vistas resulting from new subtransmission and source lines and poles. • Degradation of the existing visual character and quality resulting from new subtransmission and source lines and poles.
Air Quality	• Construction activities would generate nitrogen oxides (NO_x) and fine particulate matter (PM_{10}) emissions that could contribute substantially to a violation of an air quality standard. • Construction activities would result in emissions of PM_{10} and nitrogen oxides that would be cumulatively considerable. • Construction activities would expose sensitive receptors to harmful pollutant concentrations of $PM_{2.5}$ and PM_{10}.
Noise	• Construction activities would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations.

For informational purposes, **Table 3-2**, *Summary of Less than Significant with Mitigation Environmental Impacts of the Project*, provides a summary of the significant impacts that can be reduced to less-than-significant levels with incorporation of mitigation measures by resource section. These are identified as Class II environmental impacts for analysis purposes.

TABLE 3-2
SUMMARY OF LESS THAN SIGNIFICANT WITH MITIGATION (CLASS II) ENVIRONMENTAL IMPACTS OF THE PROJECT

Issue Area	Impact
Agriculture and Forestry Resources	• Construction activities would result in temporary impacts to designated Farmland. • The Project would permanently convert Farmland to non-agricultural use. • The Project could involve other changes in the existing environment that could result in the conversion of farmland to non-agricultural land.
Air Quality	• Construction activities could expose local sensitive receptors to coccidioides immitis (Valley fever-causing) spores. • Construction activities could expose local sensitive receptors to emissions of diesel particulate matter.
Biological Resources	• Construction activities could result in adverse impacts to special-status plants. • Construction activities could result in adverse impacts to California Species of Special Concern reptiles and amphibians. • Construction activities could result in adverse impacts to Riverside fairy shrimp and vernal pool fairy shrimp. • Construction activities could result in adverse impacts to special-status fish. • Construction activities could result in adverse impacts to least Bell's vireo, Southwestern willow flycatcher, yellow-billed cuckoo, and their habitats. • Construction activities could temporarily result in adverse impacts to sensitive natural communities, such as willow riparian forest, coastal sage scrub, and grassland. • Construction activities could result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to U.S. Army Corps of Engineers (USACE) jurisdiction under the federal Clean Water Act (CWA), and the potential loss and degradation of wetland habitats protected under state and local regulations. • The Project activities could disturb special-status bats or maternity bat roost.
Cultural Resources	• Implementation of the Project could cause a substantial adverse change in the significance of previously unrecorded historical resources. • Implementation of the Project could cause a substantial adverse change in the significance of previously unrecorded archaeological resources. • Project implementation could directly destroy a unique paleontological resource. • Project construction could result in damage to previously unidentified human remains. • Implementation of the Project could cause a substantial adverse change in the significance of previously unknown tribal cultural resources.
Geology and Soils	• The Project would result in increased risk of substantial adverse effects involving liquefaction. • The Project could result in soil erosion or loss of topsoil. • Portions of the Project alignment would be located on soil that could become unstable as a result of the Project. • Portions of the Project would be located on expansive soil, creating risks to life and property.

TABLE 3-2 (CONTINUED)
SUMMARY OF LESS THAN SIGNIFICANT WITH MITIGATION (CLASS II)
ENVIRONMENTAL IMPACTS OF THE PROJECT

Issue Area	Impact
Hazards and Hazardous Materials	• Construction, operation, and maintenance of the Project would require use of hazardous materials that could pose a potential hazard to the public or environment. • Construction of the Project could release previously unidentified hazardous materials into the environment. • Construction activities could expose students to harmful pollutant concentrations of PM_{10}. • Construction, operation, and maintenance of the Project could result in an aviation safety hazard for people residing or working in the project area. • Construction of the Project could interfere with an emergency response or evacuation plan. • Construction could increase the probability of a wildfire. • Induced currents associated with operation of the Project could generate perceptible currents or small electrical shocks.
Hydrology and Water Quality	• The Project would temporarily alter drainage patterns, including in the Santa Ana River, and would permanently alter drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation.
Noise	• Construction activities could conflict with local general plan policies that pertain to construction activity noise.
Transportation and Traffic	• Construction could adversely affect traffic and transportation conditions. • Changes in air traffic patterns and increased air traffic levels could result in safety risks. • Traffic safety hazards could increase for vehicles, bicyclists, and pedestrians on public roadways. • Construction activities could result in delays for emergency vehicles on roadways in the area. • Alternative modes of transportation (public transit, bicycle or pedestrian) could be adversely affected during construction.

3.3 Summary of Screening Results

Table 3-3, *Summary of Alternatives Screening Analysis for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project*, provides a composite list of the alternatives considered, and the results of the screening analysis with respect to the criteria findings for consistency with Project objectives, feasibility, and effectiveness in reducing significant environmental impacts of the Project, while not causing additional environmental impacts. Alternatives carried forward for analysis in the EIR are listed below in Section 3.3.1. Alternatives eliminated from further consideration follow in Section 3.3.2.

3.3.1 Alternatives Evaluated in Detail in this EIR

Several alternatives to the Project have been selected for detailed analysis in the EIR, including the No Project alternative, as required by CEQA. The alternatives are organized based on whether they primarily address the Subtransmission Service Objective or the Distribution Service Objective. The alternatives are listed below and are described in detail in Section 3.4:

- Alternative A: No Project;

TABLE 3-3
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS

Alternative	Proposed Project Objectives Criteria	Feasibility Criteria	Environmental Criteria (Class I Impacts*)
Passes Screening			
Alternative B*: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation*. This alternative would remove the Circle City Substation and associated source lines and communication lines from the Project. Only the Mira Loma-Jefferson subtransmission line and associated facilities would be constructed.	Meets the Project's Subtransmission Service Objective, but not the Distribution Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics, air quality, and noise impacts.
Subtransmission Line Alternatives			
Alternative C1*: Underground 66 kV Subtransmission Line along Hellman Avenue*. This segment of the Mira Loma-Jefferson subtransmission line would be installed underground instead of overhead. Alternative C1 also includes construction of Circle City Substation and the Databank Source Lines (and/or associated alternatives).	Meets the Project's Subtransmission Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics impacts.
Alternative C2: *66 kV Subtransmission Line along Archibald Avenue.* This alternative would replace a segment of the Mira Loma-Jefferson subtransmission line. Alternative C2 also includes construction of Circle City Substation and the Databank Source Lines (and/or associated alternatives).	Meets the Project's Subtransmission Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics impacts, increases significant noise impacts.
Alternative C3: *66 kV Subtransmission-Level Battery Storage*. Replace the need for the proposed subtransmission line by installing up to three subtransmission-level battery storage facilities in the ENA. This alternative would replace the Mira Loma-Jefferson subtransmission line. Alternative C3 also includes construction of Circle City Substation and the Databank Source Lines (and/or associated alternatives).	Meets the Project's Subtransmission Service Objective.	Meets feasibility criteria.	Additional significant aesthetics and noise impacts and increases air quality impacts, but avoids aesthetics and noise impacts associated with the proposed Mira Loma-Jefferson subtransmission line.
Substation Alternatives			
Alternative D1: *12 kV Distribution-Level Battery Storage.* This battery storage facility would replace the proposed Circle City Substation and source lines. Alternative D1 also includes construction of the Mira Loma subtransmission line.	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics, air quality, and noise impacts.
Alternative D2: *66/12 kV Substation Site Alternative.* The alternative substation site is located on an approximately 12.5-acre, privately owned parcel just east of the proposed substation site. Alternative D2 also includes construction of the Mira Loma subtransmission line, the sources lines, or associated alternatives.	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Increases air quality and noise impacts.

TABLE 3-3 (CONTINUED)
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS

Alternative	Proposed Project Objectives Criteria	Feasibility Criteria	Environmental Criteria (Class I Impacts*)
Substation Source Line Alternatives			
Alternative E1: *Quarry Street 66 kV Source Lines Segment*. This segment of the Pedley Source Lines would be on Quarry Street instead of 3rd Street. Alternative E1 also includes construction of Circle City Substation, Databank Source Lines, and the Mira Loma-Jefferson subtransmission line (and/or associated alternatives).	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Meets environmental criteria. Does not reduce significant environmental impacts, but trades short-term construction impacts and long-term aesthetics impacts along 3rd Street for impacts along Quarry Street.
Alternative E2: *Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation*. This segment of the Pedley Source Lines would be installed underground instead of overhead. Alternative E2 also includes construction of Circle City Substation, Databank Source Lines, and the Mira Loma-Jefferson subtransmission line (and/or associated alternatives).	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics impacts; increases significant air quality impacts.
Alternative E3: *Southern 66 kV Source Lines Alignment*. This alternative would replace the Databank Source Lines. Alternative E3 also includes construction of Circle City Substation, ~~Databank~~ Pedley Source Lines, and the Mira Loma-Jefferson subtransmission line (and/or associated alternatives).	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Increases significant aesthetics and noise impacts.
Alternative E4: *Databank 66 kV Source Lines Only*. This alternative would eliminate the Pedley Source Lines component of the Project. Alternative E4 also includes construction of Circle City Substation, Circle City to Corona fiber line, and the Mira Loma-Jefferson subtransmission line (and/or associated alternatives).	Meets Project Distribution Service Objective.	Meets feasibility criteria.	Meets environmental criteria; reduces significant aesthetics, air quality, and noise impacts.
Fails Screening			
Alternative C4: *66 kV Subtransmission Line along Interstate 15 ROW*. This alternative would replace all but 0.5 mile of the Mira Loma-Jefferson subtransmission line. Alternative C4 also includes construction of Circle City Substation and the Databank Source Lines (and/or associated alternatives).	Meets the Project's Subtransmission Service Objective.	**Fails.** This alternative would not be consistent with the Garamendi Principles because it would locate a new subtransmission line ROW where one currently does not exist.	**Fails.** This alternative would substantially increase significant impacts relative to aesthetics due to increased exposure to drivers along I-I5. Air quality impacts would be reduced, but would continue to be significant and unavoidable.
Alternative D3: *12 kV Distribution-Level Battery Storage with Circle City Substation.* This alternative includes a battery storage facility combined with the proposed Circle City Substation and source lines. Alternative D3 also includes construction of the Mira Loma subtransmission line.	Meets Project Distribution Service Objective.	Meets feasibility criteria.	**Fails.** Does not reduce significant environmental impacts associated with the Project. Construction would increase air quality emissions and the associated significant impact related to exceedances of ambient air quality standards.

TABLE 3-3 (CONTINUED)
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS

Alternative	Proposed Project Objectives Criteria	Feasibility Criteria	Environmental Criteria (Class I Impacts*)
Fails Screening (cont.)			
Alternative F: *Demand Side Management.*	**Fails.** Would not achieve either of the objectives for the proposed Project.	**Fails.** These programs are not feasible on a scale that would be suitable to replace the proposed Project within a reasonable period of time. Thus, these measures are not technologically feasible.	Meets environmental criteria.
Alternative G: Third Party Renewable and Distributed Energy Generation Resources.	**Fails.** The potential and timing of sufficient distributed generation within the ENA is uncertain, and cannot be relied onto meet either of the Project's objectives within the required timeframe.	**Fails.** Local renewable or distributed resources would require upgraded or new subtransmission and transmission infrastructure, which is not feasible to implement for the proposed Project within a reasonable period of time. In addition, the potential, timing, and siting of distributed generation within the ENA is uncertain. Thus, these measures are not technologically feasible.	**Fails.** Sizable geothermal, wind, or solar facilities would potentially result in greater environmental impacts for aesthetics, air quality, cultural, noise, and biological resources, and would occur in addition to the impacts from upgraded or new subtransmission infrastructure.

Subtransmission Service Objective Alternatives

- Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation;
- Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue;
- Alternative C2: 66 kV Subtransmission Line along Archibald Avenue; and
- Alternative C3: 66 kV Subtransmission-Level Battery Storage.

Distribution Service Objective Alternatives

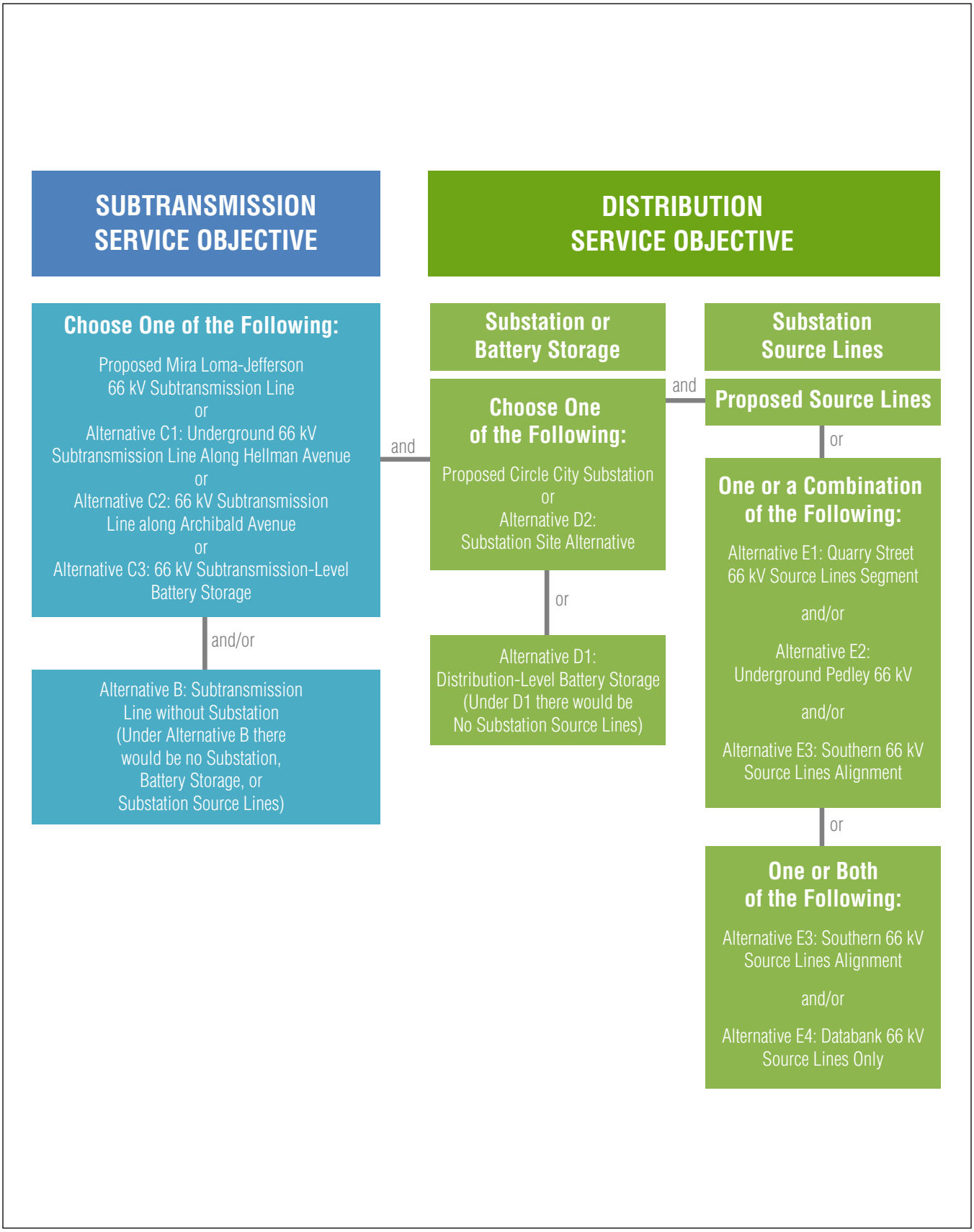
- Alternative D1: 12 kV Distribution-Level Battery Storage;
- Alternative D2: 66/12 kV Substation Site Alternative;
- Alternative E1: Quarry Street 66 kV Source Lines Segment;
- Alternative E2: Underground Pedley 66 kV Source Lines from Interstate 15 to Circle City Substation;
- Alternative E3: Southern 66 kV Source Lines Alignment; and
- Alternative E4: Databank 66 kV Source Lines Only.

The CPUC may consider various combinations of the above alternatives when deciding whether or not to approve the proposed Project or one or more of the alternatives to address the identified objectives. The three main components of the Project include: the subtransmission line (which achieve the Subtransmission Service Objective) the substation, and the substation source lines (which achieve the Distribution Service Objective). **Figure 3-1**, *Project Alternative Options,* provides an illustration of the various project alternatives relative to the Project objectives.

3.3.2 Alternatives Eliminated from EIR Consideration

As summarized in **Table 3-3**, these alternatives have been eliminated due to failure to meet Project objectives, infeasibility, and/or because the alternative would have greater environmental impacts than the Project. The rationale for elimination of each alternative is summarized in Table 3-3 and is described in greater detail in Section 3.5. The alternatives that have been eliminated through the alternative screening process from full analysis in the EIR are as follows:

- Alternative C4: 66 kV Subtransmission Line along Interstate 15 ROW;
- Alternative D3: 12 kV Distribution-Level Battery Storage with Circle City Substation;
- Alternative F: Demand Side Management;
- Alternative G: Third Party Renewable and Distributed Energy Generation Resources.



Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 3-1
Project Alternative Options

3.4 Alternatives Evaluated in this EIR

3.4.1 Alternative A: No Project

Under Alternative A, the proposed Circle City Substation and associated source lines, the Mira Loma-Jefferson Subtransmission Line, and associated communication and electrical infrastructure would not be constructed. The subtransmission capacity serving the ENA would remain unchanged. The distribution system serving the ENA would continue to be served by the three existing substations and their collective capacity would remain unchanged.

Alternative A would fail to meet the Distribution Service Objective and as a result, the ENA would potentially experience a shortage of electricity and the electrical distribution system could become vulnerable to upset starting year ~~2024~~ 2023. The distribution system would experience system-wide power flow and reliability problems due to overloading as new demand is added to the system. This could result in curtailed generation, thermal overload, and blackouts.

Alternative A would fail to meet the Subtransmission Service Objective by failing to increase the capacity of the subtransmission delivery infrastructure.

If Alternative A is implemented, SCE would implement operating procedures to compensate for the anticipated shortfall in the supply of subtransmission voltage electric power for the ENA. Operating procedures to relieve base case thermal overloads of the subtransmission system forecasted as early as ~~2018~~ 2020 would include transferring load between the substations via distribution circuits, load dropping on one or more distribution circuits, or disconnecting entire substations from the Mira Loma ~~Vista~~ System. The latter two operating measures would cause extended outages within the ENA until the base case thermal overload conditions could be eliminated (SCE, 2017b; and 2018a).

Coupled with the aforementioned operational actions, SCE would likely be required to implement demand-side management (DSM) programs to reduce customer energy consumption and overall electricity use, including shifting energy use to off-peak periods. The CPUC supervises various DSM programs administered by the regulated utilities, and many municipal electric utilities have their own DSM programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation. However, reducing demand is an essential part of SCE's management of the electric grid with or without the proposed Project and is not directly related to the Project.

3.4.2 Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation

Implementation of Alternative B would include construction and operation of the Mira Loma-Jefferson Subtransmission Line and associated facilities as proposed (described in Section 2.5.5.4, *Mira Loma-Jefferson 66 kV Subtransmission Line*), but would not include construction and operation of the proposed Circle City Substation or its associated facilities. Although this alternative would address thermal overloads of the subtransmission system, the ENA would

potentially experience a shortage of distribution voltage electricity and the electrical distribution system could become vulnerable to upset starting year 2024. The distribution system would experience system-wide power flow and reliability problems due to overloading as new demand is added. This could result in curtailed generation, thermal overload, and blackouts.

3.4.3 Subtransmission Line Alternatives

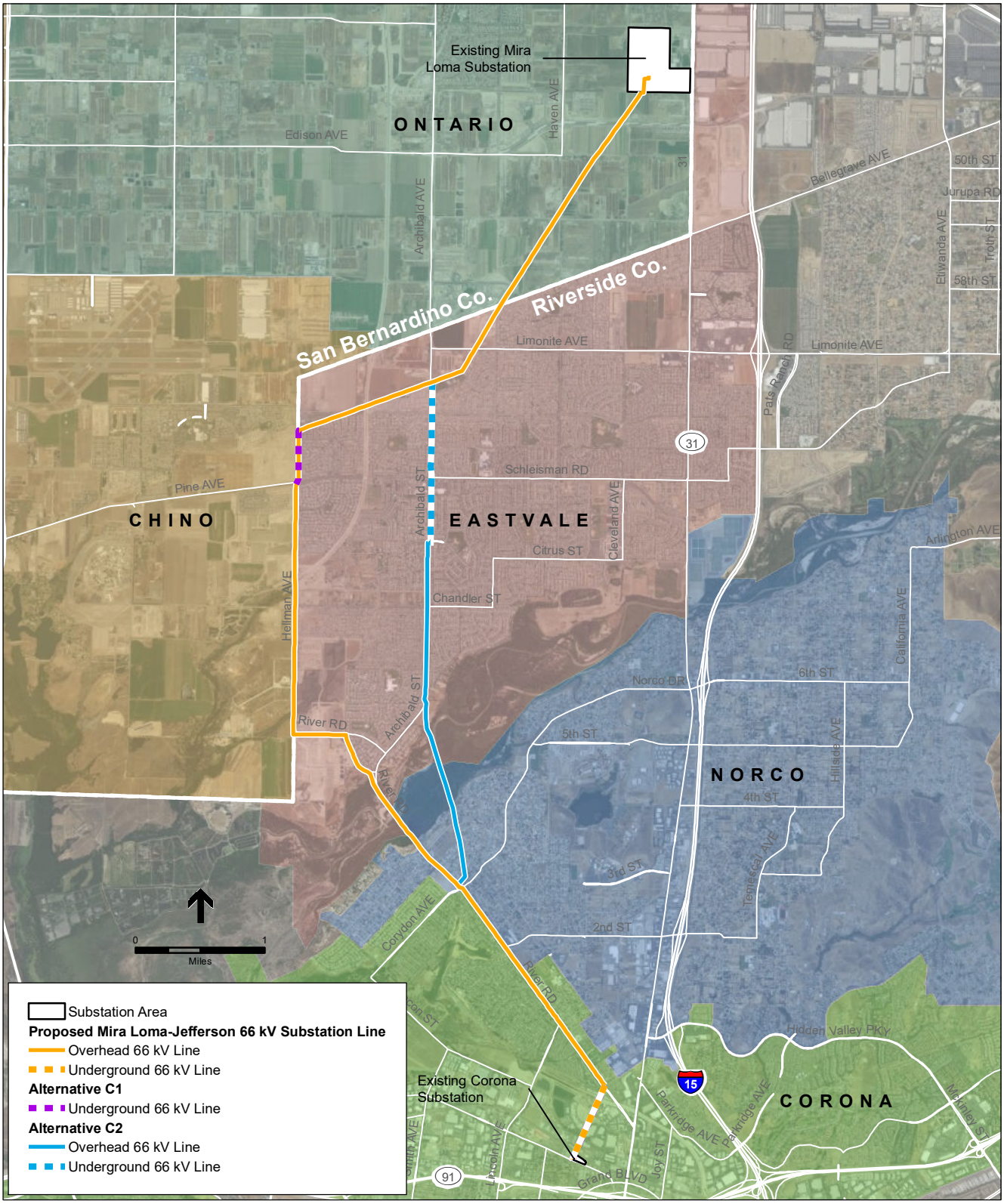
This EIR includes evaluation of two subtransmission line alignment alternatives (C1 and C2) and one alternative which would replace the need for the subtransmission line with battery storage facilities (C3). The two subtransmission line alignment alternatives would originate at SCE's existing Mira Loma Substation and connect to the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line near SCE's existing Corona Substation. Similar to the proposed Project, each of these two alternatives would convert the existing single-circuit Mira Loma-Corona-Jefferson subtransmission line to the double-circuited Mira Loma–Jefferson and the Mira Loma-Corona subtransmission lines. The alternative alignments are shown in **Figure 3-2a**, *66 kV Subtransmission Line Alternatives C1 and C2* and **Figure 3-2b**, *66 kV Subtransmission Line Alternative C3*.

3.4.3.1 Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Similar to the proposed Project, Alternative C1 would construct 10.9 miles of Subtransmission connecting the Mira-Loma Substation to the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line near Corona Substation. The Alternative C1 subtransmission line would be the same as the proposed Project except for a 0.4-mile-long segment, which would be constructed underground versus overhead as in the proposed Project. The 0.4-mile-long underground conduit installation would occur within Hellman Avenue. The underground line would transition from overhead to underground near the southwest corner of American Heroes Park at Hellman Avenue and continue south underground within Hellman Avenue to Pine Avenue/Schleisman Road, where it would transition to overhead at the southwest corner of Pine Avenue and Hellman Avenue. For a description of activities that would be associated with installing the subtransmission below ground, refer to Section 2.6.7, *Subtransmission Line Construction (Below Ground)*. All other aspects of Alternative C1 would be identical to the proposed Project Subtransmission component.

3.4.3.2 Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 would be the same as the proposed Project from Mira Loma Substation to Archibald Street and from a location just north of intersection of Corydon Avenue and River Road to Corona Substation. The Alternative C2 segment deviates from the proposed Project's alignment where SCE's existing ROW is crossed by Archibald Avenue. At this location, the line would transition to underground, and would then proceed south for approximately 1.2 miles within Archibald Avenue to the southwest corner of the intersection of Smith River Road and Archibald Avenue. This segment would be installed underground because the existing subtransmission line poles on the west side of Archibald Avenue are already double-circuited subtransmission line poles, so a new

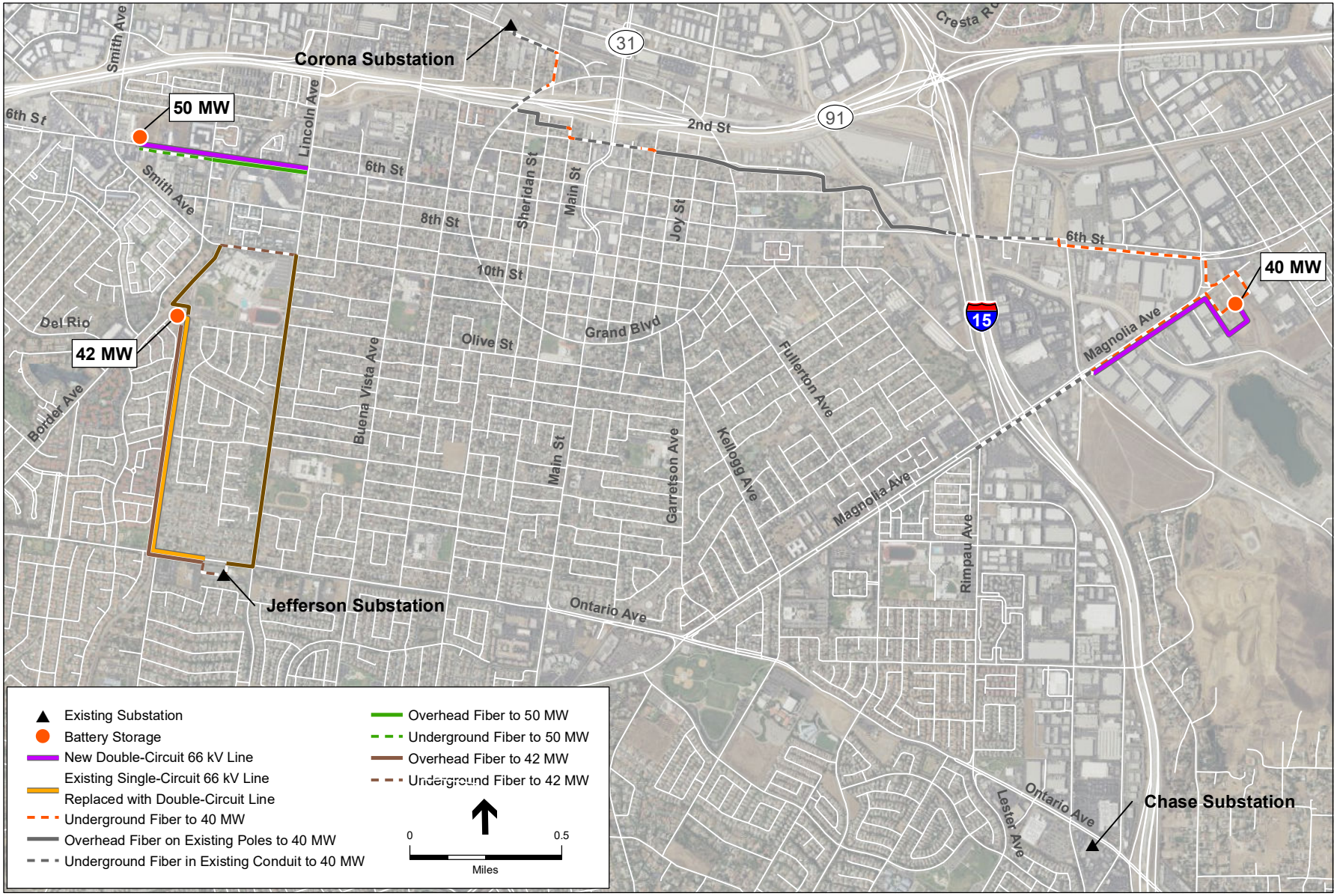


SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 3-2a

66 kV Subtransmission Line Alternatives C1 and C2



SOURCE: SCE, 2017c

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 3-2b

66 kV Subtransmission Line Alternative C3

overhead line in this area would have to be installed on the east side of the road, which would be inconsistent with CPUC General Order (GO) 95 pertaining to circuits occupying both sides of thoroughfares.

South of Smith River Road, the existing single circuit poles on the west side of the Archibald Avenue would be replaced with taller double circuit poles. The line would cross the Santa Ana River in a southerly direction, and continue south in the existing SCE ROW to River Road, where it would again join with the proposed subtransmission line alignment. The Alternative C2 segment from the SCE ROW to River Road would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 miles underground), and would replace approximately 5.4 miles of overhead line that would be associated with the proposed subtransmission line.

3.4.3.3 Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would involve constructing up to three subtransmission-level (66 kV) battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project (see Figure 3-2b, *66 kV Subtransmission Line Alternative C3*). The battery storage facilities would charge themselves from the existing subtransmission electrical grid during periods of the day when overall energy consumption is low and then would put the stored energy back onto the subtransmission electrical grid when the daily demand is at its peak. In order to meet peak daily demands, the battery storage facilities would need to combine for a total capacity of between 82 MW and 132 MW and would be connected to two or three of the following ENA substations: Corona, Jefferson, and Chase.

Based on analyses conducted by the CPUC's electrical engineering consultant and SCE, a total battery storage capacity of 82 MW that would be connected to two existing ENA substations would be sufficient to satisfy the Project's Subtransmission Service Objective through the 10-year planning horizon (ZGlobal, 2017 and SCE, 2017c). However, increasing the combined capacity of the battery storage facilities to 132 MW connected to three ENA substations may be necessary depending on the timing of project approval and future load forecasts. The appropriate capacity of the combined battery storage installations (between 82 MW to 132 MW) would be constructed to allow for future expansion if needed and would be determined during the Formal Proceeding for Application A.15-12-007. The analysis of Alternative C3 assumes construction of three battery storage and substation facilities with a combined capacity of 132 MW connected to Corona Substation, Jefferson Substation, and Chase Substation. Construction of each of the battery storage facilities would take approximately one year. It is assumed that two facilities would be constructed concurrently. The total construction period for Alternative C3 would be approximately two years.

Battery Storage and Substation Facilities

The battery storage facilities would be charged and ready to discharge energy onto the subtransmission grid to ensure that the ENA subtransmission lines do not exceed their rated capacities under peak electrical demand conditions and abnormal system configurations through the forecast period (see the Subtransmission Service Objective, above). The three Alternative C3 sites would include battery facilities that would range in size from 40 MW to 50 MW and would

each require at least 3 to 4 acres for development. Each of the battery storage facilities would include substation equipment (e.g., transformers) in addition to the battery facilities to step-up the electricity from 12 kV to 66 kV. Since Corona, Jefferson, and Chase substations and the surrounding properties are fully developed, construction of the battery storage facilities could not be accommodated at the existing substation sites. Consequently, the battery storage facilities would need to be located in new locations not immediately adjacent to the existing substations. This would require the construction of new 66 kV subtransmission lines connecting the substations to the battery storage facilities. SCE conducted a preliminary review of undeveloped parcels in the general vicinity of the ENA substations based on parcel size and zoning designations and identified two potential battery storage sites. In addition, SCE has clarified that a third site adjacent to the proposed Circle City Substation site appears to be feasible to connect to Chase Substation.

Refer to Figure 3-2b for an illustration of the Alternative C3 battery storage site locations and associated subtransmission lines, and below for descriptions of the each of the sites.

50 MW Connected to Corona Substation

The battery storage and substation site that would be electrically connected to Corona Substation is undeveloped with an area of approximately 4.4 acres on the north side of the 1400 block of W. 6th Street in the City of Corona. The fenced area of the site would be approximately 4.0 acres. The batteries would have a total capacity of 50 MW with 2 hours of battery storage and would be contained in up to 25 pad mounted 53-foot by 8-foot enclosures that would be 9 feet and 7 inches tall (plus a 2-foot pedestal) organized in 10 battery storage systems on the site. The site would be accessed by a 26-foot-wide driveway from W. 6th Street that would enter the site from the south.

The facility would connect to Corona Substation via a new approximately 0.5-mile double circuit 66 kV subtransmission line that would loop into the existing Corona-Chase-Databank 66 kV subtransmission line. The new double-circuit 66 kV subtransmission line would be supported by tubular steel poles (TSPs) along the north side of W. 6th Street from the site to the existing Corona-Chase-Databank 66 kV subtransmission line at S. Lincoln Avenue.

<u>In addition, two telecommunications lines would be required to connect the facility to SCE's existing telecommunications system. One telecommunications line would exit the battery storage substation site in an underground configuration for approximately 100 feet to the north side of West 6th Street. The telecommunication line would rise to an overhead position and follow the same alignment as the new double-circuit 66 kV subtransmission line to S. Lincoln Avenue where it would tap into the existing Mira Loma-Corona Fiber Optic Cable. The second telecommunications line would exit the battery storage facility and be installed approximately 1,100 feet of new underground conduit and cable along the north side of W. 6th Street to an existing pole on South Sherman Street, where it would rise and tap into the existing Corona-Pedley Fiber Optic Cable.</u>

42 MW Facility Connected to Jefferson Substation

The battery storage and substation site that would be electrically connected to Jefferson Substation is undeveloped with an area of approximately 3.1 acres at the north end of Coyote

Circle in the City of Corona. The fenced area of the site would be approximately 3.0 acres. The batteries would have a total capacity of 42 MW with 2 hours of battery storage and would be contained in up to 21 pad mounted 53-foot by 8-foot enclosures that would be 9 feet and 7 inches tall (plus a 2-foot pedestal) organized in 9 battery storage systems on the site. The site would be accessed by a 26-foot-wide driveway from Coyote Circle that would enter the site from the south.

To connect the facility to Jefferson Substation, a 1.0-mile segment of the existing single-circuit Corona-Jefferson 66 kV subtransmission line would be converted to double circuit from the site to Jefferson Substation. The existing subtransmission line wood poles would be replaced with taller TSPs along the west side of the drainage canal that borders the east side of the site from the site to the north side of Ontario Avenue, where the line would turn east before crossing Ontario Avenue to enter Jefferson Substation. Minor upgrades to Jefferson Substation also would occur to accommodate the new subtransmission line circuit.

In addition, two telecommunications lines would be required to connect the 42 MW facility to SCE's existing telecommunications system. One telecommunications line would exit the battery storage substation site in an underground configuration for approximately 150 feet to the west side of the drainage canal that borders the east side of the site. The telecommunication line would rise to an overhead position and follow the same alignment as the double-circuit 66 kV subtransmission line to a pole just north of Jefferson Substation. The telecommunications line would then convert to an underground configuration and continue into Jefferson Substation in approximately 520 feet of new underground conduit to the existing Mechanical and Electrical Equipment Room (MEER) building. The second telecommunications line would exit the battery storage facility in an underground configuration for approximately 150 feet to the west side of the drainage canal that borders the east side of the site. The telecommunications line would rise to an overhead position and continue north along existing poles for approximately 1,700 feet to the south side of Tenth Street, where it would convert to an underground position. The telecommunications line would continue easterly approximately 1,500 feet in new underground conduit to an existing pole on S. Lincoln Avenue and would rise to an overhead position. The telecommunications line would then continue south along the existing pole line for approximately 5,700 feet to the northeast corner of W. Ontario Avenue and S. Lincoln Avenue where it would convert to an underground position and continue into Jefferson Substation in approximately 260 feet of new underground conduit to the existing MEER.

40 MW Facility Connected to Chase Substation

The battery storage and substation site would be located off the south side of Leeson Lane, just northwest of the proposed Circle City Substation site. This undeveloped site has an area of approximately 4.5 acres and its fenced area would be approximately 4.0 acres. It would be accessed by a 26-foot-wide driveway from ~~Lesson~~ Leeson Lane that would enter the site from the northeast. To connect the facility to Chase Substation, a new double-circuit 66 kV subtransmission line 1.2 miles in length would be constructed to loop the facility into the existing Chase-Corona-Databank 66 kV Subtransmission Line from a point just west of Rimpau Avenue on the south side of Magnolia Avenue to the facility site. This 66 kV subtransmission connection would be the same as the Databank Source Lines that would be required for the proposed Circle City Substation. If this site is selected and both Alternative C3 and the proposed Circle City

Substation are approved, both facilities would utilize these lines. The Databank Source Lines are described in greater detail in Section 2.5.2.3, *Circle City-Corona No.2 and Chase-Circle City-Databank 66 kV Subtransmission Lines (the Databank Source Lines)*.

The batteries would have a total capacity of 40 MW with 2 hours of battery storage and would be contained in up to 20 pad mounted 53-foot by 8-foot enclosures that would be 9 feet and 7 inches tall (plus a 2-foot pedestal) organized in 8 battery storage systems on the site.

In addition, two telecommunications lines would be required to connect the 40 MW facility to SCE's existing telecommunications system. One telecommunications line would be along Magnolia Avenue and would tap the battery storage facility to the existing Corona-Jefferson fiber line. The proposed 5,500-foot telecommunications line (referred to here as the Battery Storage Tap to Corona-Jefferson fiber route) would consist of approximately 2,500 feet of new underground conduit and approximately 3,000 feet in existing underground conduit. The second telecommunications line would be 18,000 feet long and would consist of approximately 5,200 feet of new underground conduit, approximately 5,000 feet of new fiber placed in existing underground conduit, and approximately 7,800 feet of the line would be attached to existing distribution poles. Refer to Figure 3-2b, for an illustration of the alternative fiber alignment and where it would be installed in underground conduit and where it would be installed overhead on existing distribution poles. The new conduit would exit the 40 MW facility on Leeson Lane, turn north on Magnolia Avenue, and then west on East 6th Street to a location west of El Camino Avenue and the railroad. There would also be short segments of conduit installed along East 3rd Street, South Belle Street, and North Sheridan Street. The majority of the new conduit would be installed using a backhoe (SCE, 2018i); however, directional boring would be used for the telecommunication fiber to cross under the existing Burlington Northern Santa Fe (BNSF) railroad tracks that run north/south, approximately 50 feet east of El Camino Avenue. The directional boring would take place approximately 40 feet east of El Camino Avenue in an east/west direction. The bore (tunnel) would be approximately 80 feet in length, 12 inches in diameter, and 3 feet deep. Entrance and exit pits would be approximately 4 feet wide, 8 feet long, and 4 feet deep. The duration of boring activities to cross under the railroad tracks would take approximately 2 days. Site preparation and restoration for the bore pits on 6th Street would include saw-cutting the required area and removing asphalt, excavating the necessary depth for boring, backfilling, and repaving the street to City of Corona standards (SCE, 2018j). The overhead segments of the telecommunication line would be installed on 39 existing wood distribution poles primarily along East 3rd Street, Quarry Street, and West 2nd.

Facilities Required for Each Battery Storage and Substation Site

Each battery storage system at the three sites would have two to three battery storage enclosures, a 12-foot-tall pad-mounted inverter, 6-foot 10-inch pad-mounted transformers, 9-foot-tall 12 kV switchgear, a 6-foot, 10-inch communications cabinet, and an auxiliary panel. Each of the battery storage sites would also include 12/66 kV substations that would include a steel 66 kV switchrack, approximately 45 feet tall, 160 feet long, and 120 feet wide. The switchrack would contain five positions. In addition, each of the sites would be secured with an 8-foot-high chain link fence and 26-foot-wide sliding gate for driveway access.

The engineering design for each storage facility would be based on lithium-ion battery technology. This type of technology requires cooling of the battery components (cells/modules). Cooling is achieved by maintaining the battery enclosure room temperature within a specific temperature range (around 68 °Fahrenheit) using traditional air conditioner units (compressor-based refrigerant systems). The units may be mounted on top of the battery enclosures or on the ground adjacent to them. Battery storage systems are typically procured through an Engineer Procure Construct process, where the selected vendor engineers and designs the full system (including cooling) to meet SCE requirements. SCE's typical cooling requirements include: (1) designing the system to maintain an ambient temperature range without any performance de-rating (0 to 45 °Celsius); (2) a maximum height of 15 feet above finish grade in the event the cooling system is mounted on top of the battery enclosure; and (3) a maximum noise level of 75 dBA measured 3 feet outside the battery storage facility perimeter fence (SCE, 2018c).

The system would also include other designs to reduce fire risk. SCE would reduce fire risk by: (1) ensuring the battery cells are manufactured following the highest quality standards; (2) validating that the system is properly designed and integrated; and (3) ensuring the appropriate fire mitigations are in place (e.g., proper containment, fire detection and suppression system) (SCE, 2018d). *Note that if the battery technology that would be installed differs from that evaluated in this EIR, then additional CEQA review may be required.*

System Efficiency

SCE's electric grid can be categorized into a "transmission" portion and a "distribution" portion, which are connected in a *networked* configuration and a *radial* configuration, respectively. This distinction is important with respect to the ability for battery storage to operate efficiently. For example, a 10 MW capacity problem would have a different requirement in the size of the battery storage installation depending on the electrical location of the capacity problem and the electrical location of the storage solution. The application of battery storage to radial portions of the grid delivers a 1:1 ratio of impact to that radial portion and to those facilities upstream that are also radial. Where a 1:1 ratio of impact would not be observed is on the networked portions of the grid, as would occur under Alternative C3 (e.g., subtransmission lines). This is because networked facilities deliver power in concert with the other network facilities. The impedance characteristics of the facilities as well as dynamic changes in the loading values of the system cause changes in the loading reliability.

Alternative C3 would address load demand in a networked part of the grid and would avoid environmental impacts along the proposed Mira Loma-Jefferson subtransmission line alignment, and while battery storage of this scope may not be the most efficient or cost-effective solution to meeting the Subtransmission Service Objective, the CPUC has no evidence to suggest that Alternative C3 is infeasible, and has therefore carried it over for full analysis in this EIR.

3.4.4 Substation Alternatives

3.4.4.1 Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would involve constructing a distribution-level (12 kV) battery storage facility instead of a distribution substation and 66 kV source lines. In order to meet peak daily demands, a battery storage facility would need to be 10 MW to 20 MW in size and installed near the proposed Project substation site. Based on analysis conducted by SCE, a 10 MW battery storage facility (referred to as Option 2A by SCE), comprised of two 5 MW installations (with a corresponding total energy capacity of approximately 24 megawatt hours (MWh)) that would be connected to two existing distribution circuits near the site, would be sufficient to satisfy the Project's Distribution Service Objective. Need for the proposed substation would be deferred until 2027. However, increasing the size of the battery storage facility to 15 MW (referred to as Option 2B by SCE) or 20 MW (referred to as Option 2C by SCE) could be necessary depending on the timing of project approval and future load forecasts. SCE's analysis found that a 15 MW battery storage facility would defer the need for the proposed substation until 2029, and a 20 MW battery storage facility would defer the need until 2031.[2] Based on *new information relative to SCE's 2018 through 2027 power flow forecast, the battery storage facility for the various MW sizes may defer the need 1 year prior to the years identified above; therefore, the 20 MW facility may defer the need for a substation to 2030.*

Increased battery storage size could allow it to provide services in addition to those required to meet the Distribution Service Objective (e.g., use of the batteries during off-peak timeframes to facilitate the use of solar electric generation and reduce the need for fossil-fuel electric generation).[3] The appropriate size of the battery installation would be determined during the Formal Proceeding for Application A.15-12-007. The analysis of Alternative D1 assumes construction of the full 20 MW battery storage facility to ensure that the environmental analysis is sufficient for any size that may be approved during the Formal Proceeding. SCE has stated that construction would occur over the following three phases: phase 1 would include an initial installation of 10 MW (Option 2A) for operation by 2021; Phase 2 would include an additional 5 MW (Option 2B) for operation in 2027; and Phase 3 would include a final 5.3 MW (Option 2C) for operation in 2029, and that each phase of construction would take approximately 6 to 9 months to complete (SCE, 2018e). However, the analysis of Alternative D1 assumes that construction could occur in three phases as described by SCE, or could occur all at once within one year.

The battery storage facility would be charged and ready to discharge energy onto the distribution grid to ensure that the Corona, Jefferson, and Chase substations do not exceed their combined capacity under peak electrical demand conditions through the forecast period (see the Distribution Service Objective in Section 3.2.2, *Consistency with Project Objectives*). Because the battery storage facility would charge using distribution circuits, the construction of 66 kV source lines would not be required.

---

2 Installation of phase 1 for operation by 2021 would allow SCE to operate the battery storage installation for several years in advance of the projected capacity shortfall in 2024. This would provide SCE the opportunity to gain operational experience with the battery installation and to evaluate its performance under a variety of system conditions prior to the anticipated capacity shortfall addressed by the batteries.

3 Refer to the Commission's 2018 Decision, D.18-01-003, for further information about the potential for multiple uses of energy storage installations.

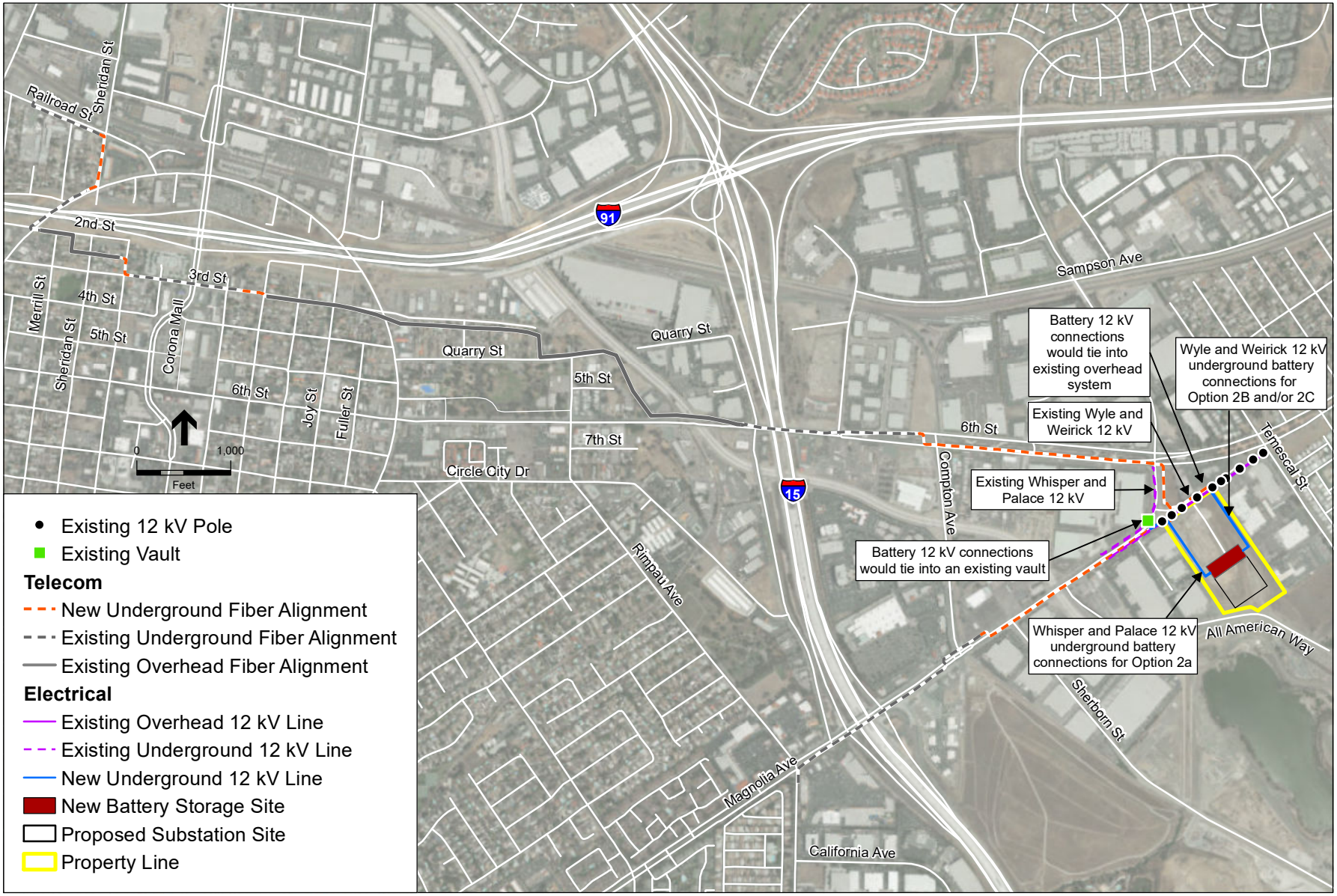
The Alternative D1 battery storage facility site would be immediately northwest of and adjacent to the proposed Circle City Substation site on the same property along Leeson Lane (refer to **Figure 3-3**, *Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Layout*). The ~~fenced~~ walled area of the site would be up to 2 acres. The batteries would be contained in up to ten pad mounted 53-foot by 8-foot enclosures that would be 9 feet and 7 inches tall (plus a 2-foot pedestal) organized in four battery storage systems on the site. Battery Storage Systems 1 and 2 would be on the west side of the site and Battery Storage Systems 3 and 4 would be on the east side of the site. Each battery storage system would have two to three battery storage enclosures, a 12-foot-tall pad-mounted inverter, 6-foot 10-inch pad-mounted transformers, 9-foot-tall switchgear, a 6-foot 10-inch communications cabinet, and an auxiliary panel (refer to **Figure 3-4**, *Alternative D1: 12 kV Distribution-Level Battery Storage Alternative Conceptual Plot Plan*). The site would be accessed by a 26-foot-wide driveway from Leeson Lane that would enter the site from the northeast. The site would be secured with an at least 8-foot-high ~~chain link fence~~ tan-colored wall similar to that SCE has proposed for the Circle City Substation site and 26-foot-wide sliding gate for driveway access.

The engineering design provided by the Applicant for the storage facility is based on lithium-ion battery technology. This type of technology requires cooling of the battery components (cells/modules). Cooling is achieved by maintaining the battery enclosure room temperature within a specific temperature range (around 68 °Fahrenheit) using traditional air conditioner units (compressor-based refrigerant systems). The units may be mounted on top of the battery enclosures or on the ground adjacent to them. Battery storage systems are typically procured through an Engineer Procure Construct process, where the selected vendor engineers and designs the full system (including cooling) to meet SCE requirements. SCE's typical cooling requirements include: (1) designing the system to maintain an ambient temperature range without any performance de-rating (0 to 45 °Celsius); (2) a maximum height of 15 feet above finish grade in the event the cooling system is mounted on top of the battery enclosure; and (3) a maximum noise level of 75 dBA measured 3 feet outside the battery storage facility perimeter fence (SCE, 2018c).

The system would also include other designs to reduce fire risk. SCE would reduce fire risk by: (1) ensuring the battery cells are manufactured following the highest quality standards; (2) validating that the system is properly designed and integrated; and (3) ensuring the appropriate fire mitigations are in place (e.g., proper containment, fire detection and suppression system) (SCE, 2018d). *Note that if the battery technology that would be installed differs from that evaluated in this EIR, then additional CEQA review may be required.*

Distribution Connections

The battery storage facility would be connected to four 12 kV distribution circuits between 800 and 900 feet northwest of the site. The electrical infrastructure of each of the existing distribution circuits would accommodate battery storage installations of 5 MW without voltage or thermal issues. The Applicant has stated that 5 MW is approximately 50 percent of the capacity for the distribution circuits. Limiting the installation size to 5 MW per circuit would allow the load that the circuits currently serve to remain being served by those circuits irrespective of the installation of a battery storage facility (SCE, 2018f).

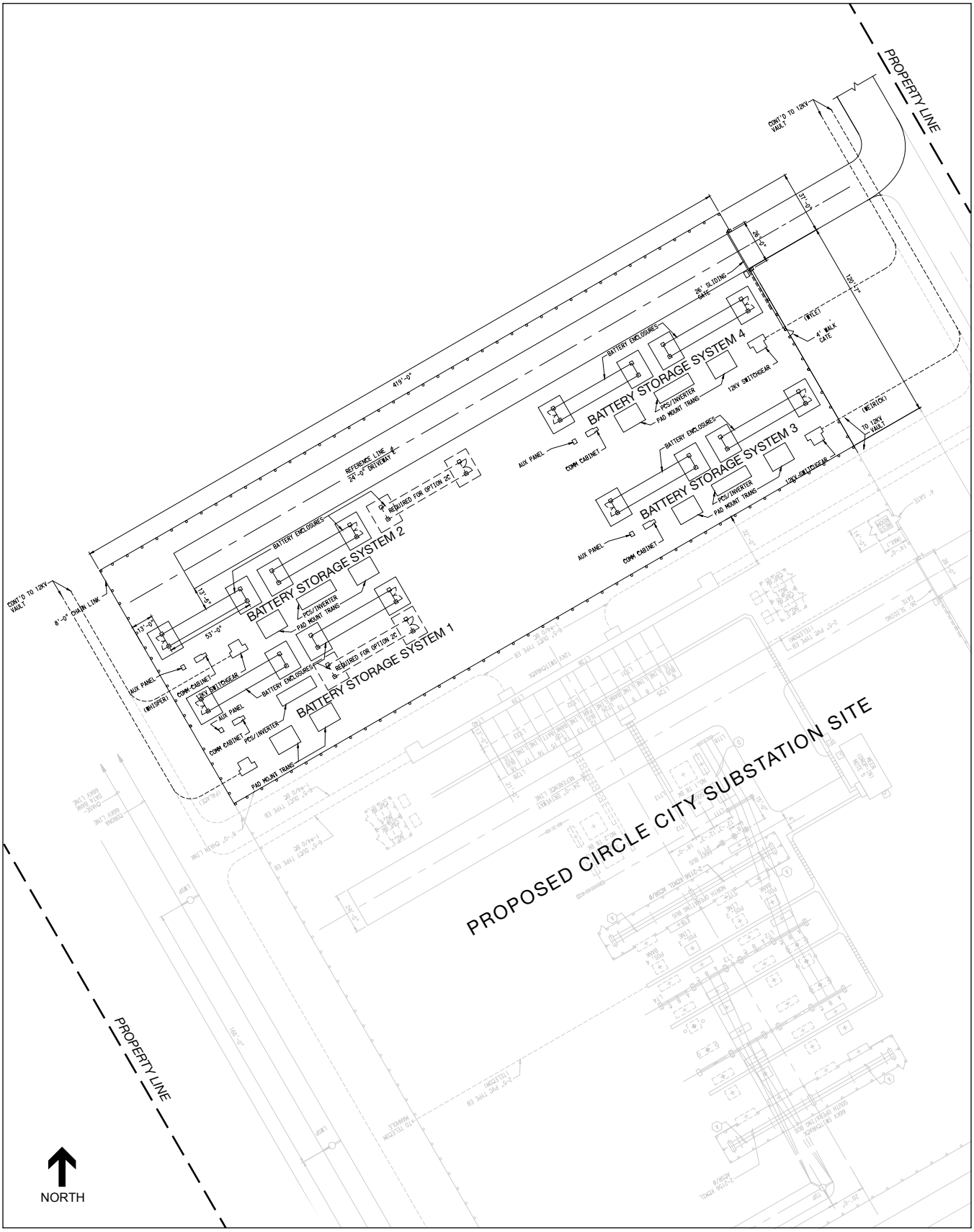


SOURCE: SCE, 2017c

Circle City Substation and Mira Loma-Jefferson 66kV Line Project . 207584.14

Figure 3-3

Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Layout



SOURCE: SCE, 2018

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

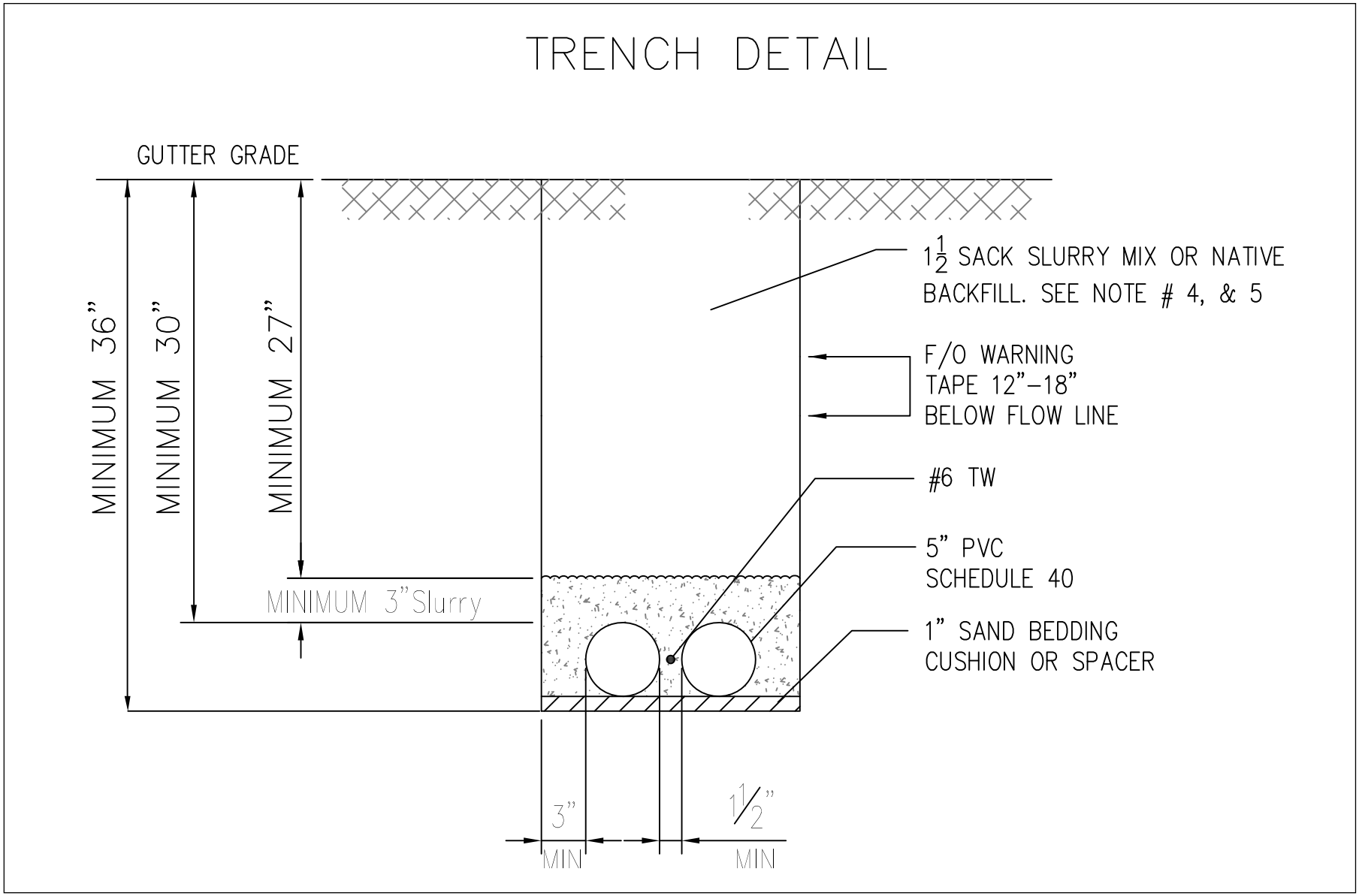
Figure 3-4
Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Plot Plan

The distribution connections would exit the battery storage site in underground conduit. Two of the distribution circuit connections would exit the southwest side of the site from Battery Storage Systems 1 and 2 and proceed toward the southwest. These circuit connections would turn northwest and proceed along the perimeter of the western property line towards Leeson Lane. At Leeson Lane the two lines would turn southwest and then cross the street to Magnolia Avenue, where they would connect to the Whisper and Palace distribution circuits in an existing vault. The other two distribution circuit connections would exit the northeast side of the site from Battery Storage Systems 3 and 4 and would turn northwest and proceed along the perimeter of the eastern property line towards Leeson Lane. At Leeson Lane the two underground lines would transition to overhead where they would be connected to the Wyle and Weirick distribution circuits on an existing pole. Refer to Figure 3-3 for an illustration of the battery storage facility distribution circuit connections. The duct bank installations that would be associated with the distribution connections would be similar to those proposed for the subtransmission line (see Section 2.6.7.4, *Duct Bank Installation*).

Telecommunication Connection

Alternative D1 would require installation of ~~a~~ two new telecommunications lines to connect the battery storage facilities to SCE's existing telecommunications system. The first new telecommunications line would be along Magnolia Avenue and would tap the battery storage facility to the existing Corona-Jefferson fiber line. The proposed 5,500-foot telecommunications line (referred to here as the Battery Storage Tap to Corona-Jefferson fiber route) would consist of approximately 2,500 feet of new underground conduit and approximately 3,000 feet in existing underground conduit. The second telecommunications line would be 18,000 feet long and would consist of approximately 5,200 feet of new underground conduit, approximately 5,000 feet of new fiber placed in existing underground conduit, and approximately 7,800 feet of the line would be attached to existing distribution poles. This second line would be the same as the Circle City Substation to Corona Substation telecommunications line described for Alternative E4. See Section 3.4.5.4, *Alternative E4: Databank 66 kV Source Lines Only*, for a detailed description of this line. Refer to Figure 3-3 for an illustration of Alternative D1's Battery Storage Tap to Corona-Jefferson and Battery Storage Tap to Corona Substation fiber routes. The figure also shows where the new underground conduit installations would be required and where the line would be installed within existing underground conduit.

The minimum width and depth requirements for the trenches that would be used to install the telecommunications fiber conduit are 18 to 24 inches and 36 inches, respectively. A drawing of the telecommunications conduit is provided in **Figure 3-5**, *Communications Conduit Trench Detail*. The majority of the new conduit would be installed using a backhoe (SCE, 2018g); however, a directional boring would be used for the telecommunication fiber to cross under the existing Temescal Wash flood control channel that runs northwest/southeast approximately 55 feet southwest of All American Way. The directional boring would take place approximately 80 feet northwest of the channel in an east/west direction. The bore would be approximately 200 feet in length, 12 inches in diameter, and 18 feet deep. Bore pits would be approximately 4 feet wide, 8 feet long, and 4 feet deep. The duration of boring activities to cross under the flood control channel would take approximately 3 days. Site preparation and restoration for the bore pits on Magnolia Avenue would include saw-cutting the required area and removing asphalt, excavating the necessary depth for boring, backfilling, and repaving the street to City of Corona standards (SCE, 2018h).



SOURCE: SCE, 2018

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project. 207584.14

Figure 3-5

Communications Conduit Trench Detail

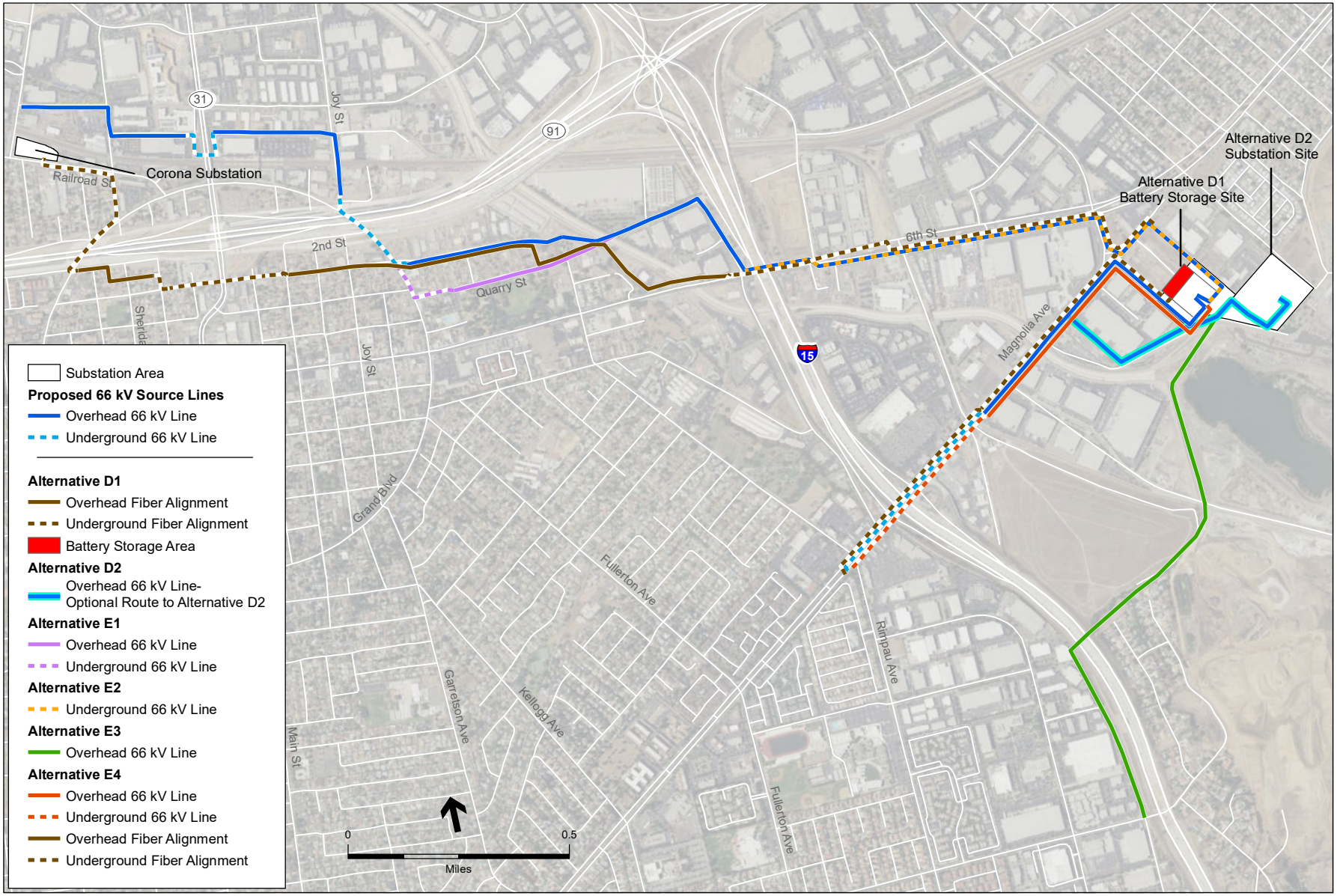
3.4.4.2 Alternative D2: 66/12 kV Substation Site Alternative

Under Alternative D2, a new 420-foot by 387-foot substation would be constructed on an approximately 12.5-acre, privately owned parcel just east of the proposed substation site, as shown in **Figure 3-6**, 66 kV *Source Line and 66/12 kV Substation Alternatives.* The substation would be the same as described in Section 2.5.1, *Circle City Substation*, with the exception of the changed site location. The alternative site is located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona. The site is currently vacant and is bounded by All American Way on the west, mixed vacant land and an asphalt production facility to the south, and vacant land to the east. A Waste Management facility at the terminus of Temescal Street and a mobile home park border the parcel to the north. The site is designated General Industrial on the City of Corona General Plan map and is zoned Light Manufacturing (M1). The site is generally flat, and SCE would establish vehicular access to the Alternative D2 site from Temescal Street or an easement to Leeson Lane.

Due to the close proximity of the proposed Circle City Substation site to the Alternative D2 site, there would not be a substantial difference in the source line alignments to the sites (see Figure 3-6). Instead of turning southwest into the proposed substation site, the Pedley Source Lines would continue to the Alternative D2 site perimeter, then turn northeast to near the middle point of the perimeter, where they would enter the site. There would be two options for the Databank Source Lines to connect to the Alternative D2 site. They could either: 1) continue along the southwest perimeter of the proposed substation site to All American Way, where it would turn northeast and then enter the alternative substation site; or 2) turn southeast from Magnolia Avenue onto private property approximately 400 feet northeast of All American Way.

3.4.5 Substation Source Line Alternatives

In order for a new 66/12 kV substation to provide distribution service, it requires a 66 kV supply of electricity. The nearest 66 kV subtransmission lines capable of supplying power to the proposed substation site are the Mira Loma-Corona-Pedley and the Chase-Corona-Databank 66 kV subtransmission lines. Each of these two 66 kV subtransmission lines would be looped to the proposed new substation creating four new subtransmission lines in two double-circuit configurations (see **Figure 2-3a**, *Existing and Proposed System Configurations for Circle City Substation*). The proposed Project looped subtransmission lines are referred to as the Pedley and Databank source lines. SCE identified two source line segments (Segments 1 and 2) that would accommodate the connection of either of the proposed Circle City Substation or the substation under Alternative D2 to the Mira Loma-Corona-Pedley 66 kV Subtransmission Line. SCE also identified two source line segments (Segments 3 and 4) that would accommodate the connection of either the proposed substation site or the Alternative D2 site to the Chase-Corona-Databank 66 kV Subtransmission Line. The substation source line alternatives include variations to either the proposed Pedley Source Lines or the Databank Source Lines. For example, Alternative E1, described below, includes an alternative alignment segment for the Pedley Source Lines, but the proposed Databank Source Lines (or associated alternative) would also be constructed under this alternative. Various combinations of the segments constitute the source line alignment alternatives, which are depicted in Figure 3-6.



SOURCE: SCE, 2015 and 2018

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 3-6

66 kV Source Line and Substation Alternatives

The proposed substation site and the Substation Site Alternative are adjacent to each other; therefore, the source line alternatives described below are suitable for either the proposed substation site or the Alternative D2 site.

3.4.5.1 Alternative E1: Quarry Street 66 kV Source Lines Segment

Alternative E1 would deviate from the proposed Pedley Source Lines alignment just south of the intersection of 3rd Street and Grand Boulevard. Instead of turning due east at this location, the alignment under Alternative E1 would continue underground in a southeasterly direction along East Grand Boulevard to Quarry Street. At Quarry Street this alternative would turn east and continue underground along Quarry Street for approximately 500 feet, where it would transition to overhead. The overhead line would proceed east with approximately 12 new light-weight steel (LWS) poles that would replace approximately 7 existing distribution wood poles along the north side of Quarry Street to where Quarry Street dead-ends on the west side of the Temescal Wash flood control channel. At this location the Alternative E1 alignment joins the proposed Pedley Source Lines alignment (Figure 3-6).

The existing distribution circuits would be placed on the new LWS poles. The Alternative E1 segment would be approximately 2,800 feet long, and would include approximately 1,000 feet of underground line. The Alternative E1 segment would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Source Lines segment that it would replace.

3.4.5.2 Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would be an underground line segment along the proposed Pedley Source Lines alignment from just west of Interstate 15 (I-15) at the eastern end of Quarry Street to the proposed substation site. This alternative would include approximately 1.5 miles of additional underground line compared to the proposed Pedley Source Lines segment that it would replace (Figure 3-6).

3.4.5.3 Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an alternative to the proposed Databank Source Lines. Under this alternative the proposed Databank Source Lines would not be constructed and would be replaced by source lines that would follow a southern alignment. This alternative alignment would consist of double-circuit LWS poles and TSPs and would begin with a connection to the Chase-Corona-Databank 66 kV Subtransmission Line at the intersection of Old Temescal Road and Compton Avenue, then it would continue north along Compton Avenue to Pico Street, where it would continue north behind several commercial properties to a location where it would cross over I-15. East of I-15 the Alternative E3 alignment would proceed in a northeasterly direction across vacant land to Sherborn Street, where the line would continue northeasterly across the north side of a small body of water to All American Way, where it would enter the southern end of the substation site. The total length of Alternative E3 is approximately 1.3 miles (Figure 3-6).

3.4.5.4 Alternative E4: Databank 66 kV Source Lines Only

Subsequent to the release of the PEA, SCE performed power flow analyses that indicate system performance of Circle City Substation with only one source line loop-in would be adequate (SCE, 2017d). Since the Databank Source Lines would be much shorter than the Pedley Source Lines (i.e., 1.2 miles compared to 3.5 miles), Alternative E4 includes only the Databank Source Lines to supply power to Circle City Substation.

Databank Source Lines

Because this alternative would only be served by the double-circuit Databank Source Lines, several changes to the source lines would be required. When a substation is delivered power by only two source lines, those source lines should have diverse paths so that under any single contingency, both source lines would not experience an outage resulting in complete loss of power to the substation. For overhead lines, exceptions can be made for when they are installed on TSPs because this type of pole is rarely subject to failure upon a commonplace cause such as a strike by a vehicle. Therefore, all poles along Magnolia Avenue under Alternative E4 would be TSPs as opposed to predominately LWS poles under the proposed Project.

Regarding the underground segment, SCE's personnel safety procedures require that all facilities within underground structures (vaults) be de-energized whenever performing work (such as maintenance or repairs) on subtransmission lines. Therefore, if both of the Databank Source line circuits would be in the same vaults, anytime one of the lines were taken out of service, the adjacent line would have to be de-energized as well resulting in no source of power being delivered to Circle City Substation (SCE, 2017e). Therefore, under Alternative E4 each circuit would have an individual vault, that would either be side by side or staggered with the vault of the other circuit. In addition, SCE has indicated that under these circumstances it would propose to have separate duct banks, if feasible, to ensure system reliability (SCE, 2017f) due to the potential for underground failure from a dig in, sewer failure damage to duct, an overload, or a faulty condition. Therefore, Alternative E4 would require two sets of conduit in Magnolia Avenue that would be separated by at least 6 feet to 10 feet (SCE, 2017g).

Telecommunication Connection

SCE requires substations to have at least two communication paths with routes that are diverse to ensure adequate communication (for protective relaying) is retained should there be a failure in one of the paths. Therefore, in addition to the telecommunications line that would be installed with the Databank Source Lines, an additional telecommunications line would be required under Alternative E4. The additional telecommunications line would span from the Circle City Substation to Corona Substation.

The Circle City Substation to Corona Substation telecommunications line would be 18,000 feet long and would consist of approximately 5,200 feet of new underground conduit, approximately 5,000 feet of new fiber placed in existing underground conduit, and approximately 7,800 feet of the line would be attached to existing distribution poles. Refer to Figure 3-6, for an illustration of

the alternative fiber alignment and where it would be installed in underground conduit and where it would be installed overhead on existing distribution poles.

The new conduit would exit the substation on ~~Lesson~~ Leeson Lane, turn north on Magnolia Avenue, and then west on East 6th Street to a location west of El Camino Avenue and the railroad. There would also be short segments of conduit installed along East 3rd Street, South Belle Street, and North Sheridan Street. The minimum width and depth requirements for the trenches that would be used to install the telecommunications fiber conduit are 18 to 24 inches and 36 inches, respectively. A drawing of the telecommunications conduit is provided in Figure 3-5, *Communications Conduit Trench Detail*. The majority of the new conduit would be installed using a backhoe (SCE, 2018i); however, directional boring would be used for the telecommunication fiber to cross under the existing Burlington Northern Santa Fe (BNSF) railroad tracks that run north/south, approximately 50 feet east of El Camino Avenue. The directional boring would take place approximately 40 feet east of El Camino Avenue in an east/west direction. The bore (tunnel) would be approximately 80 feet in length, 12 inches in diameter, and 3 feet deep. Entrance and exit pits would be approximately 4 feet wide, 8 feet long, and 4 feet deep. The duration of boring activities to cross under the railroad tracks would take approximately 2 days. Site preparation and restoration for the bore pits on 6th Street would include saw-cutting the required area and removing asphalt, excavating the necessary depth for boring, backfilling, and repaving the street to City of Corona standards (SCE, 2018j). The overhead segments of the telecommunication line would be installed on 39 existing wood distribution poles primarily along East 3rd Street, Quarry Street, and West 2nd.

3.5 Alternatives Eliminated from Full EIR Evaluation

The alternatives listed below have been eliminated from detailed analysis. These alternatives were not included for consideration in the EIR because they would not meet the basic Project objectives, would not be potentially feasible, and/or would not avoid or substantially reduce any of the significant environmental effects of the Project.

3.5.1 Alternative C4: 66 kV Subtransmission Line along Interstate 15 ROW

3.5.1.1 Description

During the public scoping period for this EIR, several individuals recommended that the CPUC evaluate an alternative alignment for the proposed Mira Loma-Jefferson subtransmission line along the Interstate 15 (I-15) right-of-way (ROW). The commenters did not propose a specific alignment for the alternative, but for the purposes of this review, an alternative alignment has been developed by CPUC based on existing conditions along I-15 and in the vicinity of Mira Loma and Corona substations. It is anticipated that this alternative would require installation of TSPs and LWS poles, as well as the installation of two segments of underground conduit and cable. The Alternative C4 alignment would be approximately 10.4 miles long, consisting of 8.95 miles of overhead line and 1.45 miles of underground line.

The Alternative C4 alignment would begin in the City of Ontario by exiting the southern perimeter of Mira Loma Substation and would proceed east along SCE's access road to Hamner Avenue, where the alignment would turn south. An existing double-circuit subtransmission line is located along the east side of Hamner Avenue so the overhead line would transition to underground at Hamner Avenue instead of crossing to the west side of the road to be consistent with CPUC GO 95 pertaining to circuits occupying both sides of thoroughfares. The alignment would proceed south to Cantu-Galleano Ranch Road where the line would transition back to overhead and the alignment would proceed east to the I-15 ROW. At the west side of the I-15 ROW the alignment would turn south and would continue to Bellegrave Avenue, where it would cross to the east side of I-15 into unincorporated Riverside County to avoid being placed immediately adjacent to residences. There is an existing distribution circuit along Bellegrave Avenue that crosses I-15; the distribution wood poles associated with this crossing would be replaced with either LWS poles or TSPs and the distribution circuit would be secured to the new poles under the subtransmission line.

On the east side of I-15, instead of continuing to the east with the distribution circuit, the Alternative C4 alignment would turn south and would continue south adjacent to I-15, either within the California Department of Transportation (Caltrans) ROW, or in the adjacent agricultural fields. At the Santa Ana River, it is anticipated that two or three poles would need to be installed within the riverbed for the river crossing. South of the river the line would enter the City of Norco and would continue south along the I-15 ROW to Hidden Valley Parkway. At Hidden Valley Parkway the line would turn west, crossing I-15 to a location just east of Hamner Avenue, where the line would again transition to underground. The underground line would continue south within Hamner Avenue for approximately 0.2 mile, then would turn southeast within private property for approximately 0.1 mile. The underground subtransmission line would then continue in a southwest direction within Cota Street, would cross River Road, then continue with Cota Street to a location adjacent to Corona Substation.

3.5.1.2 Rationale for Elimination

The alternative would achieve the Project Subtransmission Service Objective and appears to be technically feasible; however, Caltrans has a policy with regard to its freeways and expressways to exclude utilities from within access controlled highway ROWs, such as the I-15 ROW, to the extent practicable (Caltrans, 2013). Therefore, Caltrans would likely decide not to grant an encroachment permit for SCE to build the line within its ROW, which would make the alternative infeasible from a regulatory and/or legal perspective.

With regard to the aesthetics environmental effects associated with Alternative C4, I-15 is an Eligible State Scenic Highway through its entirety within Riverside County. As depicted in Figure 4.1-7 (VP 14), I-15 offers generally open views of mountains for motorists traveling north and south, which are considered a locally scenic resource. Under this alternative, the overhead line would be constructed along I-15 for more than 8 miles, which would result in significant and unavoidable visual impacts to a substantial number of motorists with no feasible mitigation to reduce the impact to less than significant (Class I). Although this alternative would eliminate significant aesthetic impacts associated with the proposed Mira Loma-Jefferson subtransmission

line along the 0.4-mile segment of Hellman Avenue in the City of Eastvale, it would generate a more severe significant and unavoidable impact associated with placement adjacent to I-15 (an Eligible State Scenic Highway) by affecting a substantially greater number of motorists and viewers traveling along the I-15. In addition, because there are no existing distribution, subtransmission, or transmission lines along I-15 that would provide the opportunity to co-locate existing lines with the new line, this alternative would locate a new subtransmission line ROW and associated infrastructure where none currently exist resulting in an inconsistency with the Garamendi Principles[4] (CEC, 2011). Therefore, the significant and unavoidable aesthetic impacts (Class I) under this alternative would be greater than would occur under the proposed Mira Loma-Jefferson subtransmission line.

Additionally, because Alternative C4 would not include replacement of existing subtransmission line poles as would occur under the proposed Mira Loma-Jefferson subtransmission line, this alternative would not include emissions associated with removal of existing conductor; removal of existing wood, TSPs, and LWS poles; or removal of TSP foundations. This alternative would involve construction of approximately 2 miles less of overhead line, but would require construction of an additional 0.65 mile of underground line compared to the proposed Project. Overall, this alternative may result in less total construction emissions than the proposed Mira Loma-Jefferson subtransmission line; but given that pole and conductor removal activities that would be associated with the proposed line are not part of the air quality analysis maximum day scenario, the maximum day emissions, on which significance is based, would be the same for Alternative C4 as the Project (see Table 4.3-4, *Project Peak Daily Construction Emissions*). Therefore, this alternative would result in the same significant and unavoidable impacts to regional air quality and to sensitive receptors even with implementation of Mitigation Measures 4.3-1a and 4.3-1b (Class I).

In addition to impacts associated with aesthetics and air quality, implementation of this alternative would require installation of subtransmission line poles within the Santa Ana River where none currently exist. This could also result in additional impacts to biological resources and/or hydrology.

As described above, Alternative C4 would be technically feasible and capable of meeting the basic project objectives; however, its regulatory and/or legal feasibility is uncertain. With regard to its environmental effects, the significant and unavoidable aesthetic impacts (Class I) under this alternative would be substantially greater than would occur under the proposed Mira Loma-Jefferson subtransmission line, but the significant and unavoidable air quality impact would be the same as the proposed Project (Class I). Therefore, because this alternative would not avoid or reduce the significant environmental impacts identified for the proposed Project, it is not evaluated in detail in this EIR.

[4] The Garamendi Principles for electric transmission corridor planning were passed in Senate Bill (SB) 2431 (Stats. 1988, Ch. 1457). Consistency with the Garamendi Principles would be achieved by: (1) using existing ROW by upgrading existing subtransmission facilities, where technically and economically justifiable; and (2) encouraging the expansion of existing ROW when construction of new transmission lines is required, where technically and economically feasible.

3.5.2 Alternative D3: 12 kV Distribution-Level Battery Storage with Circle City Substation

3.5.2.1 Description

Alternative D3 combines Alternative D1, 12 kV Distribution-Level Battery Storage, with the proposed Circle City Substation and associated source lines. This alternative would also include construction of the Mira Loma-Jefferson subtransmission line or an alternative to address the Subtransmission Service Objective.

3.5.2.2 Rationale for Elimination

Alternative D3 would achieve the Project Distribution Service Objective and would be technically feasible; however, it would not reduce the significant short-term construction (i.e., air quality and noise) or long-term aesthetics impacts that would be associated with the proposed Project. In addition, due to the extra electrical infrastructure that would be required, the scope of construction activities under Alternative D3 would be increased, as would the associated short-term significant air quality impacts relative to the proposed Project. For these reasons, this alternative was eliminated from further consideration.

3.5.3 Alternative F: Demand-Side Management

3.5.3.1 Description

DSM programs are designed to reduce customer energy consumption. Regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. One goal of these programs is to reduce overall electricity use. Some programs also attempt to shift such energy use to off-peak periods. The CPUC supervises various DSM programs administered by the regulated utilities, and many municipal electric utilities have their own DSM programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation. Economic and price considerations as well as long-term impacts of state-sponsored conservation efforts, such as the Governors 20/20 rebate program and new appliance efficiency standards, are considered in load forecasts.

3.5.3.2 Rationale for Elimination

Reductions in energy demand through energy conservation and demand management programs will be a part of SCE's future operations and are incorporated into its long-term peak load forecasts (SCE, 2016a; 2017g). Existing conservation and demand management programs run by SCE include rebates on energy-efficient appliances, a metering system that allows SCE customers with smart thermostats and appliances to automatically respond during critical peak pricing and reliability events, and more (SCE, 2016a). However, these programs require voluntary participation. As separate and stand-alone programs, SCE cannot guarantee that such voluntary programs would provide either the capacity or reliability needs in the ENA, as stated in the

proposed Project objectives. For these reasons, this alternative was eliminated from further consideration.

3.5.4 Alternative G: Third-Party Renewable and Distributed Energy Generation Resources

3.5.4.1 Description

Renewable Energy Generation

Executive Order S-14-08 sets California's renewable energy goals at 33 percent by 2020. This requires all retail sellers of electricity to increase their procurement of eligible renewable resources to 33 percent by 2020. Senate Bill X1-2 was signed in 2011, codifying California's Renewables Portfolio Standard (RPS) target at 33 percent by 2020. This RPS applied to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities had to adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020.

Governor Edmund G. Brown, Jr. signed Senate Bill 350 in October 2015, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. The RPS Program was mandated by Senate Bill 1078 (SB 1078, Sher, Chapter 516, Statutes of 2002) under Public Utilities Code sections 381, 383.5, 399.11 through 399.15, and 445. The CPUC, in collaboration with the California Energy Commission (CEC), is addressing its responsibilities in implementing the RPS through its own proceedings. On March 8, 2003, the CEC and the CPUC approved an Energy Action Plan in addition to the Renewable Portfolio Standard. On April 22, 2004, the CPUC issued an Order Instituting Rulemaking to specifically address the RPS (R.04-04-026). On September 21, 2005, the Energy Action Plan II was finalized, and in February 2008 the CPUC and CEC published the Energy Action Plan 2008 Update. The shared goal of the Energy Action Plan is to:

> "*Ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers*."

Currently, there are two types of solar generation available: solar thermal power (also known as concentrating solar power) and photovoltaic (PV) power generation. In 2016, California generated approximately 19,783 gigawatt hours (GWh) of power with solar thermal power plants, or 10.0 percent of the state's total electricity production. The majority of solar thermal power facilities are parabolic-trough electric plants installed in the Mojave Desert, due to the large tracks of land required for this technology. In 2008, solar PV surpassed solar thermal in installed capacity. The cumulative installed solar PV capacity in 2016 reached about 8,616 MW, generating an estimated 17,234 GWh of electricity, compared to 1,249 MW that generated as estimated 2,548 GWh from solar thermal (CEC, 2018). PV power systems are available on a

significantly smaller scale, and have received increased support from private and public sections since the 1970s.

In 2016, geothermal energy in California produced 11,582 GWh of electricity (CEC, 2018). Most of California's developed geothermal resources are located in Sonoma, Lake, Imperial, and Inyo counties. Other geothermal resource areas in the state are found in Lassen, Mono, Siskiyou, and Modoc counties. Some of the sites for new geothermal development are located in areas characterized by sensitive cultural and environmental concerns. Other issues that could delay development include permitting and access to transmission. The technologies most often used to produce electricity from geothermal resources in California are flash steam power and binary cycle power plants. The flash steam power technology is typically used at sites that have high temperature fluids (usually above 400 degrees Fahrenheit). Fluids at these sites boil into steam as they rise to the surface. The steam is used to power a turbine, which turns a generator to produce electricity. Binary cycle power plants can be used with lower temperature geothermal resources where the water does not become steam before rising to the surface.

In 2016, the installed capacity of wind energy electricity in California produced a total of 11,582 GWh of electricity, or 5.8 percent of the state's total system power (CEC, 2018). According to the *Renewable Resources Development Report*, Riverside County has two important wind resource areas: San Gorgonio Pass and Palm Springs (CEC, 2003). However, even in high wind resource areas, wind energy technology requires approximately 5 to 6 acres per MW of wind power. In addition, the primary technical obstacle to utilizing wind generation is the lack of existing transmission infrastructure to transport the wind-generated power to the grid.

Third-Party Distributed Energy Generation

Third party distributed energy generation is electricity production that is on-site or close to the load center that could be interconnected at distribution system voltages. Distributed generation is generally limited to systems less than 20 MW (CEC, 2007). Distributed generation does not include hydroelectricity, geothermal, non-combined heat, or power related digester gas, landfill gas, or electricity produced from municipal solid waste.

In March 2007, the CEC released the staff report *Distributed Generation and Cogeneration Policy Roadmap for California* (CEC, 2007*).* The report included a vision for distributed generation and cogeneration becoming significant components of California's electrical system, meeting over 25 percent of the total peak demand. To achieve its vision, California supports incentives in the near term, transition to new market mechanisms, and reduce remaining institutional barriers.

As mentioned above, independently owned and operated distributed energy generation projects are behind-the-meter facilities, and at this time, it remains unclear to what extent they would be under Applicant control. By comparison, in-front-of-the-meter generation facilities are typically owned and operated by the utility (in this case SCE) and are attached directly to the electrical grid (e.g., Alternatives D1 and C3), while behind-the-meter facilities tend to be independently owned and operated and not necessarily under the control of SCE. For this reason, only generation options that would be owned and operated by SCE are evaluated in full in this EIR.

3.5.4.2 Rationale for Elimination

Renewable resources for renewable energy programs will be part of SCE's future operations and are incorporated into its long-term peak load forecasts (SCE, 2017h; 2018k). As separate and stand-alone programs, these renewable resource alternatives would not replace the need for upgrading the existing subtransmission infrastructure in the study area. Indeed, transmission system constraints are noted by the CEC as a substantial impediment to effective integration of renewable resources statewide. However, because renewable resources would not provide the demand, reliability, or operational flexibility needs of SCE, as stated in the objectives for the proposed Project, and because subtransmission infrastructure upgrades would still be required to integrate any renewable resources, alternatives such as these were eliminated from further consideration.

A combined total of approximately 26 megawatts (MW) of third party distributed generation is already built into the Applicants 10-year demand forecast that would support the load at the Mira Loma, Milliken, and Corona Substations under the Wholesale Distribution Access Tariff (WDAT), Rule 21 - Export/Non-Export. Of these substations, only the Corona Substation is located in the Project's ENA, and 1.75 MW is planned for interconnection to it (SCE, 2016b). Many proposed projects in the WDAT & Rule 21 interconnection queue are not ultimately developed. This is often because the projects generally come from third parties with a specific financial agenda determining whether or not they are viable.

The potential for and timing of additional third-party distributed generation within the ENA remains uncertain. This alternative is not considered feasible because of the unknown siting, timing, economic/market, legal, and technological issues, all of which are not possible for the Applicant to foresee or rely on at this time to meet the basic objectives of the proposed project. Therefore, it was not carried forward for full analysis.

References – Alternatives

California Department of Transportation (Caltrans), 2013. Encroachment Permits Manual, Section 600, Utility Permits, July 2013.

California Energy Commission (CEC), 2003. Renewable Resources Development Report. Commission Report, November 2003. Publication number 500-03-080F.

CEC, 2007. Distributed Generation and Cogeneration Policy Roadmap for California. Staff Report, March 2007. Publication number 500-2007-021.

CEC, 2011. Forms and Instructions for Electric Transmission-Related Data, Appendix B, Garamendi Principles. Commission Report, January 2011. Publication number 700-2010-018-CMF.

CEC, 2018. California Energy Almanac Statistics and Data. Available online at: http://energyalmanac.ca.gov/. Accessed February 12, 2018.

Southern California Edison (SCE), 2015. Application of Southern California Edison Company (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV and Proponent's Environmental Assessment for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project. December 4, 2015.

SCE, 2016a, Energy Solutions for Your Residence. Available online at https://www.sce.com/wps/portal/home/residential/. Accessed November 10, 2016.

SCE, 2016b. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 6 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, October 2016.

SCE, 2017a. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 15, Question 7 Attachment 1 of 1, for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, October 2017.

SCE, 2017b. Circle City 66/12 kV Substation and Mira Loma-Jefferson 66 kV Line Project, Presented by Southern California Edison to CPUC – Energy Division, December 20, 2017.

SCE, 2017c. Circle City 66/12 kV Substation and Mira Loma-Jefferson 66 kV Line Project, CPUC Energy Division Briefing, June 14, 2017.

SCE, 2017d. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 15, Question 3 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, November 2017.

SCE, 2017e. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 12, Question 2 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, July 2017.

SCE, 2017f. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 15, Question 1 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, September 2017.

SCE, 2017g. Bi-weekly conference call with CPUC and SCE on September 20, 2017, statement by Paul McCabe of SCE.

SCE, 2017h. Southern California Edison Response to California Public Utilities Commission (CPUC) Data Request No. 14, Question 3 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, July 2017.

SCE, 2018a. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 1 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018b. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 5 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018c. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 17 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018d. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 15 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018e. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 12 Supplemental for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, March 2018.

SCE, 2018f. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 9 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018g. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 8 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018h. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 8 Supplemental #2 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, March 2018.

SCE, 2018i. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 3 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

SCE, 2018j. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 3 Supplemental #2 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, March 2018.

SCE, 2018k. About Us – Among the Nation's Leading Utilities for Renewable Energy. Available online at: https://www.sce.com/wps/portal/home/about-us/environment/renewable-power/. Accessed March 15, 2018.

ZGlobal, 2017. *Project Alternatives Assessment, A Power Flow Analysis for the Circle City Project*, CPUC Proceeding - A.15-12-007, Final Draft Report, March 2017.

CHAPTER 4
Environmental Analysis

Introduction to Environmental Analysis

This chapter identifies and analyzes the significant environmental impacts of the proposed Project and alternatives, including the No Project Alternative, and identifies feasible mitigation measures to reduce or avoid significant effects. This chapter examines the environmental impacts associated with the proposed Project and alternatives as they relate to the following 18 areas of environmental analysis:

4.1 Aesthetics
4.2 Agriculture and Forestry Resources
4.3 Air Quality
4.4 Biological Resources
4.5 Cultural Resources
4.6 Energy Conservation
4.7 Geology and Soils
4.8 Greenhouse Gas Emissions
4.9 Hazards and Hazardous Materials
4.10 Hydrology and Water Quality
4.11 Land Use and Planning
4.12 Minerals
4.13 Noise
4.14 Population and Housing
4.15 Public Services
4.16 Recreation
4.17 Transportation/Traffic
4.18 Utilities and Service Systems

Analysis within each issue area includes consideration of the components of the proposed Project as described in Chapter 2, *Project Description*.

Within each of the environmental areas listed above, the discussion of Project impacts is provided in the following format:

- Environmental Setting;
- Regulatory Setting (i.e., applicable regulations, plans, and standards);
- Significance Criteria;
- Applicant Proposed Measures;
- Impacts and Mitigation Measures for the Project; and
- Impacts and Mitigation Measures for the Alternatives.

The following alternatives are analyzed in this EIR (refer to Chapter 3 for a description of each of the alternatives):

- Alternative A: No Project

Subtransmission Service Objective Alternatives

- Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line without Substation
- Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue
- Alternative C2: 66 kV Subtransmission Line along Archibald Avenue
- Alternative C3: 66 kV Subtransmission-Level Battery Storage

Distribution Service Objective Alternatives

- Alternative D1: 12 kV Distribution-Level Battery Storage
- Alternative D2: 66/12 kV Substation Site Alternative
- Alternative E1: Quarry Street 66 kV Source Lines Segment
- Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation
- Alternative E3: Southern 66 kV Source Lines Alignment
- Alternative E4: Databank 66 kV Source Lines Only

Each environmental issue area analyzed in this document begins by providing background information and a description of the applicable environmental setting (baseline conditions) and the regulatory setting. In addition, each section sets forth significance thresholds and where exceedance of the threshold may not be intuitive, a discussion of the methodology utilized to determine whether each identified impact would be "significant" or "less than significant." Finally, the individual sections recommend feasible mitigation measures to reduce or avoid significant impacts. Throughout Chapter 4, *Environmental Analysis*, both impacts and the corresponding mitigation measures are identified by a bold letter-number designation (e.g., **Impact 4.1-1** and **Mitigation Measure 4.1-1**).

In performing the analysis for this EIR, the EIR preparers relied on available published studies and reports and conducted independent investigations as needed. Information provided by Southern California Edison (SCE) in its application and accompanying environmental documentation was also considered in the EIR analysis after independent review and assessment by the EIR preparers. The specific documents considered and relied upon are cited at the end of each resource area analysis in Sections 4.1 through 4.18.

Environmental Assessment Methodology

Environmental Baseline

The analysis of each resource area begins with an examination of the existing physical setting (baseline conditions as determined pursuant to CEQA Guidelines §15125[a]) that may be affected by the Project and alternatives. The effects of the Project and alternatives are defined as changes to the environmental setting that are attributable to project components or operation. Pursuant to CEQA Guidelines §15125(a), the environmental setting used to determine the impacts associated with the Project and alternatives is primarily based on the environmental conditions that existed in the study area in January 2016 at the time the NOP was published. However, the CEQA Guidelines and case law recognize that the date for establishing an environmental baseline cannot

be rigid. In some instances, information is presented in the environmental setting that differs from the precise time of the NOP. This information is nevertheless considered representative of baseline conditions. Furthermore, environmental conditions may vary from year to year, and in some cases it is necessary to consider conditions over a range of time periods. Except as specified otherwise within the document, any reference to "existing" conditions throughout this EIR refers to the baseline condition as of January 2016.

Impact Significance Criteria

According to the CEQA Guidelines Section 15382, a significant effect on the environment means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

Significance criteria are identified for each environmental issue area. The significance criteria serve as thresholds for determining if the proposed Project would result in a significant adverse environmental impact when evaluated against the baseline conditions. These thresholds include identifiable quantitative or qualitative standards or sets of criteria pursuant to which the significance of a given environmental effect may be determined. Exceedance of a threshold of significance normally means the effect will be determined to be significant (CEQA Guidelines §15064.7(a)). However, an iron-clad definition of significant effect is not always possible because the significance of an activity may vary with the setting (CEQA Guidelines §15064(b)). Therefore, a Lead Agency has the discretion to determine whether to classify an impact described in an EIR as "significant," depending on the nature of the area affected. The thresholds of significance used to assess the significant of impacts are primarily based on those provided in Appendix G of the CEQA Guidelines. The significance criteria for energy conservation are based on guidance provided in the Appendix F of the CEQA Guidelines.

Applicant Proposed Measures

In the Proponent's Environmental Assessment (SCE, 2015), SCE identified measures that would be implemented to avoid or reduce impacts that would be associated with the proposed Project. If an applicant proposed measure would not reduce the impact to a less-than-significant level, feasible mitigation measures are identified to further reduce the impact.

Environmental Impacts

The EIR evaluates the environmental impacts that the proposed Project and the alternatives would create. The impacts identified were compared with significance criteria, and were then classified according to significance categories listed in each issue area. The same methodology was applied systematically to each alternative. A comparative analysis of the proposed Project and the alternatives is provided in Chapter 5 of this EIR.

Impact Analysis

The EIR evaluates the potential environmental impacts that the proposed Project and alternatives would create. Impacts are classified as:

Class I: Significant; cannot be mitigated to a level that is less than significant;
Class II: Significant; can be mitigated to a level that is less than significant;
Class III: Less than significant, no mitigation required; and
Class IV: Beneficial impact.

When significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the intensity of the impacts and focus on the protection of sensitive resources. The effectiveness of a mitigation measure is subsequently determined by evaluating the impact remaining after its application. Those impacts meeting or exceeding the impact significance criteria after mitigation are considered residual impacts that remain significant (Class I). Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance. The mitigation measures recommended in this document are identified within each issue area section (Sections 4.1 through 4.18) and are also presented in the Mitigation Monitoring, Reporting, and Compliance Program in Chapter 9 of this EIR.

Impacts of Alternatives

Chapter 3 provides a list and description of alternatives to the proposed Project. Each issue area section (Sections 4.1 through 4.18) presents the impact analysis for each alternative, while Chapter 5 provides a summary of the collective impacts of each alternative in comparison with the impacts of the Project.

Cumulative Impact Analysis

Section 6.2 presents the cumulative impact analysis. The focus in the cumulative impact analysis was to identify those proposed Project impacts that might not be significant when considered alone, but may contribute to a significant impact when viewed in conjunction with other identified past, current, and reasonably foreseeable future projects.

References – Environmental Analysis

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment, December 2015.

4.1 Aesthetics

This section describes the visual resources in the vicinity of the Project and alternatives, and the associated regulatory framework. The impact analysis presents the significance criteria used to evaluate impacts on identified resources as a consequence of implementing the Project or alternatives, the methods used in evaluating these impacts, and the results of the impact assessment based on the applied significance criteria.

4.1.1 Setting

The study area for visual resources encompasses the landscapes directly affected by facilities proposed under the Project and alternatives and the surrounding areas that would be within view of the Project components. The visual analysis focuses on travel route views, and views from parks and recreational areas.

4.1.1.1 Definitions Related to Visual Resources

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, a visual or aesthetic impact may occur.

Visual Sensitivity

Visual sensitivity is the overall measure of an existing landscape's susceptibility to adverse visual changes. This analysis of visual sensitivity is based on the combined factors of Visual Quality, Viewer Types and Volumes, and Visual Exposure to the Project and alternatives. Visual sensitivity is reflected according to high, moderate, and low visual sensitivity ranges, and is a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts.

Project Viewshed

Project viewshed is defined as the general area from which the Project would be visible or can be seen by the public. The Project area consists of the proposed Circle City Substation site, the Source Line alignments, and the Mira Loma-Jefferson 66 kV Subtransmission Line alignment. For purposes of describing a project's visual setting and assessing visual impacts, the viewshed can be broken down into distance zones of foreground, middle ground, and background. The foreground is defined as the zone within 0.5 mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. The middle ground is a zone that extends from 0.5 mile up to 5 miles from the viewer, and the background extends from approximately 5 miles to the horizon. Analysis of the Project primarily considers the effects on foreground viewshed conditions, although consideration is also given to the effects on the middle ground and background views.

Visual Quality

Visual quality is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area. For the purposes of this EIR, visual quality is defined according to three levels:

- Indistinctive, or industrial – defined as generally lacking in natural or cultural visual resource amenities typical of the region;
- Representative – defined as visual resources typical or characteristic of the region's natural and/or cultural visual amenities; and
- Distinctive – defined as visual resources that are unique or exemplary of the region's natural or cultural scenic amenities.

Viewer Types and Volumes of Use

Viewer types and volumes of use pertain to the types (e.g., recreationalist and motorist) and amounts of users (e.g., number of recreational users) that various land uses receive. Land uses that derive value from the quality of their settings are considered potentially sensitive to changes in visual setting conditions. Land uses within the study area that may be sensitive to change in visual conditions include major transportation systems such as designated scenic highways, designated scenic roads, and designated park, recreation, and natural areas.

Viewer Exposure

Viewer exposure addresses the variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- Landscape visibility (the ability to see the landscape);
- Viewing distance (i.e., the proximity of viewers to the Project) - viewing distances are described according to whether the Project activities would be viewed within a foreground (within 0.5 mile), middleground (0.5 mile to 5.0 miles), or background (beyond 5.0 miles) zone;
- Viewing angle – whether the Project would be viewed from above (superior), below (inferior), or from a level (normal) line of sight;
- Extent of visibility – whether the line of sight is open and panoramic to the Project area or restricted by terrain, vegetation, and/or structures; and
- Duration of view.

4.1.1.2 Existing Visual Quality of the Region

The Project is located in the inland valley of the Los Angeles Basin and is bordered by the San Gabriel Mountains to the north, the Santa Ana Mountains to the south, and the lower Chino Hills and San Jose Hills to the west. The Project is situated within a relatively flat area between

525 and 750 feet above sea level in elevation. Peaks of the San Gabriel Mountains reach elevations of approximately 10,000 feet above sea level and are situated about 10 miles away. The closer Santa Ana Mountains rise to an elevation of approximately 5,600 feet. See **Figure 4.1-1**, *Regional Landscape Context*.

The surrounding hills and mountains form a vivid backdrop in views from many locations throughout the area. Originating in the mountains, the Santa Ana River flows southwest, providing the area's major drainage system; the Project crosses the river, as well as several channels that feed into it. In general, existing views of the surrounding mountains, as seen from several local roadways, and locations throughout the Project area, are considered locally scenic.

The area surrounding the Project is located in a largely residential setting with some expanses of agricultural land and industrial areas. The proposed Mira Loma-Jefferson Subtransmission Line would be located in the cities of Corona, Norco, and Eastvale in Riverside County, as well as the City of Ontario and the eastern border of the City of Chino in San Bernardino County. The proposed Pedley and Databank source lines, as well as the proposed Circle City Substation, would be located solely within the City of Corona.

Existing nighttime lighting in the area includes highway and street lights, lighting associated with industrial and commercial facilities, lighting at public and recreational facilities such as parks and schoolyards, and localized lighting sources associated with residences.

Scenic Roadways

Table 4.1-1, *Scenic Roadways Within the Project Area*, identifies roadways in the proximity (i.e., within 1 mile) of the Project components that are designated scenic and eligible for local and state scenic designation by local general plans and the California Department of Transportation (Caltrans).

Representative Photographs of the Scenic Character

The visual character of the Project area is described in this subsection. **Figure 4.1-2**, *Photograph Viewpoint Locations Map (Source Line Route)* and **Figure 4.1-3**, *Photograph Viewpoint Locations Map (Subtransmission Line)* delineate the locations of Project components and photograph viewpoints (VP). **Figures 4.1-4a** through **4.1-4s**, *Representative Photographs,* present a set of 38 photographs that show representative visual conditions and public views within the Project area.

Table 4.1-2, *Summary of Project Components, Primary Viewers, Representative Photographs, and Visual Simulations* summarizes the four primary components of the Project in terms of their approximate length (or acreage), potentially affected viewers, and representative photographic views. The Project's appearance is portrayed in a set of before-and-after views, as seen from key public viewpoints listed under "Visual Simulation."

TABLE 4.1-1
SCENIC ROADWAYS WITHIN THE PROJECT AREA

Roadway	Scenic Status	Proximity to Project
Interstate (I)-15	Portion south of State Route 91 is an Eligible State Scenic Highway within Riverside County.	The proposed Databank Lines would cross over I-15 within Magnolia Avenue (underground) and the proposed Pedley Source Lines would cross over I-15 near East 6th Street in Corona.
State Route (SR) 91	Portion west ~~east~~ of I-15 is an Eligible State Scenic Highway within San Bernardino and Riverside counties.	The proposed Pedley Source Lines would cross under SR 91 within East Grand Boulevard (underground) in Corona.
Grand Boulevard	City of Corona locally designated scenic highway. Listed on the National Register of Historic Places (NRHP) due to its significance as the roadway encircling the original city center.	The proposed Pedley Source Lines alignment would be within Grand Boulevard (underground).
Main Street	City of Corona locally designated scenic roadway. Designated portion is from 3rd Street to the southern terminus.	Main Street is 0.30 mile south and 0.34 mile west of the proposed Pedley Source Lines alignment.
Ontario Avenue	City of Corona locally designated scenic roadway. Designated portion is from Mangular Avenue to State Street.	Ontario Avenue is 1.0 mile south of the proposed Databank Source Lines alignment, and approximately 0.5 mile south-southwest of Source Line Alternative 3.
Magnolia Avenue	City of Corona locally designated scenic roadway. Designated portion is from Garretson and Ontario Avenues to Rimpau Avenue.	The proposed Databank Lines alignment would be located within designated portion west of Rimpau Avenue for approximately 157 feet (underground). The remaining portion of the alignment (overhead and underground) along Magnolia Avenue would not be within the designated portion of the roadway.

NOTE: The cities of Chino, Eastvale, and Norco do not identify specific local scenic roadways within the vicinity of the Project.

SOURCE: Caltrans, 2016a; Caltrans 2016b; County of Riverside, 2015; City of Corona, 2004.

TABLE 4.1-2
SUMMARY OF PROJECT COMPONENTS, PRIMARY VIEWERS, REPRESENTATIVE PHOTOGRAPHS, AND VISUAL SIMULATIONS

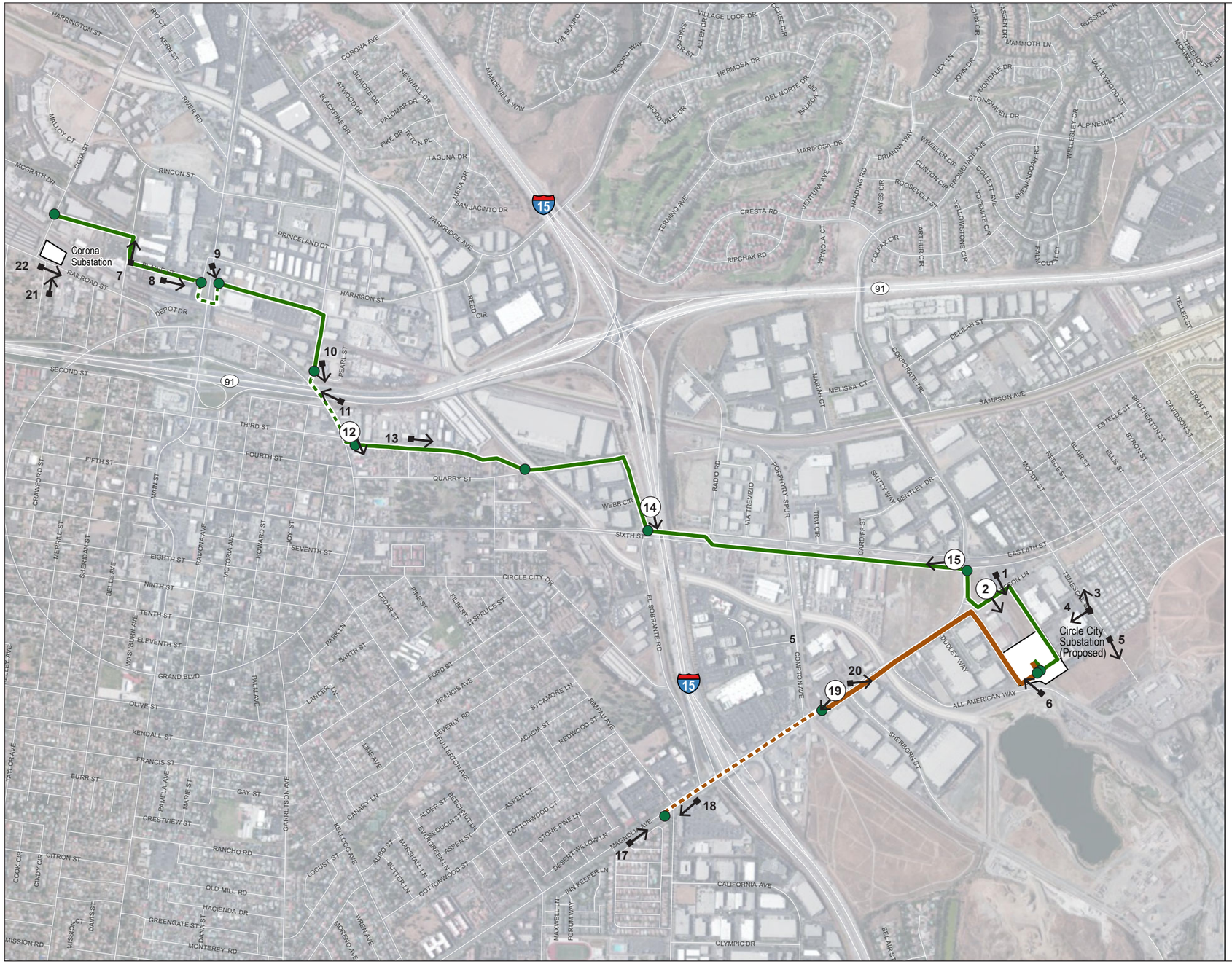
Proposed Project Component (Approximate length/size)	Potentially Affected Viewers	Representative Photographs	Visual Simulation
Circle City Substation Site (11.1 acres)	Motorists, Limited Residents, and adjacent businesses	1 through 6 (Figures 4.1-4a through 4.1-4c)	Viewpoint (VP) 2 – Figure 4.1-5
Source Line Routes (4.7 miles)	Motorists, Residents, and Recreational Users	7 through 20 (Figures 4.1-4d through 4.1-4j)	VP 12 – Figure 4.1-6, VP 14 – Figure 4.1-7, VP 15 – Figure 4.1-8, and VP 19 – Figure 4.1-9
Mira Loma-Jefferson 66 kV Subtransmission Line (10.9 miles)	Motorists, Residents, and Recreational Users	21 through 38 (Figures 4.1-4k through 4.1-4s)	VP 26 – Figure 4.1-10, VP 32 – Figure 4.1-11, and VP 35 – Figure 4.1-12

SOURCE: SCE, 2015 (PEA)

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-1
Regional Landscape Context

This page intentionally left blank



Substation

Pedley Source Lines - Overhead

Pedley Source Lines - Underground

Databank Source Lines - Overhead

Databank Source Lines - Underground

Segment Break

Photograph Viewpoint Location and View Direction

Simulation Viewpoint Location and View Direction

Note: The pole quantities indicated may increase or decrease upon completion of final engineering. Table 3-2: Subtransmission Structure Quantity and Dimensions provides a range of approximate pole quantities based on the preliminary design.

1:15,000

0 1,000 2,000 Feet

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-2

Photo Viewpoint Locations Map
(Source Line Routes)

Subtransmission Line Route - Overhead
Subtransmission Line Route - Underground
Subtransmission Line - Underground Crossing
Segment Break*
County Boundary
Substation
Photograph Viewpoint Location and View Direction
Simulation Viewpoint Location and View Direction

*Segment breaks are identified along the subtransmission line route to facilitate describing the removal and installation activities at different locations along the line.

SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-3
Photo Viewpoint Locations Map
(Subtransmission Line)

Photograph 1. Magnolia Avenue near South Promenade Avenue looking southeast

Photograph 2. Leeson Lane looking southeast*

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4a
Representative Photographs 1 and 2

Photograph 3. South Temescal Street looking north

Photograph 4. South Temescal Street looking west

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

SOURCE: Environmental Vision, 2016

Figure 4.1-4b
Representative Photographs 3 and 4

Photograph 5. South Temescal Street looking south

Photograph 6. All American Way looking northwest

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4c

Representative Photographs 5 and 6

Photograph 7. North Sheridan Street at West Blaine Street looking north

Photograph 8. West Blaine Street near Hope Street looking east

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4d
Representative Photographs 7 and 8

Photograph 9. North Main Street at East Harrison Street looking south

Photograph 10. Grand Boulevard near Joy Street looking south

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4e
Representative Photographs 9 and 10

Photograph 11. SR-91 near Joy Street looking west

Photograph 12. Grand Boulevard near East 3rd Street looking southeast*

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4f
Representative Photographs 11 and 12

Photograph 13. East 3rd Street at East Arroya Avenue looking east

Photograph 14. I-15 looking south*

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4g
Representative Photographs 13 and 14

Photograph 15. East 6th Street near South Promenade Avenue looking west*

Photograph 16. East 6th Street near South Promenade Avenue looking west

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4h
Representative Photographs 15 and 16

Photograph 17. Magnolia Avenue near Rimpau Avenue looking northeast

Photograph 18. Magnolia Avenue near I-5 looking southwest

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4i

Representative Photographs 17 and 18

Photograph 19. Magnolia Avenue near Sherborn Street looking southwest*

Photograph 20. Magnolia Avenue near Sherborn Street looking east

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4j
Representative Photographs 19 and 20

Photograph 21. Cota Street near Railroad Street looking north

Photograph 22. Railroad Street near Cota Street looking southeast

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4k
Representative Photographs 21 and 22

Photograph 23. North Cota Street near Harrison Street looking north

Photograph 24. River Road near Redhead Lane looking northwest

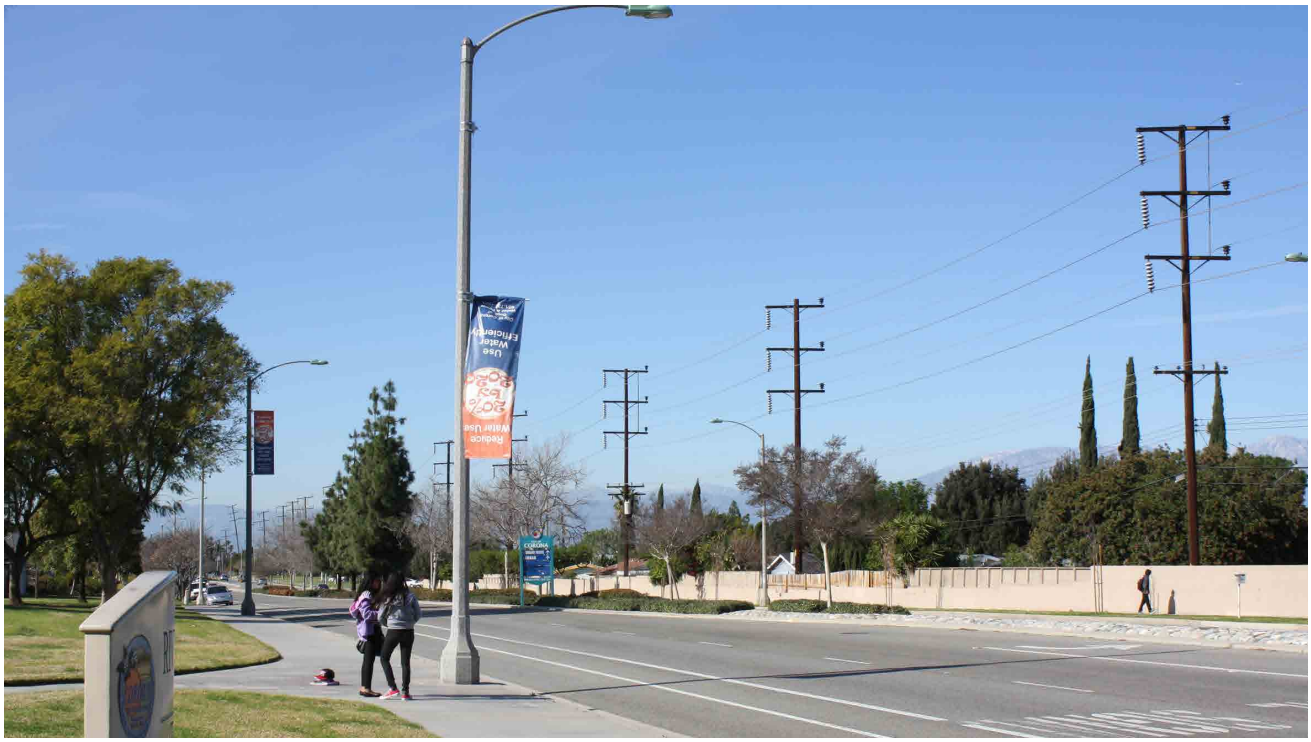
SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4l

Representative Photographs 23 and 24

Photograph 25. Arsenal Way looking west



Photograph 26. River Road Park looking northwest*

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4m
Representative Photographs 25 and 26

Photograph 27. River Road at Auburndale School looking northwest

Photograph 28. River Road at Santa Ana River crossing looking northwest

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4n

Representative Photographs 27 and 28

Photograph 29. Baron Drive near River Road looking southeast

Photograph 30. Hellman Avenue near River Road looking north

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

SOURCE: Environmental Vision, 2016

Figure 4.1-4o

Representative Photographs 29 and 30

Photograph 31. Hellman Avenue at Maddox Court looking northwest

Photograph 32. Hellman Avenue at Landerwood Drive looking north*

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4p
Representative Photographs 31 and 32

Photograph 33. American Heroes Park looking northeast

Photograph 34. Coyote Trail Lane at 65th Street looking north

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4q
Representative Photographs 33 and 34

Photograph 35. James C. Huber Park looking northeast*

Photograph 36. Dairy at Harrison Avenue near Blossom Way looking southwest

SOURCE: Environmental Vision, 2016
* Photograph used for visual simulation

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4r
Representative Photographs 35 and 36

Photograph 37. Haven Avenue at Eucalyptus Avenue looking north

Photograph 38. South Quincy Way looking south toward Mira Loma Substation

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-4s
Representative Photographs 37 and 38

Circle City Substation (Photographs 1 through 6)

Located in the northeastern portion of the City of Corona, the proposed Circle City Substation site is in an industrial area that includes warehouses, commercial buildings, truck and equipment yards, light manufacturing, and a quarry. This approximately 11.1-acre site, which formerly contained a warehouse, is currently vacant, generally level, and includes a curving earth berm near the center of the property. Photographs 1 and 2, which were taken north of the site, show portions of the disturbed substation site, as well as one- and two-story industrial buildings located adjacent to the site (see **Figure 4.1-4a**). Stockpiled material largely blocks views towards the substation site from Photograph 1 (which looks across a business parking lot and Leeson Lane), but Photograph 2, which was taken from Leeson Lane (further southwest than Photograph 1) offers an unobstructed view of the substation site. Leeson Lane and fencing can be seen in the foreground. An open field with stockpiled soil and oak trees can be seen in the middleground along with an existing distribution ~~subtransmission~~ line. Hillsides and graded terraces of the quarry at the base of the mountains can be seen in the background.

The nearest residences to the proposed substation site are located approximately 720 feet to the northeast along South Temescal Street. Photographs 3, 4, and 5 provide views from the terminus of South Temescal Street east of the proposed substation site (see **Figures 4.1-4b** and **4.1-4c**). Photograph 3 provides a view of the residences on South Temescal Street looking northwest from the terminus point. A row of one-story mobile homes is seen with a 4-foot masonry concrete wall. Residential and street landscaping/trees can be seen lining the road and mountains are in the left-hand side of the background. Photograph 4 provides a view from the same location as Photograph 3, but the viewer is facing southwest across the Waste Management storage yard towards the substation site. The viewer is facing the entrance to the Waste Management storage yard from this view point. The entry road, large trucks, metal buildings, and tall vertical light structures can be seen. The proposed substation site is located behind the storage yard and is mostly-screened by the storage yard and green fencing along the perimeter. Photograph 5 is a view from the terminus of South Temescal Street looking southeast towards vacant lots and the All American asphalt plant. An 8-foot green fabric fence screens the view completely, with the exception of mountain peaks above the fence line. Photograph 6 is an open view toward the proposed substation site, looking northwest from All American Way, an adjacent public road on the south side of the substation site that provides access to the quarry. The road, a guardrail, a chain-link fence, and the vacant substation site can be seen in the foreground. White industrial buildings, open grass areas, and trees can be seen throughout the middleground. Mountains can be seen throughout the background (see **Figure 4.1-4c**).

Source Lines (Photographs 7 through 20)

The Pedley Source Lines would extend from a location north of the existing Corona Substation, which is located at the Railroad Avenue/North Cota Street intersection, for approximately 3.5 miles to the proposed Circle City Substation site. From North Cota Street, the Pedley Source Lines would travel along Blaine Street and pass through an area characterized by a mix of industrial, commercial, and residential uses as shown in Photographs 7 and 8 (see **Figure 4.1-4d**). Existing built features include a mix of outdoor storage yards surrounded by chain-link fence and landscaped office/industrial complexes comprised of one- and two-story buildings and surface

parking areas, as well residential uses varying from one to four-stories. Vertical elements such as mature trees and streetlights can also be seen lining North Sheridan Street and Blaine Street. The Pedley Source Lines would continue east, crossing North Main Street, a six-lane arterial landscaped with tall palm trees in the median and along the roadside, as well as vertical steel streetlights and traffic signals. Refer to **Figure 4.1-4e** for Photograph 9 taken at North Main Street and East Harrison Street looking south.

Turning south at Joy Street, the proposed Pedley Source Lines would span the Metrolink commuter rail line and continue to East Grand Boulevard where they would travel under the SR 91 freeway corridor, as shown in Photographs 10 and 11 (see **Figures 4.1-4e** and **4.1-4f**). For approximately 1,000 feet, the proposed lines would continue underground along Grand Boulevard. This circular-oriented roadway is a City of Corona designated scenic highway and is listed on the National Register of Historic Places due to its significance as the roadway encircling the original city center. The area where the Pedley Source Lines would follow Grand Boulevard is characterized by industrial and commercial uses, such as automobile repair shops and a vehicle storage yard, in addition to a limited number of residences, as shown in Photographs 10, 11, and 12. Vertical structures seen along Grand Boulevard include streetlights (standard and ornamental) and traffic signals; in addition, distribution power lines can be seen crossing the roadway in Photograph 12 (see **Figure 4.1-4f**). Turning east, the Pedley Source Lines would continue along East 3rd Street, as seen in Photographs 12 and 13. In this area, residences face East 3rd Street for approximately two blocks. Photograph 13 shows residences as well as vertical structures, including existing distribution power lines and streetlights (see **Figure 4.1-4g**).

Photograph 14, which was taken from southbound I-15 (an Eligible State Scenic Highway), provides a view looking south toward the location where the Pedley Source Lines would cross over I-15 (see **Figure 4.1-4g**). From this location, the lines would span the freeway and continue along East 6th Street for approximately 0.8 mile before turning south onto Magnolia Avenue and continuing to the proposed Circle City Substation site. The freeway dominates the foreground and middleground of this photo, while the mountains dominate the background. Vertical structures in the view include streetlights and freeway signs. Photographs 15 and 16 show the visual character of East 6th Street and Magnolia Avenue; both are four-lane arterial streets with recently landscaped medians and trees along the street. The area is characterized by large, commercial, one- and two-story buildings, including office parks and warehouses with fenced yards (see **Figure 4.1-4h**). The Santa Ana Mountains can be seen above the buildings as well as mature trees to the west from East 6th Street and Magnolia Avenue. Vertical structures along these roadways include streetlights and traffic signals.

Photograph 17 provides a view from Magnolia Avenue near Rimpau Avenue, which is the interconnection point for the proposed Databank Source Lines to the existing subtransmission system. The view includes a variety of tall trees along the street, traffic signals, utility structures and power lines, as well as other vertical elements. Photograph 18 depicts a location near where the Databank Source Lines would cross the I-15 freeway underground through a utility bridge cell located within the Magnolia Avenue Bridge (see **Figure 4.1-4i**). Photographs 19 and 20, which were taken from Magnolia Avenue near Sherborn Street (not within the locally-designated scenic portion of the road), show the location where the Databank Source Lines would be installed

aboveground. Views along this portion of Magnolia Avenue include vertical elements, such as trees, streetlights, and traffic signals. Farther east on Magnolia Avenue, utility poles line the road, as depicted in Photograph 20 (see **Figure 4.1-4j**).

Mira Loma-Jefferson 66 kV Subtransmission Line (Photographs 21 through 38)

The proposed Mira Loma-Jefferson 66 kV Subtransmission Line would begin at a connection point just north of the existing Corona Substation, and would extend north to Mira Loma Substation in the southern portion of the City of Ontario. The visual character along this approximately 10.9-mile route ranges from established and more recently developed suburban residential areas to open pasture, agricultural cropland, and commercial/industrial development. The Mira Loma-Jefferson Subtransmission Line would also cross the Santa Ana River and pass near public parks and open space.

The existing Corona Substation is primarily surrounded by industrial development on relatively large parcels; however, single-family residences are also along the south side of Railroad Street, as shown in Photographs 21 and 22 (see **Figure 4.1-4k**). From some nearby locations, portions of the Corona Substation can be seen above the concrete perimeter wall. Residential landscaping, streetlights, and steel and wood utility poles can be seen from locations throughout this neighborhood.

As depicted in Photograph 23, the area along North Cota Street to River Road, where the proposed Mira Loma-Jefferson Subtransmission Line would be installed underground, is characterized by industrial/office parks with subtransmission line poles along both sides of North Cota Street. Photograph 24 faces northwest and shows a portion of River Road, where the subtransmission line would be installed aboveground, with trees and landscaping along the roadside and within the median (see **Figure 4.1-4l**). In this area, wood utility poles, overhead lines, and streetlights are visible along the street, and landscaped multi-family homes with paved off-street parking face River Road. Photographs 25 and 26 depict the visual character in the residential area along the western portion of River Road, which includes single-family houses, landscaping, and pre-cast concrete or stucco perimeter walls (see **Figure 4.1-4m**). Photograph 25 shows the existing transmission line above residences. Photograph 26 shows the wood utility poles that are located on residential properties. Open views toward the proposed Mira Loma-Jefferson Subtransmission Line corridor are available from River Road Park, a neighborhood park with lawns, scattered trees, a play structure, and a community center building. Auburndale Intermediate School, which is shown in Photograph 27, also has open views toward the proposed Mira Loma-Jefferson Subtransmission Line (see **Figure 4.1-4n**). Views from Fairview Park, located to the south, are partially screened by trees and houses. Farther west along the border between the cities of Corona and Norco, known as "Horsetown USA," large lots with horse facilities are common and the pattern of single-family residential development is interspersed with larger lots and pastures.

The proposed Mira Loma-Jefferson Subtransmission Line would cross the Santa Ana River at the southern border of the City of Eastvale. Photograph 28, taken from River Road where the line would cross the river with replaced H-Frame poles, shows an existing subtransmission line supported on H-frame structures and light-weight steel (LWS) poles along River Road with ornamental light poles on both sides of the bridge (see **Figure 4.1-4n**). Taken from Baron Drive

near River Road, Photograph 29 shows dense vegetation along the river corridor and Prado Basin Park—a public open space area with recreation trails, one of which follows the Santa Ana River (see **Figure 4.1-4o**). In views from roadways and open space areas located near the Santa Ana River, the surrounding mountains appear in the background. West of the river, the Project passes Cross Roads Riverview Park, a public open space.

The proposed subtransmission line would then extend north for approximately ~~5~~ 2 miles along the ~~western~~ eastern edge of ~~suburban residential areas in~~ the City of ~~Eastvale~~ Chino, and travel north along Hellman Avenue through a mixture of open, agricultural areas and single-family residential neighborhoods before crossing back to the western edge of the City of Corona, as shown in Photographs 30, 31, and 32 (see **Figures 4.1-4o** and **4.1-4p**). Noticeable vertical elements seen in the landscape include utility poles, subtransmission towers, and streetlights. Residential developments in the area characteristically include approximately 8- to 10-foot-high, pre-cast perimeter walls along the adjacent arterial streets; new residential development can be seen under construction in Photograph 32.

Near Prairie Smoke Road, the proposed Mira Loma-Jefferson Subtransmission Line would turn northeast at American Heroes Park and follow an existing Southern California Edison (SCE) utility easement, which is approximately 500 feet wide and contains overhead lines and steel-lattice towers, as depicted in Photograph 33. Utility poles, overhead subtransmission lines, and streetlights are characteristic landscape elements in this vicinity. As depicted in Photograph 34, views from this residential area include open pastures with overhead transmission lines, steel-lattice towers, and poles, with mountains in the background (see **Figure 4.1-4q**). Photograph 35 shows the paved James C. Huber Park skateboard area with landscaped open space and overhead transmission lines and structures within the park setting while mountains appear in the background (see **Figure 4.1-4r**).

From Bellgrave Avenue near Harrison Avenue, the proposed subtransmission line would proceed approximately 2 miles northeast through a rural area within the City of Ontario, to its terminus at the existing Mira Loma Substation. The general landscape is characterized by dairies, with various barn structures, rural residences, and pastures. Photograph 36 shows the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line on poles and two existing 220 kV transmission lines on steel lattice towers crossing one of these dairies (see **Figure 4.1-4r**). Nearby residential development is located across Harrison Avenue, at the northern border of the City of Eastvale. Limited vegetation provides intermittent screening in this area, and open vistas are typical across the landscape with the San Gabriel and Santa Ana mountains in the background, as shown in Photograph 37 (see **Figure 4.1-4s**). The representative photographs from this area illustrate that the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be located within an existing utility corridor, with overhead transmission lines, steel poles, and steel lattice towers. Additional vertical elements in this landscape include wood distribution poles.

Mira Loma Substation lies between a rural area dominated by dairies and an industrial area characterized by low-rise building complexes with landscaped parking and loading areas. Open views are available toward the substation from a multi-family residential area located to the north, as shown in Photograph 38, as well as from scattered rural residences (see **Figure 4.1-4s**).

Although there is a screening fence along South Quincy Way, views of the substation are only partially screened from this location. Lattice towers and vertical substation components can be seen from these residences. In addition, Colony High School, located approximately 0.2 mile northwest of the substation, also has relatively unobstructed views of the facility.

4.1.1.3 Viewer Types and Exposures

The potentially affected viewer groups within the Project area primarily include motorists and recreational users. Viewer exposure conditions were determined based on knowledge of the proposed Project areas and site visits conducted by ESA staff. Variables considered include the viewing distance, angle of view, the extent to which views are screened or open, and duration of view. Viewing angle and extent of visibility considers the relative location of the proposed Project facility to the viewer and whether visibility conditions are enclosed or panoramic, or limited by intervening vegetation, structures, or terrain. Duration of view pertains to the amount of time the proposed Project facilities would typically be seen from a sensitive viewpoint. In general, duration of view would be less in instances where Project components would be seen for short or intermittent periods (such as from major travel routes and recreation destination roads) and greater in instances where Project components would be seen regularly and repeatedly (such as from public use areas).

Motorists, the largest viewer group, are people traveling on public roadways, including regional highways such as I-15 and SR 91, as well as local streets such as River Road, Hellman Avenue, East 6th Street, Blaine Street, Grand Boulevard, Leeson Lane, Magnolia Avenue, etc. Motorists include a variety of roadway travelers; both local and regional travelers who may be familiar with the visual setting, and travelers who use these streets on a less regular basis. Public roadways in the area are generally well traveled. However, affected views are typically brief in duration due to travel speed and generally last less than 1 minute. During commute periods, motorist views may last up to 10 minutes or more, depending on traffic conditions.

Another viewer group includes recreational users of the parks and open space facilities that are located along the Project alignment or in the vicinity with views of the Project. Since the Project area and its surroundings comprise generally flat topography, the views of the Project for recreational users is generally limited to 1 mile. There are no overlooks, or elevated trails within the larger surrounding area that would provide views of the Project. As shown in Table 4.16-1, *Parks within 1 Mile of the Proposed Project*, in Section 4.16, *Recreation*, there are several local parks and recreation facilities within the vicinity of the Project. Facilities directly adjacent to the Project would generally have the most affected viewers and include River Road Park in Corona, James C. Huber Park and American Heroes Park in Eastvale, as well as recreation users along the Santa Ana River. Recreational views tend to be moderate in duration.

4.1.1.4 Visual Sensitivity

Visual sensitivity is a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts, given the combined factors of landscape visual quality, viewer types, and exposure conditions. **Table 4.1-3**, *Summary of Visual Sensitivity Findings: Viewer Types, Visual Quality, and View Exposure,* describes the visual sensitivity of the major viewer types that would be affected by the proposed Project.

TABLE 4.1-3
SUMMARY OF VISUAL SENSITIVITY FINDINGS: VIEWER TYPES, VISUAL QUALITY, AND VIEW EXPOSURE

Viewer Type / Location	Visual Quality	View Exposure	Visual Sensitivity	Visible Project Elements
Roads/Highways				
Leeson Lane (Corona) VP 2, Figure 4.1-5	Indistinctive	• Foreground Distance • Unobstructed View • Low Number of Viewers • Short View Duration	Low to Moderate	Circle City Substation site
Grand Boulevard (Corona) VP 12, Figure 4.1-6	Representative	• Foreground Distance • Unobstructed View • Moderate to High Number of Viewers • Short to Moderate View Duration	Moderate	Source Lines
I-15 (Corona) VP 14, Figure 4.1-7	Representative	• Foreground Distance • Partially Obstructed View • High Number of Viewers • Short View Duration	Moderate	Source Lines
East 6th Street near Magnolia Avenue (Corona) VP 15, Figure 4.1-8	Representative	• Foreground/Middleground Distance • Partially Obstructed View • High Number of Viewers • Short View Duration	Moderate to High	Source Lines
Magnolia Avenue near Sherborn Street (Corona) VP 19, Figure 4.1-9	Representative	• Foreground Distance • Unobstructed View • High Number of Viewers • Short View Duration	Moderate	Source Lines
Hellman Avenue at Landerwood Drive (Eastvale/Chino) VP 32. Figure 4.1-11	Representative	• Foreground/Middleground Distance • Unobstructed View • High Number of Viewers • Short View Duration	Moderate	Subtransmission Lines
Park/Recreation Areas				
River Road Park (Corona) VP 26. Figure 4.1-10	Representative	• Foreground/Middleground Distance • Partially Obstructed View • Moderate to High Number of Viewers • Short to Long View Duration	Moderate to High	Subtransmission Lines
James C. Huber Park (Eastvale) VP 35. Figure 4.1-12	Representative	• Foreground Distance • Partially Obstructed View • Moderate to High Number of Viewers • Short to Long View Duration	Moderate to High	Subtransmission Lines

4.1.1.5 Regulatory Setting

Federal

Code of Federal Regulations Title 14

All airports and navigable airspace not administered by the United States Department of Defense are under the jurisdiction of the Federal Aviation Administration (FAA). Title 14, Part 77 of the Code of Federal Regulations establishes the standards and required notification for obstructions affecting navigable airspace. In general, construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long out to a horizontal distance of 20,000 feet—are considered potential obstructions and require FAA notification. In addition, construction projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway measuring 3,200 feet or less out to a horizontal distance of 10,000 feet are considered potential obstructions and require FAA notification.

State

California Department of Transportation Scenic Highway Program

California's Scenic Highway Program was created by the state Legislature in 1963 with the purpose to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways, or have been designated as such. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation. While local jurisdictions may propose adding routes with outstanding scenic elements to the list of eligible highways, state legislation is required for them to become officially designated. As shown in Table 4.1-1, portions of I-15 and SR 91 are designated as Eligible State Scenic Highways by Caltrans (Caltrans, 2016a and b).

Local

California Public Utilities Commission General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to visual resources that would otherwise be relevant to the Project and alternatives are described below.

Riverside County General Plan

The following policies identified in the Riverside County General Plan pertain to visual resources (County of Riverside, 2014):

> *Policy C 19.1:* Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' Scenic Highways Plan.
>
> *Policy LU 13.1:* Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.

Policy LU 13.3: Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.

Policy LU 13.4: Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.

Policy LU 13.5: Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.

Policy LU 13.8: Avoid the blocking of public views by solid walls.

Policy OS 21.1: Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.

Policy OS 22.1: Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.

Policy OS 22.3: Encourage joint efforts among federal, state, and county agencies, and citizen groups to ensure compatible development within scenic corridors.

Policy OS 22.4: Impose conditions on development within scenic highway corridors requiring dedication of scenic easements consistent with the Scenic Highways Plan, when it is necessary to preserve unique or special visual features.

Policy OS 22.5: Utilize contour grading and slope rounding to gradually transition graded road slopes into a natural configuration consistent with the topography of the areas within scenic highway corridors.

City of Chino General Plan

The following policy of the City of Chino General Plan pertains to visual resources (City of Chino, 2010).

Policy P1: New development should not obstruct, detract from or negatively affect views of the San Gabriel Mountains to the north and the Chino Hills to the south. These views are an integral part of the City's geographic space and allow residents to develop a sense of place unique to Chino.

City of Corona General Plan

The following goals and policies of the City of Corona General Plan pertain to visual resources (City of Corona, 2004).

Policy 6.1.14: Ensure that, to the extent possible, all pipelines and electrical transmission lines are placed underground.

Policy 7.12.3: Continue to provide for the undergrounding of new and existing electrical distribution lines unless it is determined not to be economically or practically feasible as a result of significant environmental or other constraints.

Policy 10.22.1: Create unobstructed view corridors or viewsheds of the San Bernardino, Santa Ana, and San Gabriel Mountains, the Chino and La Sierra Hills, and other significant natural features from public spaces such as parks, termination of streets and community trails,

community centers, and school properties, where feasible, as part of the design of development projects.

Policy 10.23: Regulate new development through provisions that require an analysis of impacts of development on the quality of the City's designated highways and corridors.

City of Eastvale General Plan

The following policies of the City of Eastvale General Plan regarding visual resources may be applicable to the Project (City of Eastvale, 2012).

Policy DE-34: Non-residential developments shall be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.

Policy DE-44: All outdoor storage areas shall be visually screened with attractive fencing/walls and landscaping.

Policy C-29: Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

City of Norco General Plan

The City of Norco General Plan does not contain policies regarding visual resources that would be applicable to the Project (City of Norco, 2001).

City of Ontario General Plan

The following policies of the City of Ontario General Plan regarding visual resources may be applicable to the Project (City of Ontario, 2010).

Policy CD1-5: View Corridors. We require all major north-south streets be designed and redeveloped to feature views of the San Gabriel Mountains, which are part of the City's visual identity and a key to geographic orientation. Such views should be free of visual clutter, including billboards and may be enhanced by framing with trees.

Policy LU2-6: Infrastructure Compatibility. We require infrastructure to be aesthetically pleasing and in context with the community character.

Policy LU2-7: Inter-jurisdictional Coordination. We maintain an ongoing liaison with IEUA, LAWA, Caltrans, Public Utilities Commission, the railroads and other agencies to help minimize impacts and improve the operations and aesthetics of their facilities.

4.1.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant aesthetic effects on the environment if it would:

a) Have a substantial adverse effect on a scenic vista;

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

c) Substantially degrade the existing visual character or quality of the site and its surroundings; or

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

4.1.2.1 Definition and Use of Significance Criteria

An adverse visual impact may occur when: (1) an action perceptibly changes the existing physical features of the landscape that are characteristic of the region or locale; (2) an action introduces new features to the physical landscape that are perceptibly uncharacteristic of the region or locale, or become visually dominant in the viewshed; or (3) an action blocks or totally obscures aesthetic features of the landscape. The degree of visual impact depends on the noticeability of the adverse change. The noticeability of a visual impact is a function of a project's features, context, and viewing conditions (angle of view, distance, and primary viewing directions). The key factors in determining the degree of visual change are visual contrast, project dominance, and visual screening. The interaction of visual change with the components of visual sensitivity (visual quality, viewer types and volumes, and viewer exposure; see Section 4.1.1, *Setting*) is discussed below under "Overall Adverse Visual Impact."

Visual Contrast

Visual contrast is a measure of the degree of change in line, form, color, and texture that a project would create, when compared to the existing landscape. Visual contrast ranges from none to strong, and is defined as:

- None –The element contrast is not visible or perceived;
- Weak –The element contrast can be seen but does not attract attention;
- Moderate –The element contrast begins to attract attention and begins to dominate the characteristic landscape; and
- Strong – The element contrast demands the viewer's attention and cannot be overlooked.

Project Dominance

Visual dominance is a measure of a project feature's apparent size relative to other visible landscape features in the viewshed, or seen area. A feature's dominance is affected by its relative location in the viewshed and the distance between the viewer and feature. The level of dominance can range from subordinate to dominant.

Visual Screening

View blockage or impairment is a measure of the degree to which a project's features would obstruct or block views to aesthetic features due to its position and/or scale. Blockage of aesthetic landscape features or views can cause adverse visual impacts, particularly in instances where scenic or view orientations are important to the use, value, or function of the land use.

Overall Adverse Visual Impact

Overall adverse visual impact reflects the composite visual changes to both the directly affected landscape and from sensitive viewing locations. The visual impact levels referenced in this EIR indicate the relative degree of overall change to the visual environment that the Project and alternatives would create, considering visual sensitivity, visual contrast, view blockage, and project dominance.

In general, the determination of impact significance is based on combined factors of Visual Sensitivity and the degree of Visual Change that the Project or alternative would cause. **Table 4.1-4**, *Guidelines for Determining Adverse Visual Impact Significance*, shows how the inter-relationship of these two overall factors determines whether adverse visual impacts are significant, and following the table are descriptions of the various impact classifications for aesthetics.

TABLE 4.1-4
GUIDELINES FOR DETERMINING ADVERSE VISUAL IMPACT SIGNIFICANCE

	Overall Visual Change				
Overall Visual Sensitivity	**Low**	**Low to Moderate**	**Moderate**	**Moderate to High**	**High**
Low	No Impact	No Impact	Less than Significant	Less than Significant	Less than Significant
Low to Moderate	No Impact	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Moderate	Less than Significant	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant
Moderate to High	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant	Significant
High	Less than Significant	Potentially Significant	Potentially Significant	Significant	Significant

No Impact. Effects may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

Less than Significant. Impacts are perceived as negative but do not exceed environmental thresholds.

Potentially Significant. Impacts are perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances (e.g., orientation of the viewer).

Significant. Impacts with feasible mitigation may be reduced to less-than-significant levels or avoided altogether. Without mitigation or avoidance measures, significant impacts would exceed environmental thresholds.

4.1.2.2 Visual Simulations

The Project's appearance is portrayed in a set of before-and-after views, as seen from key public viewpoints within the area. This visual analysis is based on a review of technical data, including Project maps and drawings provided by SCE, aerial and ground level photographs of the Project area, local planning documents, and computer-generated visual simulations. Field observations were conducted in February and July 2016 to document existing visual conditions in the Project area and to identify potentially affected sensitive viewing locations.

The analysis describes change to existing visual resources and assesses viewers' response to that change. Central to this assessment is an evaluation of representative views from which the Project would be visible to the public. To document the visual changes that would occur, visual simulations show the Project from key observation points (KOPs). These changes were assessed, in part, by evaluating the computer-generated visual simulations and comparing them to the existing visual environment.

The simulation images portray the location, scale, and appearance of the Project as seen from publicly accessible KOPs within the Project area. The KOP locations were selected to represent views seen by the largest number of viewers, primarily within residential or public recreation areas and along scenic routes or other public roadways.

Technical methods employed for producing the computer-generated simulation images include high-resolution digital site photography using a single-lens reflex camera with a 50-millimeter lens or equivalent that represents a horizontal-view angle of 40 degrees. The systematic documentation of photographic viewpoints employed Global Positioning System (GPS) recording and photograph log sheet and basemap annotation. Three-dimensional (3-D) computer modeling for proposed structures, which was developed using engineering design data supplied by SCE, was combined with geographic information system and engineering data, as well as digital aerial photographs of the existing sites, to produce digital modeling for visual analysis and simulation. Simulation viewpoint locations were incorporated based on GPS field data, using 5 feet above ground as the assumed eye level.

To verify scale and viewpoint locations, computer "wireframe" perspective plots were overlaid on the KOP photographs. Digital visual simulation images were then produced based on computer renderings of the 3-D modeling combined with selected photographs. The final "hard-copy" visual simulation images contained in this visual analysis were printed from the digital image files and produced in color on 11-inch by 17-inch sheets. As shown in **Figures 4.1-5** through **4.1-12**, the visual simulations are illustrated as an existing view with a simulation below that portrays the Project from the corresponding KOP. The set of illustrations are representative of the visual change that would be associated with the Project.

Existing View from Leeson Lane looking southeast (VP 2)

Visual Simulation of Proposed Project (Circle City Substation and Source Line)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-5

Existing View and Visual Simulation from Leeson Lane

Existing View from Grand Boulevard near East Third Street looking southeast (VP 12)

Visual Simulation of Proposed Project (Source Line Route)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-6

Existing View and Visual Simulation from Grand Boulevard

Existing View from Interstate 15 looking south (VP 14)

Visual Simulation of Proposed Project (Source Line Route)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-7

Existing View and Visual Simulation from Interstate 15

Existing View from East 6th Street near Magnolia Avenue looking west (VP 15)

Visual Simulation of Proposed Project (Source Line Route)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-8
Existing View and Visual Simulation from
East 6th Street near Magnolia Avenue

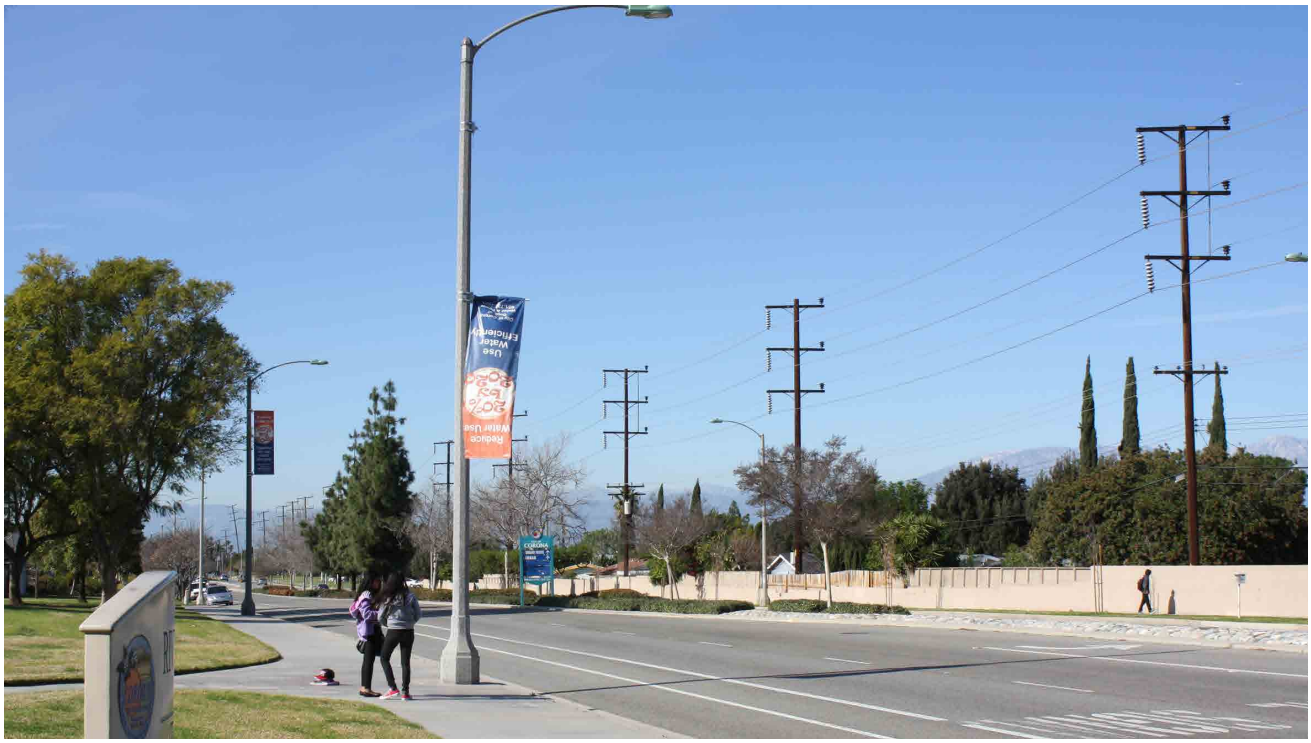
Existing View from Magnolia Avenue near Sherborn Street looking southwest (VP 19)

Visual Simulation of Proposed Project (Source Line Route)

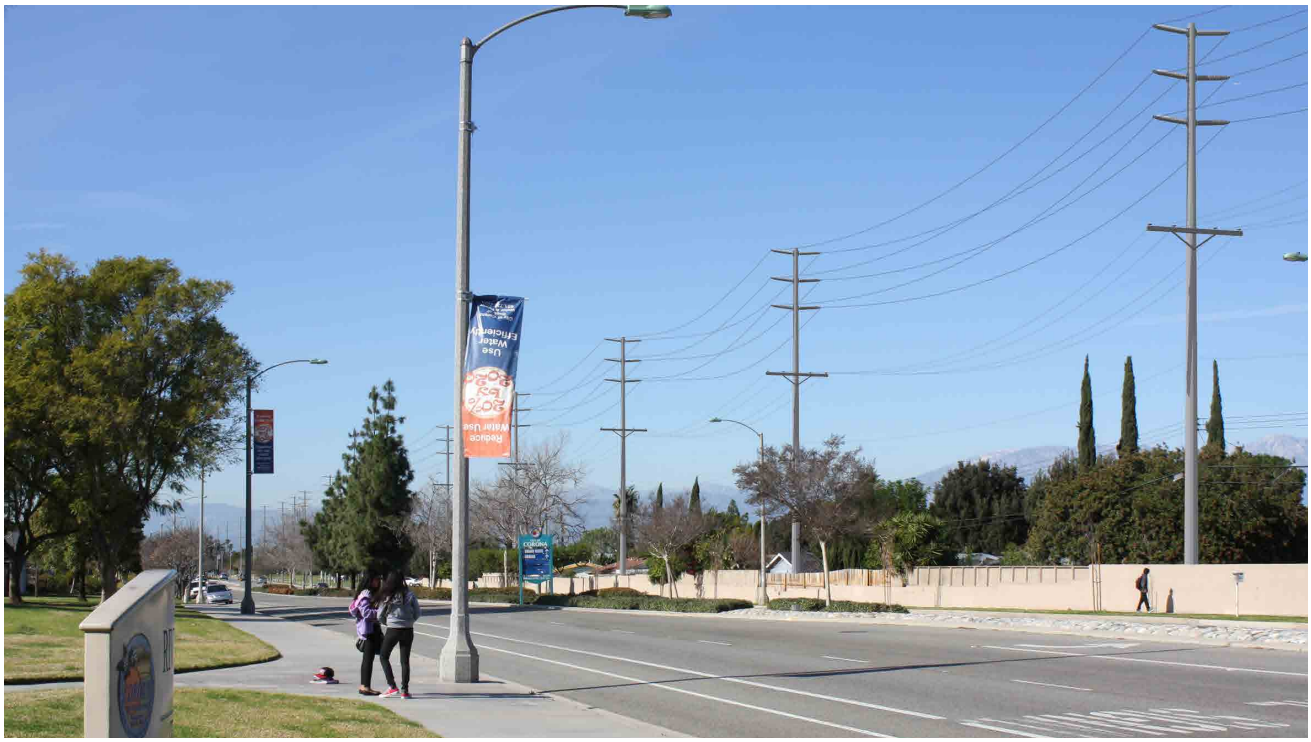
SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-9
Existing View and Visual Simulation from
Magnolia Avenue near Sherborn Street



Existing View from River Road Park looking northwest (VP 26)



Visual Simulation of Proposed Project (Subtransmission Line)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-10

Existing View and Visual Simulation from River Road Park

Existing View from Hellman Avenue at Landerwood Drive looking north (VP 32)

Visual Simulation of Proposed Project (Subtransmission Line)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-11
Existing View and Visual Simulation from
Hellman Avenue at Landerwood

Existing View from James C. Huber Park looking northeast (VP 35)

Visual Simulation of Proposed Project (Subtransmission Line)

SOURCE: Environmental Vision, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.1-12

Existing View and Visual Simulation from Huber Park

4.1.3 Applicant Proposed Measures

SCE has proposed the following applicant proposed measure (APM) to minimize impacts on aesthetic resources from the Project. The impact analysis assumes that the APM would be implemented (i.e., part of the Project) to reduce impacts to aesthetic resources as discussed below.

> **APM-AES-01: Construction Lighting.** If temporary construction lighting is required, SCE would use shielded construction light fixtures and lighting would be directed away from nearby residences.

4.1.4 Impacts and Mitigation Measures

a) Have a substantial adverse effect on a scenic vista.

Impact 4.1-1: The Project could adversely affect scenic vistas. *Significant and Unavoidable* (Class I)

For the purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. In general, existing views of the surrounding mountains, as seen from several local roadways, and locations throughout the Project area, are considered locally scenic, as identified in the County of Riverside and the cities of Corona and Chino general plans. As described in further detail in the Impact 4.1-3 discussion, the Project would replace, modify, or introduce new structures (subtransmission poles and lines) along roadways within the Project area that could partially screen views of the surrounding mountains. Motorists would comprise the majority of affected users. As described below, in some cases visual changes would be incremental given the brief duration of motorists and the presence of existing utility structures and other vertical elements, such as light and sign poles along these roadway corridors. However, in other cases, the Project would introduce dominant contrasting features (subtransmission poles and lines) against the mountain backdrop (Santa Ana, San Gabriel, and San Bernardino mountains and Chino Hills) that would adversely affect scenic vistas for some viewers. Impacts would be significant.

> **Mitigation Measure 4.1-1:** SCE and/or its contractors shall use subtransmission line conductors that are non-specular and non-reflective and insulators that are non-reflective.

This mitigation measure would reduce perceived visual changes, and corresponding adverse effects to scenic vistas, created by new subtransmission poles and lines, by requiring that conductors are non-specular and non-reflective and insulators are non-reflective. However, the impact would continue to be significant and unavoidable.

> **Significance after Mitigation:** Significant and unavoidable.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (No Impact)

The Project would not be visible from any officially Designated State Scenic Highway. The closest designated highway is a portion of SR 91 in Orange County, located approximately 8 miles to the west. However, as shown in Table 4.1-1, the Project would be located in the proximity of Eligible State Scenic Highways I-15 and SR 91. The proposed Pedley Source Lines would cross SR 91 underground and I-15 above ground. The Databank Source Lines would cross I-15 within the Magnolia Avenue I-15 Bridge. There are no trees, rock outcroppings, historic buildings, or other scenic resources at the Project crossings of these highways that would be affected by the Project. Therefore, the Project would not substantially damage scenic resources within a state scenic highway during construction, operation, or maintenance and no impact would occur.

The proposed source lines would also cross the following two scenic roadways in the City of Corona: Grand Boulevard and Magnolia Avenue. The Pedley Source Lines would be installed underground at Grand Boulevard and the Databank Source Lines would be installed underground within the approximately 160-foot designated portion (west of Rimpau Avenue) of the Magnolia Avenue crossing of SR 91. The remaining portion of the Project alignment (overhead and underground) along Magnolia Avenue would not be within the designated portion of this roadway. There are no trees, rock outcroppings, historic buildings, or other scenic resources at the Project crossings of these roadways that would be affected by the Project. Therefore, the Project would not substantially damage scenic resources within locally designated scenic roadways during construction, operation, or maintenance and no impact would occur.

---

c) Substantially degrade the existing visual character or quality of the site and its surroundings

Impact 4.1-2: Construction of the Project could degrade the existing visual character or quality of the sites and their surroundings during the construction period. *Less than significant* (Class III)

Construction-related visual impacts would result from the presence of equipment, materials, and work crews at the proposed Circle City Substation site, the existing substations, as well as along the proposed subtransmission line and source lines corridors, and on local access roads and staging areas. The construction impacts to visual quality would be relatively short-term, approximately 18 months in total, although impacts along the subtransmission line and source lines corridors would be of substantially shorter duration at any one location because the work would be conducted primarily in a linear fashion along the proposed alignments.

Circle City Substation

The proposed Circle City Substation would be constructed on a 19.5-acre site in the City of Corona. The substation would be comprised of a 420-foot by 387-foot facility located on approximately 11.1 acres of the site (see Figure 2-4b, *Proposed Circle City Substation).* The substation site is bordered by industrial and commercial buildings to the north and west; a Waste

Management storage yard immediately to the east; a vacant lot to the southeast; and the All American Asphalt Plant to the south, including an equipment storage yard and detention basin for the asphalt plant. A row of residences on the other side of the storage yard along South Temescal Street are located 780 feet to the east. Although the proposed Circle City Substation site is relatively flat, the substation pad would be graded to maintain a minimum of one-percent slope to drain toward the north. The enclosed substation surface would be covered with permeable material (e.g., crushed rock) in areas where no paving or structures would be placed. The substation site would be enclosed on all sides by an 8-foot-high perimeter concrete masonry unit block wall with a light tan color. Five strands of barbed wire would be affixed near the top of the wall on the inside; the barbed wire would not be visible from outside of the substation site.

Heavy equipment such as earth movers, dump trucks, cranes, forklifts, backhoes, road graders, paving rollers, excavators, etc., would be required for construction of the substation. In addition, construction of the substation would require truck trips on the proposed access roads, located along the backside of industrial and commercial buildings and businesses. Primary access to the substation site would be from Leeson Lane along the eastern corridor of the substation property, while secondary access to the substation would be from Leeson Lane along the western corridor of the substation property, as described in Section 2.5.1.8, *Substation Access,* and shown on Figure 2-2.

Earthmoving activities and introduction of heavy equipment and truck trips would create visual impacts to viewers adjacent to the substation site. The nearest viewers to the proposed substation site would be employees at the Waste Management storage yard, the asphalt plant, and other businesses adjacent to the site. Views of the site from residences east of the site along South Temescal Street look across the Waste Management storage yard towards the southeastern corner of the site. Views are partially or completely screened by existing built features such as existing residential fencing and the Waste Management storage yard, including a green screening fence (See Photograph 4 of Figure 4.1-4b). Regardless, residents and employees at adjacent residences and businesses would have views of taller construction equipment and vertical substation structures being constructed. Employees of the asphalt plant would have open views of the substation site. However, visual impacts in the vicinity of the substation site would be temporary, lasting approximately 12 months. In addition, introduction of construction equipment and materials would be generally consistent with the industrial visual character of the area and with equipment currently existing at the asphalt plant site storage/parking area. Therefore, construction of the substation would not substantially degrade the industrial visual character of the area. The impact would be less than significant.

Staging Yards

During construction, SCE would use one or more of the seven potential temporary staging yards, identified in Section 2.6.2, *Staging Yards and Work Areas* and in Figure 2-9, *Potential Staging Yard Locations.* Potential staging yards would vary in size, ranging from 0.5 to 8.0 acres. Staging yards would be used as a reporting location for workers, vehicle and equipment parking, and material storage. These areas also may have construction trailers for supervisory and clerical personnel. Staging areas would be lit as needed for safety and security. Materials that would commonly be stored at the substation construction staging yard would include, but are not limited

to: portable sanitation facilities; electrical equipment; pull boxes; and line hardware. Materials that would commonly be stored at the subtransmission, and/or telecommunications construction staging yards would include, but not be limited to: construction trailers, construction equipment, portable sanitation facilities, steel bundles, steel/wood poles, conductor reels, overhead ground wire or overhead optical ground wire reels, hardware, insulators, cross arms, signage, consumables, such as fuel and filler compound, waste materials for salvaging, recycling, or disposal, and storm water best management practice (BMP) materials, such as straw wattles, gravel, and silt fences.

Construction staging yard areas would first be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Preparation of the staging yard would include the installation of temporary perimeter fencing and, depending on existing ground conditions at the site, the application of gravel or crushed rock. Any land that may be disturbed at the staging yards would be restored to near pre-construction conditions or to the landowner's requirements following the completion of construction.

As shown in Table 2-3, *Potential Staging Yards*, four of the potential staging yards (Nos. 1, 2, 6, and 7) are located within previously disturbed industrial areas including three SCE substations and SCE's Ontario Service Center. One potential staging yard (No. 3) is located directly adjacent to the existing SCE Mira Loma Substation in a vacant field and one (No. 4) is within a vacant field in a rural area. Staging yards Nos. 1 and 5 are located at the proposed Circle City Substation site and Substation Alternative Site, respectively. The degree of visual change associated with operation of temporary staging yards within SCE substation sites would be low, as the staging areas would be located on sites already in industrial use, and additional equipment brought to the site during the temporary construction period would be visually consistent with the kinds of equipment already on-site. Temporary perimeter fencing also would be installed. Potential staging yards located in vacant fields (Nos. 3 and 4) would be briefly visible to passing motorists, but would not be visible from any parks or residential areas. Staging yards would be used on a temporary basis, and adverse visual impacts associated with operation of these temporary sites would be limited to the approximately 18-month construction period. SCE would restore any land that may be disturbed at the staging yards to near pre-construction conditions, or to the conditions agreed upon between the landowner and SCE following the completion of Project construction. Because use of the staging yards would be temporary and view of the yards would be limited to passing motorists, the impact would be less than significant.

Subtransmission Lines

As described in Section 2.5.2, *Subtransmission Lines*, the Project would include construction of four new 66 kV subtransmission source lines along two new alignments of poles, and a new 66 kV subtransmission line, as illustrated in Figure 2-5, *Source Line Routes*, and Figure 2-6, *Mira Loma-Jefferson 66 kV Subtransmission Line Route*. The majority of the subtransmission lines would be constructed aboveground. However, in visually sensitive areas such as Grand Boulevard, the Main Street crossing on Blaine Street, and a portion of Magnolia Boulevard in Corona, and where existing electrical infrastructure poses right-of-way limitations (i.e., along Coda Street) the subtransmission lines would be constructed below ground.

Aboveground Construction. As described in Section 2.6.6, *Subtransmission Line Construction (Above Ground)*, aboveground construction of subtransmission lines would combine the removal of existing LWS and wood poles and replacement with new taller LWS and TSP poles. This would occur for the installation of the Mira Loma-Jefferson 66 kV Subtransmission Line, new subtransmission line poles where none currently exist, and for the source lines. 200-foot by 100-foot temporary laydown areas would be utilized at each pole location for removal and installation of poles. Aboveground construction would require the use of heavy equipment such as a compressor trailer, boom/crane truck, bucket truck, excavator, dump trucks, crane, etc. Vegetation at each pole location would be cleared by hand using power brush cutters and, as required, using mechanical equipment with a grading blade. Holes would be excavated using an auger, backhoe, or hand digging for installation of poles. The removal of existing poles would include above and belowground portions of the pole, and the holes left from removing the poles would be backfilled with spoils that may be available as a result of the excavation for new poles and using imported fill, as needed. Once the holes would be filled, the area would be compacted and smoothed to match the surrounding grade. SCE would clean up all areas that would be temporarily disturbed by construction of the Project to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction, as described in Section 2.6.13, *Site Cleanup, Dust Control, and Waste Management*.

To varying degrees, construction equipment and activity would be seen by motorists, local residents, and recreational users adjacent to the subtransmission line alignments, particularly at pole locations. Because the Project would be constructed in a linear fashion, construction crews would move along the alignment, staying at one pole work area for 1 to 2 days at a time, and then revisiting the same area later in the construction process. In addition, temporary laydown areas would be compacted and smoothed to match the surrounding grade; therefore, construction of aboveground Project components related to the subtransmission lines would not result in a substantial degradation of the existing visual character of the area, and therefore the impact would be less than significant.

Belowground Construction. The Project includes a total of approximately 4,980 feet of new underground 66 kV subtransmission lines and associated transition and support structures. An approximately 20- to 24-inch-wide by 60-inch-deep trench would be required to place the 66 kV subtransmission line(s) underground. Belowground construction would require the use of heavy equipment such as a compressor trailer, boom/crane truck, bucket truck, dozer, backhoe, auger truck, excavator, dump trucks, a crane, etc. As discussed in Section 2.6.7, *Subtransmission Line Construction (Below Ground)*, SCE would use the open-cut trenching technique to install the majority of the underground subtransmission line. However, an alternate method such as horizontal boring (jack-and-bore) would likely be required to cross the railroad facilities along Magnolia Avenue and Cota Street. A temporary construction area would be required for horizontal boring operations of approximately 150 feet by 150 feet at each bore pit location. Boring and receiving pits would typically measure 20 feet by 40 feet with depths between 10 feet and 20 feet, depending on the facilities or features that would be crossed.

As described in Section 2.6.7.4, *Duct Bank Installation*, when trenching for the underground subtransmission line segments is completed, SCE would begin to install the underground duct bank comprised of cable conduit, spacers, ground wire, and concrete encasement. Installation of the duct bank would take approximately 19 days; therefore, impacts would be of similar duration as those described above.

As described in the aboveground construction discussion, because the Project would be constructed in a linear fashion, construction crews would move along the alignment, staying at one pole work area for 1 to 2 days at a time, and then revisiting the same area later in the construction process. To varying degrees, construction equipment and activities would be seen by motorists, local residents, and recreational users, but impacts would be temporary and would not result in a substantial degradation of the existing visual character of the area. Further, all temporary construction areas would be restored to pre-construction conditions as feasible, further reducing visual impacts. Therefore, impacts related to construction of underground Project components would be less than significant.

Conductor Stringing. As described in Section 2.6.6.3, *Conductor Stringing*, wire stringing includes all activities associated with the installation of the primary conductors onto subtransmission line structures. On relatively straight alignments, typical wire pulls occur approximately every 4,000 to 6,000 feet on flat terrain. Temporary pulling/splicing sites would be staged at approximately 57 locations along the proposed Project alignments. These sites would vary in size, but would typically be approximately 600 feet by 100 feet. Pull sites located in off-road areas would be cleaned up and restored to preconstruction conditions after construction. Pulling/splicing sites would be visible to motorists, residents and recreational users along the alignment. However, SCE and/or its contractors shall not place equipment at the conductor/wire stringing set-up locations more than two weeks prior to the proposed use. Although adverse visual impacts associated with conductor stringing could occur, impacts at any particular location would occur for only a short duration within the approximately 18-month construction period for the entire Project. The impact would be less than significant.

Mitigation: None required.

Impact 4.1-3: Operation of the Project could substantially degrade the existing visual character or quality of the site and its surroundings. *Significant and Unavoidable* (Class I)

Construction of the Project would result in a new low-profile substation on a disturbed site located in an industrial area, as well as new source lines that would tie into the new Circle City Substation. Construction would also result in a new approximately 10.9-mile Mira Loma-Jefferson 66 kV Subtransmission Line, which would be located primarily within an existing utility easement or street right-of-way (ROW).

The Project would also include the installation of a new fiber-optic cable line that would be installed on the new steel poles and within the underground conduit for the Source Lines. Because the introduction of this fiber-optic line would generally appear as part of the overall Source Lines,

it would not be noticeable to the public, and therefore, would not affect public views. In addition, minor modifications would occur at the existing Mira Loma Substation. These modifications would take place entirely within the existing substation fence line and would include elements that appear similar in scale and visual character to existing substation features. Therefore, the visual effects associated with these elements of the Project would not substantially degrade the existing visual character or quality of the site and its surroundings.

Maintenance of the Project would occur as needed, would be short in duration, and would include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Regular operation and maintenance activities of the overhead facilities would be performed from existing access roads, within the SCE ROW, or within the existing footprint of the SCE substations. Maintenance would be similar to SCE activities that currently occur along the existing subtransmission route between the Mira Loma Substation and Corona Substation and would be observable by motorists, residents, and recreationalists. Maintenance activities would not degrade the visual character of the Project area.

The following subsections provide a detailed discussion and evaluation of the Project's operational visual effects at KOPs as depicted in the visual simulations.

Source Lines

The new source lines (Pedley and Databank) would measure approximately 4.7 miles in total length. The Pedley Source Lines would be 3.5 miles long and would generally extend southeast from Corona Substation to the new Circle City Substation. The Pedley Source Lines would be installed underground where it would cross North Main Street and along East Grand Boulevard

The Databank Source Lines would be 1.2 miles long and connect with existing subtransmission lines at Magnolia Avenue west of Rimpau Avenue and continue northeast on Magnolia Avenue crossing through a mixture of urbanized land that ranges from industrial and commercial to residential and open yard storage uses. At Leeson Lane, the Databank Source Lines would turn southeast and into Circle City Substation. The Databank Source Lines would be installed underground along Magnolia Avenue between Compton Avenue and Rimpau Avenue. The new source lines would introduce new poles and overhead conductor that would be seen primarily by motorists traveling along public roadways.

Figure 4.1-6, *Existing View and Visual Simulation from Grand Boulevard*, shows the existing view and the proposed Project-related visual change at Grand Boulevard at East 3rd Street in an industrial/commercial area located near a residential portion of the City of Corona. The photograph, which depicts the view of motorists traveling southeast along Grand Boulevard, a City of Corona scenic roadway, and the view from a limited number of nearby residences. This view includes auto repair businesses and recreational vehicle storage lot along the east side of the street. Mature street trees partially screen structures including traffic signals, lights, signage, and utility poles, as well as overhead conductors crossing Grand Boulevard. Viewing duration by motorists would be short due to traveling speed.

The simulation shows the Project-related visual change where the Pedley Source Lines transition from an underground configuration to aboveground near the corner of East 3rd Street and Grand Boulevard. The simulation shows a new riser pole at this location. To the left, a steel pole replaces a smaller wood pole along East 3rd Street. An additional set of overhead conductors is also visible as the line travels to the east. The resulting visual contrast at this location would be moderate since the new riser and steel poles would be substantially taller than the existing distribution wood poles, and would be noticeable against the sky. Motorists are typically focused on the road so Project elements would be seen only briefly; viewing duration would be longer for motorists stopped at the intersection. Since visual sensitivity would be moderate and the level of visual change associated with this portion of the Project would be moderate, impacts to the visual character of the area would be less than significant per Table 4.1-4.

Figure 4.1-7, *Existing View and Visual Simulation from Interstate 15*, shows a view from this Eligible State Scenic Highway corridor as it passes through an industrial area in the City of Corona. At this location, the existing conditions show that the roadway is elevated above the adjacent development and local streets. On this eight-lane freeway, lighting and overhead signage dominate the motorist's foreground view, and trees and buildings in the City of Corona are visible along both sides of the freeway. The Santa Ana Mountains, located approximately 5 miles to the south, provide a vivid backdrop and dominate the view throughout the background. Viewing duration for motorists would be short due to traveling speed. Visual sensitivity would be moderate.

The simulation shows the new TSPs on both sides of the freeway with overhead conductors crossing the roadway and an additional new steel pole visible near the right edge of the view. The visual change is noticeable from this roadway location, although views of the perpendicular crossing of I-15 would be seen only briefly by motorists traveling along the highway. In addition, the new steel pole on the right edge of the view would be part of an approximate 1,000-foot overhead segment of the Project that parallels the west (right) side of I-15. Views of the Santa Ana Mountains would not be completely blocked by this segment, but the new structures would be seen against the sky in an area where overhead lines do not currently exist. They would appear as dominant contrasting features against a relatively open view of the mountains, which would degrade the visual character of the area from this view along an Eligible State Scenic Highway. Visual sensitivity would be moderate and the level of visual change would be moderate to high. The proposed Pedley Source Lines would substantially degrade the visual character of the area, resulting in a significant impact.

Implementation of **Mitigation Measure 4.1-1** would lessen the significant effect by reducing the visual contrast created by new subtransmission poles and lines, by requiring conductors to be non-specular and non-reflective and insulators are non-reflective, but the impact would remain significant and unavoidable.

Figure 4.1-8, *Existing View and Visual Simulation from East 6th Street near Magnolia Avenue,* depicts an existing view and visual simulation of the proposed Pedley Source Lines as seen from East 6th Street near Magnolia Avenue. The photograph represents a motorist's view traveling westbound along East 6th Street, which is a major arterial that includes median landscaping

comprised of ground cover and a mixture of street trees. Predominant elements in the view include the road and large tan buildings associated with commercial development on the left. Other vertical elements such as steel streetlights and streetscape, including mature trees, can be seen lining both sides of the street throughout the foreground/middleground. Located approximately 4 miles away, the Santa Ana Mountains appear above the trees and buildings in the background. Viewing duration for motorists would be short due to traveling speed.

The simulation portrays the introduction of new steel poles and overhead conductor along East 6th Street. As shown in the simulation, the upper portions of the new poles would be visible against the sky, whereas lower portions would be seen against the existing trees, buildings and mountains in the backdrop. Existing large buildings provide screening of the lower portions of the proposed poles. A comparison of the existing view and simulation image provided in Figure 4.1-8 indicates that the Project would introduce new dominant elements to the sky line above the buildings and the ridgeline of the mountains. The degree of visual contrast associated with the Project would be strong since there are no existing overhead transmission lines visible from this view. Although the proposed Project would not completely block views of the mountains, it would add tall dominant contrasting features along East 6th Street. The Project would substantially degrade the existing visual character along East 6th Street, resulting in a significant impact.

Implementation of **Mitigation Measure 4.1-1** would lessen impacts by reducing the visual contrast created by new subtransmission poles and lines, by requiring conductors to be non-specular and non-reflective and insulators to be non-reflective, but not to a less-than-significant level. The impact would remain significant and unavoidable

Figure 4.1-9, *Existing View and Visual Simulation from Magnolia Avenue near Sherborn Street,* is representative of a westbound motorist's view along Magnolia Avenue (locally scenic roadway) near Sherborn Street, where one and two-story, landscaped commercial development appears on the left side of the roadway. Various signs can be seen along both sides of the street, including a railroad crossing marker and billboard in the foreground, as well as I-15 freeway signs in the median. The Santa Ana Mountains dominate the background. Existing vertical elements include steel overhead streetlight structures, wood utility poles, and at the next intersection, overhead traffic signals. A mixture of landscaped office park uses, industrial buildings, and outdoor equipment storage yards are also found nearby; however, no residences are located in the immediate vicinity. Viewing duration for motorists would be short due to traveling speed. Overall visual sensitivity for motorists would be moderate due to the open and panoramic view of the mountains and the viewing distance to Project elements.

The simulation view shown in Figure 4.1-9 portrays the Databank Source Lines where they would transition from an underground to an overhead configuration (not located within the locally-designated scenic section of Magnolia Avenue). A new riser pole is seen along the roadside in the foreground, with a taller steel support pole. The proposed Project would not completely block views of the mountains in the background from this view and motorists' views would be brief. However, these structures would be the tallest structures in the view and would be seen against the sky in an area where overhead lines do not currently exist. They appear as

dominate contrasting features against a relatively open view of the mountains, which would degrade the visual character of the area from this view. Visual sensitivity would be moderate and the level of visual change associated with this portion of the Project would be moderate to high. The Project would substantially degrade the visual character of the area, resulting in a significant impact.

Implementation of **Mitigation Measure 4.1-1** would lessen the effects of the Project by reducing the visual contrast created by new subtransmission poles and lines, by requiring that conductors be non-specular and non-reflective and insulators be non-reflective, but the impact would remain significant and unavoidable

Mira Loma-Jefferson 66 kV Subtransmission Line

The approximately 10.9-mile proposed Mira Loma-Jefferson 66 kV Subtransmission Line would generally follow an existing SCE easement or street ROW that currently includes wood and steel power poles and steel-lattice transmission towers, as well as overhead conductors. The Project would generally involve replacing these existing structures with new, slightly taller steel poles.

At the Santa Ana River crossing, the proposed Project would include replacing two existing H-frame structures with two new structures that would be similar in scale and appearance. The location of existing and new structures would be comparable. Photograph 28, shown in Figure 4.1-4n, shows the existing H-frame structures as seen from River Road at the river crossing. Viewing duration would be short due to traveling speed of motorists and visual change associated with replacing the existing steel poles and H-frame structures would be moderate. Because the Project-related visual change at this location would be minor and not particularly noticeable to the public, it would not substantially degrade the visual character of the area and the impact would be less than significant.

The proposed subtransmission line would follow River Road, a major arterial, for approximately 2.25 miles. **Figure 4.1-10**, *Existing View and Visual Simulation from River Road Park*, represents motorist and recreational user views looking northwest toward the Project along River Road, as well as a view from the park. Open park lawns, mature trees, landscaping, and signs appear in the foreground at this location, as well as steel streetlights along both sides of the roadway. Across River Road, reddish-brown-colored poles with multiple cross arms and overhead conductors can be seen along the street amid residential landscaping behind the beige residential wall; these poles include a transmission line and distribution line in a double-circuit configuration with underbuilt distribution and telephone lines. In the background, the San Gabriel Mountain peaks are visible beyond the nearby tree canopies. Motorist views from this location would be brief in duration as they pass through the area. Visual sensitivity for motorists would be low to moderate due to the presence of existing poles and limited visibility of the mountains in the distance. Viewing duration for recreational users in River Road Park would be moderate to long. Although views of the poles and mountains are obstructed by park trees in some areas, in general, park users would have clearer views of these features than passing motorists, and the visual sensitivity would be moderate to high.

The simulation view provided in Figure 4.1-10 shows the proposed subtransmission line with new steel poles that are light gray and taller than the existing wood poles. The lighter color and simpler form of the new poles would be less noticeable against the sky when compared with the existing reddish-brown colored poles. The new poles more closely resemble the color of existing streetlights, resulting in a more unified streetscape. The visual change from this location would be relatively minor since the subtransmission line would follow the same route as the existing line, and it would not substantially degrade the visual quality or character of the landscape seen by motorists or recreational users. Since visual sensitivity for motorists would range from low to moderate and the level of visual change associated with this portion of the Project would be low to moderate, impacts would be less than significant. Since visual sensitivity would be moderate to high for recreational users but visual change related to this portion of the Project would be low, impacts would be less than significant.

Figure 4.1-11, *Existing View and Visual Simulation from Hellman Avenue at Landerwood Drive*, provides a before-and-after view from Hellman Avenue, which serves as the border of the City of Eastvale (east) and the City of Chino (west) at this location, and represents a northbound motorist's view along this major arterial roadway. Numerous utility structures are visible in this area throughout the foreground and middleground. A row of double-circuit subtransmission line steel monopoles and streetlights are seen along the road through the foreground and middleground on the left. Two steel lattice towers supporting a transmission line that crosses Hellman Avenue and streetlights along Hellman Avenue are seen on the right side of the view through the foreground and middleground. A row of two-story residences with landscaping and a perimeter masonry wall are visible on the right side of the view. Green fencing, graded dirt lots, and construction sites associated with a new residential development ("The Preserve") can be seen on the left. Overall, the road, steel poles, overhead conductors, and streetlights appear prominent in the foreground and middleground, while, a largely unobstructed view of the distant San Gabriel Mountains forms a vivid landscape background.

Motorist views from this location would be brief in duration as they pass through the area. The simulation in Figure 4.1-11 portrays the proposed Mira Loma-Jefferson 66 kV Subtransmission Line as it would parallel Hellman Avenue on the east side of the street. The new poles would be similar in scale to the existing poles on the west side of the street. However, a comparison of the existing view and the visual simulation image indicates that the introduction of new poles and overhead conductors on the east side of Hellman Avenue would noticeably increase the visual presence of utility structures within this landscape setting. The visual change associated with this portion of the Project would be moderate to high. Visual sensitivity to the proposed changes would be moderate for motorists. Since visual sensitivity would be moderate and the level of visual change associated with this portion of the Project would be moderate to high, impacts would be potentially significant. The proposed Project would substantially degrade the visual character of the area from this view; implementation of **Mitigation Measure 4.1-1** would lessen the effects of the Project by reducing the visual contrast created by new subtransmission poles and lines, by requiring that conductors be non-specular and non-reflective and insulators be non-reflective. However, because the visual change would be moderate to high, the impact would remain significant and unavoidable.

Figure 4.1-12, *Existing View and Visual Simulation from Huber Park,* portrays the view from this park located on Rolling Meadows Street at the northern edge of the City of Eastvale's residential area. The park includes a skateboard park, sports fields, tennis courts, play equipment, and picnic areas. A portion of the skateboard park is visible in the foreground, with fenced tennis courts beyond. Dark vertical lighting structures appear around the skateboard park and tennis courts. Lattice towers, steel poles, and overhead conductors in an approximately 500-foot wide transmission corridor that parallels the park's northern border appear as dominant features in the middleground. Deciduous and evergreen trees, as well as palm trees, are visible throughout the park and provide little screening of dominant transmission structures. Open agricultural lands, including grazing fields, lie beyond the transmission corridor in the middleground/background but are barely noticeable to the viewer at this location. The San Gabriel Mountains are located approximately 12 miles to the north in the background. Viewing duration for recreational users is moderate to long. Although views of existing poles and mountains are partially obstructed by trees, lattice towers, and conductors, the visual sensitivity is moderate to high.

The simulation in Figure 4.1-12 portrays the proposed subtransmission line along the northern edge of the City of Eastvale. In this area, the Project converts an existing single-circuit line (three conductors) supported on steel poles to a double-circuit line (six conductors). From this viewpoint, the Project is barely noticeable with a new replacement TSP slightly taller than the existing steel pole that it replaces appearing faint in the middleground on the right side of the view, but is partially screened by trees and other vertical park elements. Two new steel poles for the Project, now with six insulators instead of three, are visible just beyond the park; one is located on the left side of the view and one is near the center/right side of the view. Given the presence of numerous transmission structures, some of which are larger than the Project poles, as well as trees and vertical structures mostly screening views, the proposed Project represents a minor, almost imperceptible visual change. Visual contrast associate with this portion of the Project would be low. Since visual sensitivity would be moderate to high and the level of visual change associated with this portion of the Project would be low, impacts would be less than significant.

Circle City Substation

The Circle City Substation would be comprised of a 420-foot by 387-foot facility located on approximately 11.1 acres of the 19.5-acre site. The facility would be enclosed on all sides by an 8-foot-tall, tan-colored block wall, and the enclosed substation surface would be covered with crushed rock. A new, paved access driveway would connect to Leeson Lane, and landscaping and irrigation would be established around the perimeter of the substation. As shown in Photographs 1and 2 on Figure 4.1-4a, the substation site comprises an open vacant field with an asphalt plant and hills in the background. The proposed substation site generally has limited public visibility. **Figure 4.1-5**, *Existing View and Simulation from Leeson Lane*, shows the pre- and post-construction views from Leeson Lane, adjacent (northwest) to the substation site (VP2). The view is framed by Leeson Lane, fencing and an existing distribution line in the foreground. An open grass field with stockpiled materials and oak trees can be seen throughout the middleground, while the hillsides, the quarry, and other industrial uses can be seen in the background. Existing vertical wood distribution poles can be seen throughout the foreground and middleground on the left-hand side of the view. This view would be experienced by nearby commercial customers and

employees, as well as motorists along Leeson Lane, which would comprise the greatest affected viewers from this vantage point. Viewer duration would be typically short as members of the public walk in and out of businesses and by passing motorists. Overall visual sensitivity is low to moderate.

The simulation view in Figure 4.1-5 portrays the new Circle City Substation facility, including the new access road on the left side of the view, which connects to Leeson Lane. New LWS poles and TSPs and the paved access road are introduced as new elements in the foreground. As seen from this location, the new poles appear somewhat prominent; however, this effect would be less noticeable when seen within the overall context of the existing industrial, mixed-use visual setting. The substation structures, surrounded by a tan-colored wall, appear against a backdrop of hillside landform. The substation is visible and prominent from this unobstructed view, but would not completely block the view of the trees and hillsides in the background. In addition, views from this location and along Leeson Lane would be brief. The comparison of the existing view and visual simulation demonstrates that the Project would not substantially degrade the existing visual character of this industrial landscape setting. Since overall visual sensitivity would be low to moderate and the level of visual change associated with this portion of the Project would be moderate to high, impacts would be less than significant.

---

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Impact 4.1-4: Construction and operation of the Project would create new sources of light and/or glare that could adversely affect day or nighttime views in the area. *Less than Significant with Mitigation* (Class II)

Construction

Construction of the Project would occur during daytime hours. However, on occasion, construction activities may be required at night, and would therefore require lighting. Staging yards may also be lit for staging and security. If nighttime lighting would be necessary, it would generally be directed and focused away from nearby residences. If temporary construction lighting is required, SCE would use shielded construction light fixtures and lighting would be directed away from nearby residences as specified in APM AES-01. With implementation of this measure, the short-term construction activities that would be associated with the Project would not create a new source of substantial light that would adversely affect day or nighttime views in the area; the impact would be less than significant.

Operation

Lighting at the proposed Circle City Substation site would consist of low-intensity lights located in the switchracks around the transformer banks and in areas within the substation fence line where operation and maintenance activities may occur during evening hours for emergency or scheduled work. Maintenance lights would be controlled by a manual switch and would normally be in the “off” position. This lighting would be similar to nearby industrial facility lighting and operated only on an as-needed basis. The nearest residential neighborhood to the proposed substation site is a

mobile home community located approximately 720 feet to the northeast. Views of the substation site from these residences are partially obscured by existing industrial buildings. Because substation lighting is designed to minimize potential effects outside the facility, and given that there are no sensitive receptors located in the immediate vicinity, these effects would not create a new source of substantial light that would adversely affect day or nighttime views in the area and the impact related to operation of the proposed substation would be less than significant.

Neither the proposed source lines, nor the proposed Mira Loma-Jefferson subtransmission line would involve new lighting. In addition, no new lighting is proposed at the existing Mira Loma Substation. Therefore, operation of the proposed source lines and subtransmission line would not create a substantial source of new nighttime lighting and the impact would be less than significant. With respect to glare effects, the new poles would weather to a dull, gray finish that would not cause noticeable glare. The impact from new poles would be less than significant. However, new conductors and insulators could introduce reflective surfaces resulting in new sources of noticeable glare, a significant impact. Implementation of Mitigation Measure 4.1-1 would ensure that impacts from glare would be reduced to less than significant by requiring the use of non-specular and non-reflective conductors and non-reflective insulators.

Mitigation: Implement Mitigation Measure 4.1-1.

Significance after Mitigation: Less than Significant.

4.1.5 Alternatives

4.1.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would not affect scenic vistas, scenic resources, or the existing visual character of the surrounding area, and would not create any additional source of light or glare (No Impact).

4.1.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives*.

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

As under the proposed Project, Alternative B would result in a significant and unavoidable impact to scenic vistas and visual character along Hellman Avenue because it would result in the introduction of new poles and overhead conductors that would noticeably increase the visual presence of utility structures degrading the visual quality of the area (Impacts 4.1-1 and 4.1-3; Class I), and short-term less-than-significant impacts to visual character associated with construction equipment and activities in construction areas (Impact 4.1-2; Class III). Significant

and unavoidable visual impacts related to the proposed substation source lines would be avoided under Alternative B as they would not be constructed (No Impact). There would be no impact regarding scenic resources within a state scenic highway (No Impact). Light/glare effects associated with Alternative B would be reduced to less than significant with implementation of **Mitigation Measure 4.1-1** (Impact 4.1-4; Class II).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line (see Figure 3-2 in Chapter 3, *Project Alternatives*); however, it would be constructed underground for approximately 0.4 mile along Hellman Avenue beginning at the southwest corner of American Heroes Park continuing south within Hellman Avenue to Pine Avenue/Schleisman Road, where it would transition to overhead on the west side of the road for the remainder of Hellman Avenue.

As discussed under Impacts 4.1-1 and 4.1-3, the proposed Project would result in a significant and unavoidable impact to scenic vistas and visual character along this portion of Hellman Avenue because it would result in the introduction of new poles and overhead conductors that would noticeably increase the visual presence of utility structures degrading the visual quality of the area (as shown in Figure 4.1-11). Since Alternative C1 would result in this portion of the alignment being placed underground, it would eliminate the significant and unavoidable impacts that would be associated with the proposed Mira Loma-Jefferson subtransmission line along this portion of Hellman Avenue (No Impact). There would be no impact regarding scenic resources within a state scenic highway along the underground segment (No Impact) and there would be no operational light/glare effects associated with Alternative C1 for this segment of the Mira Loma-Jefferson subtransmission line (No Impact). Significant and unavoidable visual impacts related to the source lines (i.e., proposed source lines or Alternatives D2, E1, E2, E3, or E4) could still occur under this scenario, depending on the combination of alternatives selected.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 segment deviates from the proposed route where SCE's existing ROW is crossed by Archibald Avenue. Like the proposed Project it would cross the Santa Ana River overhead, and would follow an existing distribution line that crosses the river northeast of River Road. Visual impacts regarding visual character/quality and scenic vistas associated with the river crossing would likely be greater when compared to the proposed Project if new, taller poles are necessary for this alternative alignment.

North of the river, this alternative would be constructed overhead along Archibald Avenue up to Smith River Road, where it would transition to underground, then continue north within Archibald Avenue up to SCE's existing ROW where it would again join the proposed subtransmission line. The existing single circuit poles on the west side of Archibald Avenue would be replaced with double circuit poles. Visual character impacts during operations associated with the replacement of poles through this residential area would be less than significant (Class III), consistent with those identified in Impact 4.1-3 for the proposed

subtransmission line in areas where existing poles would be replaced, such as those illustrated in Figure 4.1-10. Although this figure depicts replacement of wood poles with steel poles, visual impacts associated with this alternative are best depicted in this figure.

Alternative C2 would avoid the significant and unavoidable impacts of the proposed subtransmission line along Hellman Avenue; however, aside from that segment of the proposed subtransmission line, the visual impacts associated with the overhead portion of the alternative would be generally greater (but still Class III) under this alternative compared to the proposed Project because the overhead portions would be visible to substantially more motorists. Overall, Alternative C2 would result in reduced operational impacts compared to the proposed Project for scenic vistas and degradation of visual character (Impacts 4.1-1 and 4.1-3; Class III), and the same effects as the Project related to scenic resources within a state scenic highway (No Impact), degradation of existing visual character during construction (Impact 4.1-2; Class III), and light/glare impacts (Impact 4.3-4; Class II). Significant and unavoidable visual impacts related to the source lines (i.e., proposed source lines or Alternatives D2, E1, E2, E3, or E4) could still occur under this scenario, depending on the combination of alternatives selected.

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Significant visual impacts along Hellman Avenue would be avoided under Alternative C3 as the Mira Loma-Jefferson 66 kV subtransmission line would not be constructed under this alternative. However, Alternative C3 would result in the same significant and unavoidable impacts to scenic vistas and visual character along Magnolia Avenue associated with the double-circuit 66 kV subtransmission line connection for the 40 MW battery storage and substation facility that would be the same as the proposed Databank Source Lines (Impact 4.1-1 and 4.1-3; Class I). The new double-circuit 66 kV subtransmission line associated with the 50 MW battery storage facility and substation connection to Corona Substation under Alternative C3 would have similar adverse visual impacts as the proposed Pedley and Databank Source Lines (Impact 4.1-1 and 4.1-3; Class I) given that the subtransmission lines would be installed where no subtransmission line currently exist. The new subtransmission line associated with the 42 MW battery storage and substation facility connection to Jefferson Substation would consist of the existing single-circuit line being replaced with double-circuit lines, and wood poles replaced with taller steel poles. Similar to the portions of the proposed Mira Loma-Jefferson subtransmission line that would replace a single-circuit line with a double-circuit line, the associated impacts would be less than significant (Impacts 4.1-1 and 4.1-3; Class III). Visual impacts associated with the Alternative C3 telecommunication lines would result in similar or reduced impacts as discussed above for the 66 kV connection lines because the lines would be installed on the new 66 kV connection line poles, in new underground alignments, and on existing poles.

The three battery storage and substation sites would include battery storage enclosures as well as various other components, such as a 45-foot-tall 66 kV switchrack. The facilities would be visible from public areas through the proposed 8-foot-high chain link fence and multiple components would extend above the fence height. Visual impacts for the battery storage sites associated with the Corona and Jefferson Substations, which would be located in residential and commercial areas, are conservatively assumed to be significant and unavoidable, as there is no feasible

mitigation to reduce impacts to less than significant levels (Class I). The battery storage site near the proposed Circle City Substation would be located within the same existing visual character as the proposed Project and would result in a less-than-significant impact (Impact 4.1-3; Class III).

There would be no impact regarding scenic resources within a state scenic highway (No Impact). Impacts related to degradation of existing visual character during construction would be less than significant (Impact 4.1-2; Class III) and light/glare effects would be reduced to less than significant with implementation of **Mitigation Measure 4.1-1** (Impact 4.1-4; Class II).

Significant and unavoidable visual impacts related to the source lines (i.e., proposed source lines or Alternatives D2, E1, E2, E3, or E4) also could occur under this scenario, depending on the combination of alternatives selected.

4.1.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives*.

Alternative D1: 12 kV Distribution-Level Battery Storage

The 12 kV distribution-level battery storage facility under Alternative D1 would be located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona, just north of the proposed substation site (see Figure 3-3, *Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Layout*). Alternative D1 facilities would be viewed from the same roadways as would view the proposed substation site, resulting in construction and operation impacts similar to the proposed Project. Like the proposed Project, construction, operation, and maintenance of the battery storage facilities would have no impact on scenic vistas or scenic resources within a state scenic highway (No Impact). It would not significantly degrade the visual character of the area (as depicted in Figure 4.1-5). Views of the battery storage facility under this alternative would generally be less pronounced than views of the proposed substation given the reduced height of the facilities (i.e., up to 12 feet tall) compared to the height of the proposed substation facilities (up to 45 feet tall). The site would be located within the same existing visual character as the proposed Project site and would result in a less-than-significant impact (Impact 4.1-3; Class III). Implementation of Alternative D1 would eliminate the need for the substation source lines and the associated significant and unavoidable visual impacts would not occur (No Impact).

Impacts related to degradation of existing visual character during construction would be less than significant (Impact 4.1-2; Class III) and nighttime lighting and glare impacts would be reduced to less than significant with implementation of Mitigation Measure 4.1-1 (Impact 4.1-4; Class II). Alternative D1's Battery Storage Tap to Corona-Jefferson telecommunication line would be installed completely underground, resulting in no long-term visual impacts (No Impact). Alternative D1's Battery Storage Tap to Corona Substation telecommunication line would be constructed mostly underground, but approximately 7,800 feet of the line would be aboveground,

attached to existing distribution poles. The overhead line attached to existing distribution poles would result in a less-than-significant impact (Impact 4.1-3; Class III). Significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 could still occur under this scenario, depending on the combination of alternatives selected.

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would be located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona, just east of the proposed substation site. Although this alternative would be on an adjacent parcel, it would be constructed using the same specifications as the proposed Project. The Alternative D2 parcel would be viewed from the same roadways as would view the proposed substation site, resulting in construction and operation impacts similar to the proposed Project. Like the proposed Project, construction, operation, and maintenance of the substation at this alternative location would have no impact on scenic vistas or scenic resources within a state scenic highway (No Impact). It would not significantly degrade the visual character of the area (as depicted in Figure 4.1-5). While views of the substation site under this alternative could vary slightly, they would generally be the same given that the site would be located within the same visual character as the proposed Project site, and would result in a less-than significant impact (Impact 4.1-3; Class III). Impacts regarding nighttime lighting and glare would similarly be reduced to less than significant with implementation of Mitigation Measure 4.1-1 (Impact 4.1-4; Class II). Significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 and the substation source lines (i.e., proposed source lines or Alternatives E1, E2, E3, or E4) could still occur under this scenario, depending on the combination of alternatives selected.

Alternative E1: Quarry Street 66 kV Source Line Segment

Instead of turning due east at the intersection of East 3rd Street and Grand Boulevard, the Pedley Source Lines under Alternative E1 would continue underground in a southeasterly direction along East Grand Boulevard to Quarry Street. At Quarry Street this alternative would turn east and continue underground along Quarry Street for approximately 500 feet, where it would transition to overhead and include installation of LWS poles along the north side of Quarry Street to the point where the alternative segment would join the proposed route, just east of the Temescal Wash flood control channel. Alternative E1 would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Source Lines segment that it would replace.

Implementation of Alternative E1 would install electric infrastructure along a longer segment of Grand Boulevard and along a Quarry Street, residential road located one block south of the proposed alignment, which has similar visual characteristics as the proposed Project. Accordingly, Alternative E1 would result in similar construction and operational impacts as the segment of the proposed Project that it would replace, including impacts on scenic vistas (Impacts 4.1-1 and 4.1-3; Class I), scenic resources within a state scenic highway (No Impact), and light/glare impacts (Impact 4.1-4; Class II). Impacts on motorists would be reduced regarding visual character (but remain less than significant) where Alternative E1 would be located

underground for an additional length of the alignment along the west portion of Quarry Street. However, visual character impacts on recreational users would be increased since this alternative would result in installation of subtransmission poles on the north side of Quarry Street, including one portion that does not currently have poles and is located directly across the street from City Park (near the intersection of Arroya Avenue and Quarry Street). Although this portion of the alternative alignment would result in increased impacts on recreational users when compared to the proposed Project, both East 3rd Street and Quarry Street generally contain existing distribution lines and infrastructure. Like the proposed Project, impacts related to degradation of existing visual character during construction would be less than significant (Impact 4.1-2; Class III) and the introduction of the proposed infrastructure would not result in a long-term significant degradation of the visual character of the area (Impact 4.1-3; Class III). Significant and unavoidable visual impacts related to the other segments of the source lines along East 6th Street and Magnolia Avenue would still occur, and significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 could still occur under this scenario, depending on the combination of alternatives selected.

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would follow the proposed Pedley Source Lines route, but the source line would be installed underground from just west of I-15 at the eastern end of Quarry Street to the proposed Circle City Substation site. As discussed under Impacts 4.1-1 and 4.1-3, the proposed Pedley Source Lines would result in significant and unavoidable impacts to scenic vistas and visual character in the vicinity of I-15 (shown in Figure 4.1-7) and along East 6th Street (as represented in Figure 4.1-8) (Class I). Since Alternative E2 would result in this portion of the alignment being placed underground, it would eliminate these significant and unavoidable impacts associated with the proposed Project (No Impact). There would be no impact regarding scenic resources within a state scenic highway (No Impact); or operational light/glare effects associated with Alternative E2 for this segment of the Pedley Source Lines alignment (No Impact) and impacts related to degradation of existing visual character during construction would be less than significant (Impact 4.1-2; Class III). Significant and unavoidable visual impacts related to the Databank Source Lines along Magnolia Avenue would still occur, and significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 could still occur under this scenario, depending on the combination of alternatives selected.

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an overhead line approximately 1.6 miles in length that would be an alternative to the proposed Databank Source Lines. This alternative route would consist of double-circuit LWS poles and TSPs and would begin with a connection to the Chase-Corona-Databank 66 kV Subtransmission Line at the intersection of Old Temescal Road and Compton Avenue, then it would continue north along Compton Avenue to Pico Street, where it would continue north behind several commercial properties to a location where it would cross over I-15. East of I-15, the alternative route would proceed in a northeasterly direction across vacant land to Sherborn Street and then continue northeasterly and enter the southern end of the substation site.

Alternative E3 would be constructed completely aboveground and would be approximately 0.1-mile longer than the proposed Databank Source Lines. This alternative would result in visual character impacts to motorists along I-15 due to an overhead crossing of I-15 and as well as a 2,200-foot parallel installation along the west side of I-15. As depicted in Figure 4.1-7 (VP 14), I-15 offers generally open views of mountains for motorists traveling north and south, which are considered a local scenic resource. In addition, I-15 is an Eligible State Scenic Highway in this area that experiences an average daily traffic volume of up to 182,000 vehicles (see Table 4.1-1 and Table 4.17-1 in Section 4.17, *Transportation and Traffic*). The visual impact to drivers and passengers along this Eligible State Scenic Highway would be significant and unavoidable, as there is no feasible mitigation to reduce impacts to less than significant levels (Impacts 4.1-1 and 4.1-3; Class I). Alternative E3 would avoid the significant and unavoidable impact associated with the proposed Databank Source Lines along Magnolia Avenue; however, the significant and unavoidable impacts of Alternative E3 to drivers and passengers is considered more severe given the substantially greater number of people that would be affected. Alternative E3 would result in similar impacts as the proposed Project for scenic vistas and visual character (Impacts 4.1-1 and 4.1-3; Class I), scenic resources within a state scenic highway (No Impact), degradation of existing visual character during construction (Impact 4.1-2; Class III) and light/glare impacts (Impact 4.1-4; Class II). Significant and unavoidable visual impacts related to the Pedley Source Lines would still occur, and significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 could still occur under this scenario, depending on the combination of alternatives selected.

Alternative E4: Databank 66 kV Source Lines Only

As discussed under Impacts 4.1-1 and 4.1-3, the proposed Pedley Source Lines would result in significant and unavoidable impacts to scenic vistas and visual character in the vicinity of I-15 and along East 6th Street. Since the Pedley Source Lines would not be constructed under Alternative E4, it would eliminate the significant and unavoidable impacts associated with the proposed Pedley Source Lines. There would be no impact regarding scenic resources within a state scenic highway (No Impact), degradation of existing visual character during construction would result in a less-than-significant impact (Impact 4.1-2; Class III), and light/glare effects associated with Alternative E4 would be reduced to less than significant with incorporation of mitigation (Impact 4.1-4; Class II). Significant and unavoidable visual impacts related to the Databank Source Lines would still occur, and significant and unavoidable visual impacts related to the proposed Mira Loma-Jefferson subtransmission line or the facilities under Alternative C3 could still occur under this scenario, depending on the combination of alternatives selected.

References – Aesthetics

California Department of Transportation (Caltrans), 2016a. California Scenic Highway Mapping System, Riverside County. Available online at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed on June 13, 2016.

Caltrans, 2016b. California Scenic Highway Mapping System, San Bernardino County. Available online at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed on June 13, 2016.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 13, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on June 13, 2016.

City of Eastvale, 2012. City of Eastvale General Plan. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 13, 2016.

City of Norco, 2001. City of Norco General Plan, Land Use Element. Last update adopted June 6, 2001.

City of Ontario, 2010 City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 13, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 13, 2016.

County of Riverside, 2015. County of Riverside General Plan, Circulation Element. December 15, 2015. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 13, 2016.

4.2 Agriculture and Forestry Resources

This section identifies and evaluates issues related to agriculture and forestry resources in the context of the Project and alternatives. It includes a description of existing land use conditions in relation to farmland designations, Williamson Act contracts, forest and timberland zoning, and related uses. This section further provides a discussion of applicable state, regional, and local plans and programs, and an evaluation of impacts associated with implementation of the Project and alternatives.

4.2.1 Setting

4.2.1.1 Regional Setting

Riverside and San Bernardino Counties have experienced substantial loss of agricultural land due to continued conversion of agricultural land to non-agricultural uses. According to the California Department of Conservation's (DOC) *2015 California Farmland Conversion Report*, of the nearly 46 square miles of new Urban and Built-up Land in the state from 2010 to 2012, 43 percent (12,554 acres) occurred in the southern California region, and three out of the top ten urbanizing counties were in southern California. Specifically, Riverside County ranked second in urbanization with 3,852 acres, and San Bernardino ranked ninth with 1,036 acres (DOC, 2015).

Approximately 11,421 acres have been converted from agricultural to non-agricultural uses in Riverside County between 2010 and 2012. In 2012, Riverside County had 536,511 acres of irrigated and non-irrigated farmland and 325,407 acres of urban built-up land (DOC, 2015). In San Bernardino County, approximately 1,440 acres were converted from agricultural to non-agricultural uses between 2010 and 2012. In 2012, San Bernardino County had 924,790 acres of irrigated and non-irrigated farmland and 278,910 of urban built-up land (DOC, 2015).

With respect to agricultural production, the gross value of agricultural production in Riverside County for 2014 totaled approximately $1.36 billion, an increase of $34.2 million (2.6 percent) since 2013. Major commodity groups for Riverside County include citrus, tree and vine, vegetables/melons/miscellaneous, field and seed, nursery, agriculture, and aquaculture. The top agricultural products for 2014 were milk, nursery stock, table grapes, hay, lemons, bell peppers, eggs, grapefruit, dates, and avocados. Riverside County exports food and fiber products to more than 50 countries worldwide (CRACO, 2014). In San Bernardino County, the gross value of agricultural production in San Bernardino County for 2014 totaled approximately $527 million, which equates to an increase of more than 26 percent since 2013, primarily due to an increase in acreage used for field and vegetable crops and higher prices being received for some commodities. Despite continued conversion of agricultural land in the County to business and residential development, agriculture remains an integral component of the economy in San Bernardino County (CSBDAWM, 2014).

4.2.1.2 Local Setting

The majority of the proposed Project elements (i.e., substation sites, subtransmission and source line alignments, and staging yards) are located on lands designated as Urban and Built-Up Land

by the California Farmland Mapping and Monitoring Program (FMMP), which is described in greater detail in *Regulatory Setting*, below. However, there are some lands identified as Other Land, Grazing Land, and Farmland of Local Importance located along the Mira Loma-Jefferson 66 kV Subtransmission Line alignment. Lands identified as Prime Farmland and Unique Farmland occur within and along the Project alignment in Chino, Eastvale, and Ontario. No Farmland of Statewide Importance is present along any of the Project alignments (DOC, 2014a; DOC, 2014b; and DOC, 2014c). See **Figure 4.2-1***, Important Farmland in the Project Vicinity,* for designated farmland along the Mira Loma-Jefferson 66 kV Subtransmission Line north of the Santa Ana River. No designated farmland exists along the subtransmission alignment south of the Santa Ana River, along the source line alignments, at the proposed Circle City Substation site, or at the proposed staging yard sites.

Within the City of Ontario, the proposed Mira Loma-Jefferson 66 kV Subtransmission line alignment proceeds southwest from the Mira Loma Substation through areas mapped as Prime Farmland. The proposed alignment also passes through Prime Farmland north of Remington Avenue, at the City limit between Ontario and Eastvale. In Eastvale, the proposed Mira Loma-Jefferson subtransmission line alignment runs adjacent to land designated as Prime Farmland, south of Limonite Avenue. Where the Mira Loma-Jefferson subtransmission line would turn in a southwesterly direction towards Hellman Avenue, it would traverse several parcels designated as Prime Farmland and Unique Farmland. Once the proposed alignment reaches Hellman Avenue, it is located adjacent to areas designated as Prime Farmland in Chino for 0.5 mile along Hellman Avenue, south of Schleisman Road. However, portions of land designated as Prime Farmland have recently been developed into residential neighborhoods.

There is no designated Farmland in the immediate vicinity of the proposed Pedley or Databank source lines alignments.

None of the Project elements (i.e., substation sites, subtransmission and source line alignments, and staging yard sites) are located on forest land or timberland.

4.2.1.3 Regulatory Setting

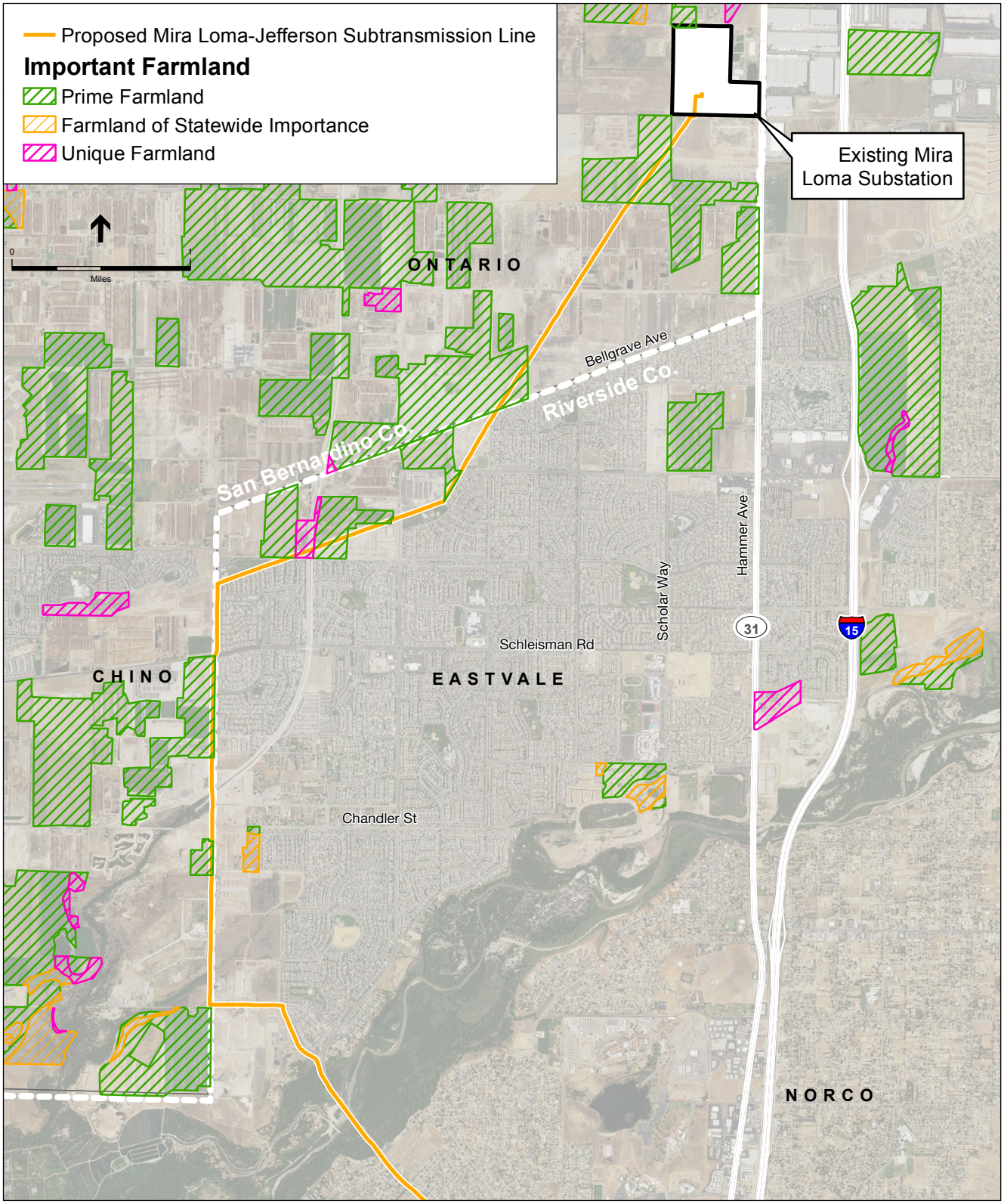
Federal

No federal plans or policies concerning agriculture and forestry resources apply to the Project or alternatives.

State

California Farmland Mapping and Monitoring Program (FMMP)

The DOC's FMMP provides a classification system based on technical soil ratings and current land use (DOC, 2016a). The FMMP is an informational service only and does not have regulatory jurisdiction over local land use decisions. The minimum land use mapping unit is 10 acres unless specified; smaller units of land are incorporated into the surrounding map classifications.



SOURCE: DOC, 2012

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.2-1

Important Farmland in the Project Vicinity

The California Department of Conservation (DOC) sponsors the FMMP and is also responsible for establishing agricultural easements in accordance with Public Resources Code Sections 10250–10255. Important Farmland maps classify land into one of eight categories, which are defined as follows (DOC, 2016a):

- **Prime Farmland**—Land that has the best combination of features for the production of agricultural crops.
- **Farmland of Statewide Importance**—Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.
- **Unique Farmland**—Land of lesser quality soils used for the production of the state's leading agricultural cash crops.
- **Farmland of Local Importance**—Land that is of importance to the local agricultural economy.
- **Grazing Land**—Land with existing vegetation that is suitable for grazing.
- **Urban and Built-up Lands**—Land occupied by structures with a density of at least one dwelling unit per 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public utility structures, and other developed purposes.
- **Land Committed to Nonagricultural Use**—Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands. Other Lands—Land that does not meet the criteria of the remaining categories.

The designations for *Prime Farmland, Farmland of Statewide Importance, and Unique Farmland* are defined together under the terms "Agricultural Land" and "Farmland" in CEQA (Public Resources Code Section 21060.1 and State CEQA Guidelines Appendix G).

California Public Resources Code

The California Public Resources Code governs forestry, forests, and forest resources, as well as range and forage lands, within the state. "Forest land" is defined by Public Resources Code Section 12220(g) as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." "Timberland" is defined by Public Resources Code Section 4526 as "land, other than land owned by the federal government..., which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."

California Government Code

Chapter 6.7 of the Government Code (§§51100-51155) regulates timberlands within the state. "Timberland production zone" is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. In this context, "compatible uses" include any use that "does not significantly detract from the use of the property

for, or inhibit, growing and harvesting timber" (Government Code §51104(h)). Watershed management, grazing, and the erection, construction, alteration, or maintenance of electric transmission facilities are examples of compatible uses. The general plans of cities and counties may use the term "timberland preserve zone," which Government Code Section 51104(g) defines as equivalent to "timberland production zone."

California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act) preserves open spaces and agricultural land in exchange for property tax breaks (Government Code §51200 et seq.). It discourages urban sprawl and prevents landowners from developing their property for the greater land value of commercial and/or residential uses. The Williamson Act is a state program implemented at the county level that allows agricultural landowners to contractually agree to retain land included in an agricultural preserve[1] in agricultural or and open space uses for a period of 10 years and, in return, to pay reduced property taxes. The term of the contract automatically renews each year unless not renewed or cancelled, so that the contract always has a 10-year period left.

Local

California Public Utilities Commission (CPUC) General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to agriculture and forestry resources that would otherwise be relevant to the Project and alternatives are described below.

County of Riverside General Plan

South of the Santa Ana River, the Mira Loma-Jefferson subtransmission line would cross 0.1 mile of unincorporated Riverside County. The following policies in the Riverside County General Plan pertain to agriculture and forestry (County of Riverside, 2015).

> *Policy LU 16.2:* Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.
>
> *Policy LU 16.4:* Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

City of Chino

The following policies within the Open Space and Conservation Element of the City of Chino General Plan pertain to agriculture and forestry (City of Chino, 2010).

[1] An agricultural preserve defines the boundary of an area within which a city or county would be willing to enter into Williamson Act contracts with landowners: The boundary is designated by resolution of the city council or board of supervisors having jurisdiction. Agricultural preserves generally must be at least 100 acres in size.

Policy P1 (Objective OSC-2.2): The City shall continue to work with landowners in maintaining existing Williamson Act contracts.

Policy P1 (Objective OSC-2.3): The City shall require new development adjacent to properties designated for agricultural uses to have buffer zones, such as roads, setbacks and other physical boundaries, between agricultural uses and urban development. Buffers may be located on the land where the use is being changed, on the property containing the agricultural use, or a combination of the two.

City of Corona

The following policy within the Environmental Resources Element of the City of Corona General Plan regarding agriculture and forestry may be applicable to Project activities that take place within Corona (City of Corona, 2004).

Policy 10.12.1: Allow for and facilitate the continuance of agricultural activities in the City until such time as the land is needed to accommodate population and employment growth.

City of Eastvale

The following policies within the Air Quality and Conservation Element of the City of Eastvale General Plan pertain to agriculture and forestry (City of Eastvale, 2012).

Policy AQ-39: The loss of agricultural productivity on lands designated for urban uses within the city limits is anticipated as a consequence of the development of Eastvale.

Policy AQ-40: As long as agricultural land in the city exists, the City shall not require buffers between farmland and urban uses within the City, relying instead on the following actions to address the impacts of farming on urban uses:

- Implement the City's "right-to-farm" ordinance.
- Prospective buyers of property adjacent to agricultural land shall be notified through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities per provisions of the City's right-to-farm ordinance.

The City of Eastvale's Right to Farm Regulations are contained in Eastvale Municipal Code Chapter 6.40. This Chapter sets a policy which provides that "No agricultural activity, operation or facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, due to any changed condition in or about, the locality, after the same has been in operation for more than three years if it was not a nuisance at the time it began."

City of Norco

The following policies within the City of Norco's Land Use Element pertain to agriculture and forestry (City of Norco, 2001).

Policy 2.2.1a: Existing A-1 zones and related residential zones with similar densities shall not be rezoned for higher intensity residential uses.

Policy 2.2.1d: The City shall encourage residential open areas at a scale that encourages the small-plot agricultural/animal keeping lifestyle.

City of Ontario

The following policy within the Biological, Mineral, and Agricultural Resources Element of the City of Ontario General Plan pertains to agriculture resources (City of Ontario, 2010).

Policy ER5-3: Right to Farm. We support the right of existing farms to continue their operations within the New Model Colony.

4.2.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, project would result in significant effects on the environment related to agriculture and forestry resources if it would:

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

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526) or timberland zoned Timberland Production (as defined by Government Code §51104(g));

d) Result in the loss of forest land or conversion of forest land to non-forest use; or

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

4.2.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce impacts on agriculture and forestry resources.

4.2.4 Impacts and Mitigation Measures

4.2.4.1 Approach to Analysis

This analysis uses land use and agricultural designation maps produced by planning and resource agencies, including the DOC and local governments, to determine whether the Project would directly or indirectly affect land used for agricultural or forestry uses, and analyzes the significance of such impacts based on whether the Project would convert such lands to non-agricultural or non-forestry uses, conflict with existing zoning for agricultural and forestry uses, or involve other changes in the environment that would indirectly affect the ability to continue to use them for agricultural or forestry use.

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

Impact 4.2-1: The Project would convert Farmland to non-agricultural use. *Less than significant with mitigation* (Class II)

Impacts related to the conversion of Farmland to non-agricultural use could occur temporarily as a result of construction-related ground-disturbing activities and/or permanently as a result of long-term occupation of agricultural lands by non-agricultural structures or uses. As shown in **Table 4.2-1**, the total estimated Farmland that would be temporarily and permanently disturbed by all Project activities (e.g., pole removals, pole installations, and construction of access roads) would be approximately 25.3 acres and less than 0.5 acre, respectively.

TABLE 4.2-1
ESTIMATED FARMLAND DISTURBANCE

Farmland Category	Approximate Disturbed Areas (acres)	
	Temporary	Permanent
Prime Farmland	23.8	0.4
Farmland of Statewide Importance	0.0	0.0
Unique Farmland	1.5	<0.1
Total	**25.3**	**<0.5**

SOURCE: SCE, 2015; DOC, 2012a, 2012b, 2012c

Temporary Disturbance of Farmland

Within the City of Ontario, the proposed Mira Loma-Jefferson subtransmission line alignment travels southwest from the Mira Loma Substation through areas mapped as Prime Farmland by the FMMP, as shown in Figure 4.2-1. The proposed alignment passes through Prime Farmland north of Remington Avenue, at the City limit between Ontario and Eastvale. In Eastvale, the Project alignment runs adjacent to land designated as Prime Farmland, south of Limonite Avenue. Where the subtransmission line would turn in a southwesterly direction towards Hellman Avenue, the Project alignment traverses several parcels designated as Prime Farmland and Unique Farmland.

Along this portion of the proposed alignment temporary disturbance would occur during the replacement of approximately 20 poles within areas designated as Prime Farmland and Unique Farmland. A total of 106 LWS poles would be replaced along the Mira Loma-Jefferson 66 kV Subtransmission Line, with each pole resulting in approximately 0.46 acre of temporary disturbance during construction. Thus, a total of approximately 9 acres of temporary disturbance would occur during replacement of approximately 20 poles within the area designated as Prime Farmland or Unique Farmland. These temporarily disturbed areas would be returned to agricultural use after construction, and would not involve the conversion of agricultural land to non-agricultural uses.

Once the Project alignment reaches Hellman Avenue, the alignment passes adjacent to areas designated as Prime Farmland in Chino for 0.5 mile along Hellman Avenue, south of Schleisman Road, but not through agricultural lands. Along this portion of the alignment, existing LWS poles along Hellman Avenue would be replaced with new LWS poles within the public right-of-way. No conversion of land to non-agricultural uses would occur and impacts would be less than significant.

There would be no temporary Farmland disturbance associated with construction of the proposed Circle City Substation, Pedley Source Lines, or Databank Source Lines.

SCE anticipates that construction of the Project would take approximately 18 months to complete. During this time, there would be temporary ground disturbance on 25.3 acres of Farmland during pole removals, pole installations, and construction of access roads and staging areas. Temporary ground disturbance associated with the Project would be returned to agricultural use after construction activities take place.

Permanent Conversion of Farmland

As shown in **Table 4.2-1**, permanent disturbance (i.e., conversion) of Farmland that would be associated with development of the proposed Mira Loma-Jefferson subtransmission line would be less than 0.5 acre. Between Mira Loma Substation and Hellman Avenue approximately 0.4 acre of Prime Farmland used for field crops would be permanently converted to non-agricultural use and less than 0.1 acre of Unique Farmland used for a nursery would be converted, as a result of new pole installations and new permanent access road construction. Even though it is less than 0.5 acre, because Prime and Unique Farmland would be permanently converted to non-agricultural use, impacts would be significant. Mitigation Measure 4.2-1 would compensate for the direct loss of Farmland by permanently preserving Farmland of equal quality and size and would reduce the Project impact to less-than-significant in accordance with CEQA Guidelines Section 15370(e), which allows for mitigation of an impact by replacement or provision of substitute resources or environments. There would be no permanent conversion of Farmland associated with construction of the proposed Circle City Substation, Pedley Source Lines, or Databank Source Lines.

> **Mitigation Measure 4.2-1:** Prior to commencement of construction activities, SCE shall obtain permanent agricultural conservation easements at a one to one (1:1) ratio for Prime Farmland or Unique Farmland to be permanently converted by the Project. Conservation easements shall be on land within San Bernardino County or Riverside County of at least equal quality and size as land disturbed by the Project, as determined by the CPUC. Mitigation via agricultural conservation easement shall be satisfied under the following conditions:
>
> 1. SCE shall acquire farmland and shall establish an easement for the portion of the land that will no longer be used for agricultural land equal to the acreage converted. SCE shall provide evidence to the CPUC documenting the easement acquisition prior to the commencement of construction activities on the Farmland to be converted. The acquired easement shall be in an area designated for long-term future agricultural use; or

2. SCE shall pay a fee equal to or greater than the value of a previous farmland conversion transaction in the planning area plus the estimated cost of legal appraisal and other costs, including staff time, to acquire property for agricultural mitigation. The fee shall be used for farmland mitigation purposes, with priority given to lands with prime agricultural soils and habitat value. SCE shall provide evidence to the CPUC documenting fee payment prior to the commencement of construction activities on the Farmland to be converted.

Significance after Mitigation: Less than Significant.

---

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract. (No Impact)

According to the Williamson Act maps for Riverside and San Bernardino counties published by the DOC, no lands within an active Williamson Act contract occur within or along any of the Project elements (e.g., substation site, subtransmission and source line alignments, and staging yards) (DOC, 2016b; DOC, 2016c). Therefore, the Project would not conflict with a Williamson Act contract, and no impact would occur.

The Project alignments do not traverse any agricultural zoning in Corona, but the proposed Mira Loma-Jefferson subtransmission line would traverse land in Norco zoned as Low Density Agriculture, land in Eastvale zoned as Heavy Agriculture, land in Chino zoned as General Agriculture, and an Agricultural Overlay in Ontario (City of Chino, 2015; City of Corona, 2014; City of Eastvale, 2015; City of Norco, 2012; and City of Ontario, 2015a). However, the City of Norco Municipal Code Section 18.13.08 states that public utility uses are allowed by a Conditional Use Permit within land zoned as Low Density Agriculture (City of Norco, 2016). Although public utility uses are a compatible use, CPUC General Order No. 131-D states that local land use regulations do not apply. Therefore, a Conditional Use Permit would not be required and no conflict with existing agricultural zoning would occur. There would be no impact.

In the City of Eastvale, the land zoned as Heavy Agriculture only applies to the flood control channel that is spanned by the alignment, so no conflict with agricultural zoning would occur in Eastvale. In the City of Chino, the Project alignment would run adjacent to land zoned as General Agriculture. Along this alignment, the only activity that would occur is the replacement of existing poles, and therefore conflicts with agricultural zoning would not occur. There would be no impact.

The portion of the proposed Mira Loma-Jefferson subtransmission line alignment in Ontario traverses an Agricultural Overlay District, which, according to the City of Ontario Development Code, expressly prohibits electric power transmission, control, and distribution. However, the entire alignment section in Ontario would be developed within an existing right-of-way (ROW); would be developed adjacent to other existing electrical utility lines; and would consist of replacing existing poles. Therefore, no new incompatible uses would be introduced within the Agricultural Overlay District, and conflicts with zoning would not occur within Ontario (City of

Ontario, 2015b). As a result, there would be no impact from the Project on existing agricultural zoning in any jurisdiction (No Impact).

---

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526) or timberland zoned Timberland Production (as defined by Government Code §51104(g). (No Impact)

There is no zoning for forest land or timberland, or timberland zoned Timberland Production, within or adjacent to the Project elements (No Impact).

---

d) Result in the loss of forest land or conversion of forest land to non-forest use. (No Impact)

There is no forest land within or adjacent to the Project elements. Therefore, the Project would have no impact on the conversion of forest land to non-forest use (No Impact).

---

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. (No Impact)

As described above under criteria c) and d), there is no forest land within or adjacent to the Project elements. Therefore, the Project would have no direct impact on the conversion of forest land to non-forest use. For portions of the Project that would be constructed or installed within existing agricultural lands, per the analysis under criteria a) and b), the Project would temporarily and permanently convert Farmland to non-agricultural use.

Changes that could result in the conversion of Farmland to non-agricultural use may include changes in water availability to lands, inducement of population growth that could result in new housing or other facilities being built within lands, or the installation of structures that could impede farming practices. As discussed in Section 4.10, *Hydrology and Water Quality*, the Project would not result in substantial changes in surface hydrology or water quality, nor would it result in groundwater drawdown or changes in groundwater recharge or water quality. Therefore, it would not cause changes in the availability or quality of water that supports agricultural or forest uses. Additionally, as discussed in Section 4.14, *Population and Housing*, the proposed Project would not result in substantial population growth or in the construction of housing that may be built on Farmland or forest land. Accordingly, the Project would not result in conversion of Farmland to non-agricultural uses based on water availability or inducement of population growth. There would be no impact.

Other changes in the existing environment that could result in the conversion of Farmland to non-agricultural use include the installation of additional overhead subtransmission lines impeding the

use of aerial farming practices (e.g., for pest management). Aerial farming practices are not common in the Project area and the Project would be collocated with existing overhead lines and tall structures in all portions of the alignment within or near Farmland; therefore, the addition of a transmission line within an existing in-use transmission ROW would have a minimal incremental impact on the ability to use aerial farming practices in the Project area, and is not expected to result in the conversion of Farmland to non-agricultural use. There would be no impact.

4.2.5 Alternatives

4.2.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would not affect agriculture or forestry resources (No Impact).

4.2.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Implementation of Alternative B would result in the same impact as the proposed Project regarding the temporary and permanent conversion of Farmland to non-agricultural use. Impacts to Farmland between Hellman Avenue and the Mira Loma Substation would be mitigated to less than significant with implementation of **Mitigation Measure 4.2-1** (Impact 4.2-1; Class II). As under the proposed Project, no other changes to the environment could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land would occur under Alternative B (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

No Farmland, forest land, or timber land exists along the Alternative C1 alignment. Therefore, identical to the proposed Project along this section of Hellman Avenue, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative C1. Implementation of Alternative C1 would result in the same impact as the proposed Project regarding the temporary and permanent conversion of Farmland between Archibald Avenue and the Mira Loma Substation to non-agricultural use (Impact 4.2-1; Class II).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Implementation of Alternative C2 would convert less Farmland to non-agricultural use compared to the proposed subtransmission line alignment because this alternative alignment would avoid Prime Farmland and Unique Farmland located west of Archibald Avenue. Impacts to Farmland between Archibald Avenue and the Mira Loma Substation would be mitigated to less than significant with implementation of **Mitigation Measure 4.2-1** (Class II). As under the proposed subtransmission line alignment, no other changes to the environment could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land would occur under Alternative C2 (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Implementation of Alternative C3 would eliminate the Project's impact regarding the temporary and permanent conversion of Farmland to non-agricultural land along the Mira Loma-Jefferson subtransmission line alignment since the Mira Loma-Jefferson subtransmission line would not be constructed under this alternative. No Farmland, forest land, or timber land exists on the Alternative C3 sites. As under the proposed Project, no other changes to the environment could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land would occur under Alternative C3 (No Impact).

4.2.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.* The following analysis for Alternatives D1, D2, E1, E2, E3, and E4 discuss only those impacts related to the distribution service objective alternative components and does not discuss the impacts resulting from the subtransmission components discussed in the proposed Project or Alternatives C1 and C2 above.

Alternative D1: 12 kV Distribution-Level Battery Storage

No Farmland, forest land, or timber land exists on the Alternative D1 site. Therefore, identical to the proposed Circle City Substation site, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative D1 (No Impact).

Alternative D2: 66/12 kV Substation Site Alternative

No Farmland, forest land, or timber land exists on the Alternative D2 site. Therefore, identical to the proposed Circle City Substation site, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative D2 (No Impact).

Alternative E1: Quarry Street 66 kV Source Lines Segment

No Farmland, forest land, or timber land exists along the Alternative E1 alignment. Therefore, identical to the proposed Pedley Source Lines alignment, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative E1 (No Impact).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

No Farmland, forest land, or timber land exists along the Alternative E2 alignment. Therefore, identical to the proposed Pedley Source Lines alignment, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative E2 (No Impact).

Alternative E3: Southern 66 kV Source Lines Alignment

No Farmland, forest land, or timber land exists along the Alternative E3 alignment. Therefore, identical to the proposed Databank Source Lines alignment, there would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative E3 (No Impact).

Alternative E4: Databank 66 kV Source Lines Only

No Farmland, forest land, or timber land exists along the Alternative E4 alignment. There would be no temporary or permanent disturbance to Farmland, no other changes to the environment that could cause conversion of farmland to non-agricultural land, and no loss or conversion of forest land or timber land resulting from implementation of Alternative E4 (No Impact).

References – Agriculture and Forestry Resources

California Department of Conservation (DOC), 2012a. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/.

DOC, 2012b. Riverside County Important Farmland 2010. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/riv10_west.pdf.

DOC, 2012c. San Bernardino County Important Farmland 2010. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/sbd12_no.pdf.

DOC, 2014a. California Important Farmland Finder. Available at: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed on June 7, 2016.

DOC, 2014c. San Bernardino County Important Farmland 2014. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/. Accessed on November 9, 2016.

DOC, 2014d. Riverside County 1984-2014 Land Use Summary. Available at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/Riverside.aspx.

DOC, 2014e, San Bernardino County 1984-2014 Land Use Summary. Available at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanBernardino.aspx.

DOC, 2015. California Farmland Conversion Report 2015. Available at: www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2010-2012/FCR/FCR%202015_complete.pdf. Accessed on June 6, 2016.

DOC, 2016a. Important Farmland Categories. Available at: http://www.conservation.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx. Accessed on June 7, 2016.

DOC, 2016b. Riverside County Williamson Act FY 2015/2016. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/. Accessed on June 7, 2016.

DOC, 2016c. San Bernardino County Williamson Act FY 2015/2016. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/. Accessed on June 7, 2016.City of Chino, 2010. Envision Chino City of Chino General Plan 2025. Available at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 13, 2016.

City of Chino, 2015. City of Chino Zoning Map. Available at: http://www.cityofchino.org/government-services/community-development/planning/maps. Accessed June 13, 2016.

City of Corona, 2004. City of Corona General Plan. Available at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on June 13, 2016.

City of Corona, 2014. City of Corona Zoning and Specific Plans. Available at: http://www.discovercorona.com/City-Departments/Community-Development/Planning-Division/General-Plan-and-Zoning-Maps.aspx. Accessed on June 13, 2016.

City of Eastvale, 2012. City of Eastvale General Plan. Available at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 13, 2016.

City of Eastvale, 2015. City of Eastvale Zoning. Available at: http://www.eastvaleca.gov/about-eastvale/city-maps. Accessed June 13, 2016.

City of Norco, 2001. City of Norco General Plan Land Use Element. Accessed June 20, 2016.

City of Norco, 2012. City of Norco Zoning Map. Available at: http://www.norco.ca.us/depts/planning/general.asp. Accessed June 13, 2016.

City of Norco, 2016. Chapter 18.13 A-1 Zone Agricultural Low Density. Available at: http://www.codepublishing.com/CA/Norco/. Accessed on June 13, 2016.

City of Ontario, 2010. City of Ontario Policy Plan. Available at: http://www.ontarioplan.org/policy-plan/. Accessed on June 13, 2016.

City of Ontario, 2015a. Zoning Map. Available at: http://www.ontarioca.gov/planning/maps/zoning-map/. Accessed June 13, 2016.

City of Ontario, 2015b. City of Ontario Development Code. Available at: http://www.ontarioca.gov/planning/documents/development-code. Accessed June 13, 2016.

County of Riverside Agricultural Commissioner's Office (CRACO), 2014. Riverside County Agricultural Production Report 2014. Available at: http://www.rivcoag.org/Portals/0/Publications/Crop%20Reports-EntireCounty/2014%20Riverside%20County%20Agricultural%20Production%20Report.pdf. Accessed on June 7, 2016.

County of Riverside, 2015. Riverside County General Plan. December 15, 2015. Available at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 13, 2016.

County of San Bernardino, Department of Agriculture / Weight and Measures (CSBDAWM), 2014. Annual Crop Report 2014. Available at: http://cms.sbcounty.gov/LinkClick.aspx?fileticket=DSfAMTgHKQ4%. Accessed on June 6, 2016.

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment (December 2015).

4.3 Air Quality

This section evaluates the impacts of the Project, as well as the alternatives, on regional and local air quality due to sources of air pollutant emissions during construction, operation, and maintenance activities.

4.3.1 Setting

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions, which influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The Project area lies between the San Jacinto Mountains to the south and the San Gabriel Mountains to the north within the inland valley of the South Coast Air Basin (Air Basin). The air above the Air Basin often exhibits weak vertical and horizontal dispersion characteristics, which limit the dispersion of emissions and cause increased ambient air pollutant levels. Persistent temperature inversions tend to prevent vertical dispersion. These inversions act as "ceilings" that prevent pollutants from rising and dispersing. The aforementioned mountain ranges act as "walls" that inhibit horizontal dispersion of air pollutants. This mix of topography and persistent weather patterns tends to retain pollutants for substantial periods and can contribute to poor local and regional air quality.

The study area typically has average maximum and minimum winter (i.e., January) temperatures of 68 degrees Fahrenheit (ºF) and 55 ºF, respectively, while average summer (i.e., July) maximum and minimum temperatures are 92 ºF and 60 ºF, respectively. Rainfall averages approximately 12 inches per year (Weatherbase, 2016).

4.3.1.1 Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants and has set National Ambient Air Quality Standards (NAAQS) for widespread pollutants from numerous and diverse sources that are a threat to public health and welfare. The USEPA has set NAAQS for seven principal pollutants, which are called "criteria" pollutants:

- Carbon monoxide (CO);
- Lead;
- Nitrogen dioxide (NO_2);
- Ozone;
- Particulate matter less than or equal to 10 microns in diameter (PM_{10});
- Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$); and
- Sulfur dioxide (SO_2).

The State of California has established California Ambient Air Quality Standards (CAAQS) for these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide (H_2S), and vinyl chloride. NAAQS and CAAQS are summarized in Table 4.3-2.

Below are descriptions of criteria pollutants that are a concern for this EIR because they would be generated by the Project.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOC) and nitrogen oxides (NO_x). VOC and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of VOC and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when conditions, such as long sunny days and regional subsidence inversions, are conducive to the formation and accumulation of secondary photochemical compounds.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is an air quality pollutant of concern because it acts as a respiratory irritant. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as oxides of nitrogen (NO_x). A precursor to ozone formation, NO_x is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NO_x emitted from fuel combustion is in the form of nitric oxide (NO) and NO_2. NO is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere.

Carbon Monoxide

Carbon monoxide (CO) is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Particulate Matter

Particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Particulates can damage materials and reduce visibility. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. According to a study by the California Air Resources Board (CARB), the estimated number of annual $PM_{2.5}$-related premature deaths in California is 9,200 (CARB, 2010).

Sulfur Dioxide

Sulfur Dioxide (SO_2) is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

4.3.1.2 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes nearly 200 compounds, including Diesel Particulate Matter (DPM) emissions from diesel-fueled engines (CARB, 2011).

4.3.1.3 Valley Fever

Valley Fever (formally known as Coccidioidomycosis) is an infectious disease caused by the fungus *Coccidioides immitis*. Valley Fever is also known as San Joaquin Valley Fever, Desert Fever, or Cocci. Infection is caused by inhalation of *Coccidioides immitis* and *Coccidioides posadasii* spores that have become airborne when dry, dusty soil or dirt is disturbed by natural processes such as wind or earthquakes, or by human induced ground disturbing activities such as construction, farming, etc.

The California Department of Public Health received reports of 16,108 incident cases of valley fever from 2009 through 2012. Coccidioidomycosis is highly endemic in the San Joaquin Valley and remains an important public health problem in California but is not as prevalent in San Bernardino and Riverside counties. There is currently no vaccine; efforts to develop a vaccine are ongoing (CDPH, 2014).

4.3.1.4 Existing Air Quality

The South Coast Air Quality Management District (SCAQMD) is the local air district responsible for air quality within the Air Basin including all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. The Air Basin is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

The SCAQMD maintains a regional monitoring network that measures the ambient concentrations of criteria pollutants in the Air Basin. Ambient air quality measurements from air monitoring stations maintained by SCAQMD help to determine the level of air quality in the local area. The closest air quality monitoring station to the Project is the Mira Loma Van Buren station, approximately 5 miles to the east of Mira Loma Substation. **Table 4.3-1** shows a 5-year (2012 through 2016) summary of ozone, PM_{10}, and $PM_{2.5}$ data monitored at the Mira Loma Van Buren station. The data are compared to the CAAQS and NAAQS.

TABLE 4.3-1
AIR QUALITY DATA SUMMARY (2012–2016) FOR THE STUDY AREA

Pollutant	Standard	Monitoring Data by Year				
		2012	2013	2014	2015	2016
Ozone						
Highest 1 Hour Average (ppm)		0.124	0.118	0.138	0.127	0.140
Days over State Standard	0.09	31	11	17	29	34
Highest 8 Hour Average (ppm)		0.102	0.096	0.102	0.104	0.106
Days over National Standard*	0.070	70	31	52	51	65
Particulate Matter (PM_{10})						
Highest 24 Hour Average (μg/m^3)		76	143	83	109	**
Days over State Standard	50	15	12	15	20	**
State Annual Average (μg/m^3)	20	40	40	42	43	**
Particulate Matter ($PM_{2.5}$)						
Highest 24 Hour Average (μg/m^3)		39	57	74	57	72
Days over National Standard	35	7	9	9	17	7
State Annual Average (μg/m^3)	12	15	19	19	**	*14

NOTES: ppm = parts per million; μg/m^3 = micrograms per cubic meter;

* On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over 3 years, is equal to or less than 0.070 ppm. USEPA will issue final designations by October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

** insufficient data

SOURCE: CARB, 2017

As shown in **Table 4.3-1**, the State 1-hour ozone standard was exceeded 11 to 34 times per year during the 2012 through 2016 period. The national 8-hour ozone standard was exceeded 31 to 70 times per year during the 5-year period. The 24-hour State PM_{10} standard was exceeded 12 to 20 times each year during the 4 years with sufficient data. The annual average PM_{10} concentrations exceeded the State standard each of the 4 years with sufficient data. The national 24-hour $PM_{2.5}$

standard was exceeded 7 to 17 times per year during the 5-year period and the annual average $PM_{2.5}$ concentrations exceeded the State standard each of the 4 years with sufficient data.

4.3.1.5 Sensitive Receptors

For the purposes of this air quality analysis, sensitive receptors are generally defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, and/or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

Proposed Project

Sensitive receptors near the Project sites and routes include residences immediately adjacent to the source line routes and Mira Loma-Jefferson 66 kV Subtransmission Line route, and residences at Corona La Linda Mobile Home Park, east of South Temescal Street, approximately 800 feet from the proposed Circle City Substation fence line. The closest residences to Mira Loma Substation are approximately 300 feet to the north. These residences are approximately 2,000 feet from the nearest proposed substation upgrades and Mira Loma-Jefferson line components. There are also three schools in the vicinity of the Mira Loma-Jefferson subtransmission line alignment, including: Auburndale Intermediate School, located adjacent to the Mira Loma-Jefferson subtransmission line route along River Road; and Victress Bower Elementary and George Washington Elementary, both located approximately 500 feet from the Mira Loma-Jefferson subtransmission line alignment. In addition, a day care center is located approximately 800 feet southwest of the proposed Databank Source Lines alignment. There are also several parks within 1,000 feet of the source line and Mira Loma-Jefferson subtransmission line, including James C. Huber Park, Fairview Park, River Road Park, and City Park.

Subtransmission Line Alignment Alternatives

Alternative C1 (Underground Hellman Avenue) would expose the same sensitive receptors as the Project along the proposed Mira-Loma Jefferson subtransmission line alignment. Alternative C2 (Archibald Avenue) would occur adjacent to residential receptors along Archibald Avenue between Belgrave Avenue and the Santa Ana River. This route would also occur within 1,000 feet of several parks including James C. Huber Park, Deer Creek Park, McCune Family Park, and Dairyland Park. The route would occur in a southeasterly direction along the Mira Loma-Jefferson subtransmission line alignment exposing the same receptors as described for the Project. With regard to Alternative C3 (Subtransmission-Level Battery Storage), the 50 MW subtransmission-level battery storage facility would be located approximately 270 feet east-northeast of the Christian Heritage School and approximately 50 feet south of residences along Pleasant View Avenue; the 42 MW subtransmission-level battery storage facility would be

located approximately 500 feet southwest of the closest building associated with Corona High School and approximately 50 feet north, east, and west of residence along Fairmont Drive, Border Avenue, and Zircon Street, respectively. The subtransmission line alignment under Alternative C3 to connect the 42 MW facility to Jefferson Substation is within 50 feet of residences. The subtransmission line alignment to connect the 50 MW facility to Corona Substation is within 50 feet of apartments and a trailer park. The work at Jefferson Substation to accommodate the new 66 kV subtransmission line under Alternative C3 would occur within 50 feet of residences on Tabitha Way.

Substation Alternative Sites

Residences at Corona La Linda Mobile Home Park would be approximately 800 feet from the Distribution-Level Battery Storage Alternative (Alternative D1) site fence line. The northern boundary of the Substation Site Alternative (Alternative D2) would be approximately 100 feet to the closest residences at Corona La Linda Mobile Home Park in the City of Corona.

Alternative Source Lines

Alternative E1 (Quarry Street Segment) would be adjacent to residences along East Grand Boulevard and Quarry Street, and would pass adjacent to the north side of City Park. Alternative E2 (Underground Pedley Lines from Interstate 15 to Circle City Substation) would be adjacent to the same sensitive receptors as the Project just west of the Interstate 15 to the proposed substation site. Alternative E3 (Southern Route) would continue at the intersection of Cota Street and West Harrison Street approximately 640 feet away from the residences along Railroad Street. This route would then expose receptors such as workers in commercial and industrial uses along West Blaine Street, Joy Street, and East Grand Boulevard. The Southern Route would then expose the same sensitive receptors as Alternative E2 above.

4.3.1.6 Regulatory Setting

Air quality within the Air Basin is addressed through the efforts of various federal, State, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The air pollutants of concern and agencies primarily responsible for improving the air quality within the Air Basin and the pertinent regulations are discussed below.

Criteria Air Pollutants

Regulation of air pollution is achieved through both CAAQS and NAAQS as well as emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for ozone, CO, NO_2, Sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants are called “criteria” air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set “primary” and “secondary” maximum ambient thresholds for all six criteria pollutants. Primary thresholds were set to protect

human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards (i.e., CAAQS) for most of the criteria air pollutants. **Table 4.3-2** presents both sets of ambient air quality standards (i.e., national and State) and provides the attainment status for each. California has also established State ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected under the Project or alternatives and are not further discussed in this EIR.

The Air Basin is classified as a non-attainment area for the State 1-hour ozone standards as well as the State and federal eight-hour ozone standards. The air basin is also a non-attainment area relative to the State and federal $PM_{2.5}$ standards, and the State PM_{10} and lead standards. For all other criteria pollutants, the Air Basin is classified as either unclassified or as attainment with respect to State and federal standards (SCAQMD, 2016).

Federal

The USEPA is responsible for implementing programs established under the federal Clean Air Act (CAA), such as establishing and reviewing the NAAQS and judging the adequacy of State Implementation Plans (SIPs), but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

State

CARB is responsible for establishing and reviewing the State standards, compiling the California SIP and securing approval of that plan from USEPA, conducting research and planning, and identifying toxic air contaminants. CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality districts, which are organized at the county or regional level. County or regional air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal CAA and California CAA.

California's Diesel Risk Reduction Plan / Diesel Fuel Regulations

As part of California's Diesel Risk Reduction Plan, CARB has passed numerous regulations to reduce diesel emissions from vehicles and equipment that are already in use. Combining these retrofit regulations with new engine standards for diesel fueled vehicles and equipment, CARB intends to reduce DPM emissions by 85 percent from year 2000 levels by 2020. California Diesel Fuel Regulations (13 Cal. Code Regs. §§2281-2285; 17 Cal. Code Regs. §93114) provide standards for diesel motor vehicle fuel and non-vehicular diesel fuel.

TABLE 4.3-2
NAAQS/CAAQS AND ATTAINMENT STATUS FOR THE AIR BASIN

Criteria Pollutant	Averaging Time	State Standard	South Coast Air Basin Attainment Status for California Standard	Federal Primary Standard	South Coast Air Basin Attainment Status for Federal Standard
Ozone	8 Hour	0.070 ppm	Non-Attainment	0.070 ppm[a]	Non-Attainment (Extreme)
	1 Hour	0.09 ppm	Non-Attainment	---	---
Carbon Monoxide	8 Hour	9.0 ppm	Attainment	9 ppm	Attainment (Maintenance)
	1 Hour	20 ppm	Attainment	35 ppm	Attainment (Maintenance)
Nitrogen Dioxide	Annual Average	0.030 ppm	Attainment	0.053 ppm	Attainment (Maintenance)
	1 Hour	0.18 ppm	Attainment	0.100 ppm	Unclassifiable/Attainment
Sulfur Dioxide[b]	Annual Average	---	---	0.030 ppm	Unclassifiable/Attainment
	24 Hour	---	---	0.14 ppm	Unclassifiable/Attainment
	1 Hour	---	---	0.075 ppm	Designations Pending (expect Uncl./Attainment)
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 mg/m^3	Non-Attainment	---	---
	24 Hour	50 mg/m^3	Non-Attainment	150 mg/m^3	Attainment (Maintenance)[g]
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 mg/m^3	Non-Attainment	12.0 mg/m^3	Nonattainment (Serious)
	24 Hour	---	---	35 mg/m^3	Nonattainment (Serious)
Lead	3-Month Rolling Average	---	---	0.15 mg/m^3	Nonattainment (Partial)[c]
Hydrogen Sulfide	1 Hour	0.03 ppm/ 42 µg/m^3	Attainment	---	---
Sulfates	24 Hour	25 mg/m^3	Attainment	---	---
Vinyl Chloride	24 Hour	0.01 ppm/ 26 µg/m^3	Attainment	---	---

NOTES:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; --- = no applicable standard; PM_{10} = particulates of 10 microns or less; $PM_{2.5}$ = particulates of 2.5 microns or less;
a On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA will issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
b On February 15, 2013, USEPA published notice in the Federal Register of proposed nonattainment designations for the 2010 primary federal sulfur dioxide standards. No California areas are included in the proposal; all areas of the State remain undesignated (CARB, 2016).
c Partial Nonattainment designation – Los Angeles County portion of Basin only for near-source monitors. Expect to remain in attainment based on current monitoring data CARB, 2016).

SOURCE: SCAQMD, 2016

CARB has also adopted a regulation for in-use off-road diesel vehicles that is designed to reduce emissions from diesel-powered construction and mining vehicles by imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to no more than 5 minutes.

Local

South Coast Air Quality Management District

The Project and alternatives are located in the South Coast Air Basin, which includes all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. SCAQMD is the local air district with jurisdiction within this region. SCAQMD programs include the adoption and enforcement of regulations and policies, as well as implementation of education and public outreach programs. SCAQMD is responsible for attaining and/or maintaining air quality in the Air Basin within federal and State air quality standards. Specifically, SCAQMD has the responsibility to monitor ambient air pollutant levels throughout the Air Basin and to develop and implement strategies to attain the applicable federal and State standards.

Regulation IV – Prohibitions, Rule 402 – Nuisance

This rule prohibits the discharge of air contaminants or other material in quantities that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Regulation IV – Prohibitions, Rule 403 – Fugitive Dust

This rule limits the emissions of fugitive dust or particulate matter from a variety of activities and sources such as construction sites, bulk material hauling, unpaved parking lots, and disturbed soil in open areas and vacant lots. It includes a visible emissions property line standard, requirement to implement Best Available Control Measures, upwind/downwind PM_{10} concentrations standards, prevention of track-out on to paved public roads, and special control requirements for large operations.

Air Quality Management Plans

The 2012 SCAQMD Air Quality Management Plan (2012 AQMP) was adopted by the SCAQMD Board on December 7, 2012. It incorporates scientific and technological information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy and updated emission inventory methodologies for various source categories. The 2012 AQMP included the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. A Supplement to the 2012 AQMP was prepared to demonstrate attainment of the 24-hour $PM_{2.5}$ standard by 2015. The strategies incorporated into the plan were developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG).

The 2012 AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy (SCAQMD, 2012). Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP.

As part of its triennial assessment and plan update requirements under the California CAA, SCAQMD has prepared the 2016 Air Quality Management Plan (2016 AQMP), which is a comprehensive and integrated plan focused on addressing the federal ozone and $PM_{2.5}$ standards. The 2016 AQMP is a regional and multi-agency effort consisting of SCAQMD, CARB, SCAG, USEPA, California Energy Commission, and CPUC. The 2016 AQMP is composed of stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile source strategies, and reductions from federal sources, which include aircraft, locomotives, and ocean-going vessels (SCAQMD, 2017).

The SCAQMD Governing Board adopted and CARB approved the 2016 AQMP in March 2017, but the USEPA has yet to approve it for inclusion in the SIP (SCAQMD, 2018). The strategies included in the 2016 AQMP are intended to demonstrate attainment of the NAAQS for the federal non-attainment pollutants ozone and $PM_{2.5}$ (SCAQMD, 2017). Until the 2016 AQMP is approved by the USEPA, the 2012 AQMP remains the effective AQMP.

Riverside County General Plan

The following air quality policies identified in the Riverside County General Plan would be applicable to the Project (County of Riverside, 2014).

> *Policy AQ 4.7:* To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.
>
> *Policy AQ 4.9:* Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.
>
> *Policy AQ 4.10:* Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

City of Chino General Plan

The City of Chino General Plan contains the following policies regarding air quality that would be applicable to the Project (City of Chino, 2010).

> *AQ-1.2 P3:* The City shall utilize the CEQA process to identify and avoid or mitigate potentially significant air quality impacts associated with new development.
>
> *AQ-1.3 P2:* The City shall require best management practices to reduce air pollution associated with construction of development projects.

Other General Plans

The air quality policies of the City of Corona General Plan and City of Eastvale General Plan are not applicable to the Project (City of Corona, 2004; City of Eastvale, 2012). The City of Norco General Plan and City of Ontario General Plan do not contain policies regarding air quality that would be applicable to the Project (City of Norco, 2001; City of Ontario, 2010).

4.3.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant air quality effects on the environment if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

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

d) Expose sensitive receptors to substantial pollutant concentrations; or

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

The CPUC typically uses local air district thresholds for evaluating air quality impacts under CEQA. The SCAQMD has established air pollution emissions criteria for determining the significance of an impact during project construction and operation, and these thresholds have been used to evaluate the impacts of the Project on air quality (see **Table 4.3-3**).

TABLE 4.3-3
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Criteria Pollutant Thresholds		
	Mass Daily Thresholds (pounds/day)	
Pollutant	Construction	Operation
NO_x	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SOx	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden ≥ 0.5 (in areas ≥ 1 in 1 million) Chronic & Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	

NOTES:
ppm = oxides of Nitrogen; VOC = volatile organic compounds; PM_{10} = particulate matter less than 10 microns in diameter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; SO_x = oxides of Sulfur; Co = Carbon Monoxide

SOURCE: SCAQMD, 2015

4.3.3 Applicant Proposed Measures

Southern California Edison (SCE) has identified the following applicant proposed measures (APMs) to minimize impacts on air quality from the Project. The impact analysis assumes that the APMs would be implemented (i.e., part of the Project) to reduce impacts to air quality as discussed below.

APM AIR-01: Fugitive Dust. During construction, surfaces disturbed by construction activities would be covered or treated with a dust suppressant until completion of activities at each site of disturbance. On-site unpaved roads and off-site unpaved access roads utilized during construction within the Project area would be effectively stabilized (e.g., using water or chemical stabilizer/suppressant) to control dust emissions. On-road vehicle speeds on unpaved roadways would be restricted to 15 miles per hour.

APM AIR-02: Tier 3 Engines. Off-road diesel construction equipment with a rating between 100 and 750 horsepower would be required to use engines compliant with United States (U.S.) Environmental Protection Agency Tier 3 non-road engine standards. In the event that a Tier 3 engine is not available, the equipment would be equipped with a Tier 2 engine and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled off-road construction equipment or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 2 engine is not available, that equipment would be equipped with a Tier 1 engine and documentation of the unavailability would be provided.

4.3.4 Impacts and Mitigation Measures

4.3.4.1 Approach to Analysis

The SCAQMD has adopted CEQA thresholds of significance for both short-term construction and long-term project operations as identified in Table 4.3-3, above. The SCAQMD has determined that an exceedance of the threshold for either NO_x or VOC or both of these precursors indicates that a project would individually and cumulatively jeopardize attainment of ozone standards, and would result in a significant adverse impact on air quality.

Criteria pollutant emissions from construction equipment and vehicle exhaust and generation of particulate matter in the form of fugitive dust are the primary concerns in evaluating short-term air quality impacts. While long-term impacts associated with criteria pollutants were also evaluated, these would not be significant since emission-related activities associated with Project operations and maintenance would be limited to periodic maintenance and inspection trips similar to what is occurring now along the existing subtransmission and transmission line ROWs.

Exhaust pollutants would be emitted during construction activities from a variety of construction and earth-moving equipment, including motor-driven construction equipment, construction vehicles, and workers' vehicles. Fugitive dust would be generated by ground disturbing activities as well as from heavy truck travel on paved and unpaved roads.

a) Conflict with or obstruct implementation of the applicable air quality plan.

Impact 4.3-1: Construction activities would generate pollutant emissions that would conflict or obstruct implementation of the applicable air quality plan. *Significant and unavoidable* (Class I)

The Project would be under the jurisdiction of the SCAQMD. The SCAQMD's most recently approved AQMP was adopted in December of 2012. Construction of the Project would be conducted in compliance with applicable federal, state, and local requirements. Project construction activities have the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment, such as excavators and graders, and through vehicle trips generated from worker trips and haul trucks traveling to and from the proposed Project sites. In addition, fugitive dust emissions would result from various soil-handling activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources (see Impact 4.3-2).

To determine if a project would conflict with or obstruct implementation of the applicable air quality plan, lead agencies must demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related) upon which the air quality plan is based. The Project would result in an increase in short-term employment compared to existing conditions. Being relatively small in number (approximately 100 workers per day) and temporary in nature, construction jobs under the Project would not conflict with the long-term employment projections upon which the 2012 AQMP is based. Control strategies in the 2012 AQMP, potentially applicable to control temporary emissions from the proposed Project's construction activities, include ONRD-04 and OFFRD-01,[1] which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating the replacement of older, emissions-prone engines with newer engines that meet more stringent emission standards.

As described under Impacts 4.3-2, ~~4.6-3,~~ 4.6-4, and 4.3-6, the Project would result in significant impacts associated with construction emissions of criteria pollutants. Even with implementation of Mitigation Measure 4.3-2a, which would require SCE to implement additional feasible fugitive dust controls beyond those required by SCAQMD Rule 403, and Mitigation Measures 4.3-2b, which would require SCE to use the cleanest available construction equipment, the CPUC cannot established that Project-related emissions of PM_{10} and NO_x during construction activities would be reduced to less than the applicable significance thresholds. Therefore, although the Project would not directly conflict with implementation of the 2012 AQMP measures, it could result in a violation of an air quality standard or contribute substantially to an existing or projected air quality violation, which would not be consistent with the intent of the 2012 AQMP. Since

[1] 2012 AQMP measure ONRD-04 applies to on-road mobile sources and is the accelerated retirement of older on-road heavy-duty vehicles to reduce emissions of NO_X and particulate matter. 2012 AQMP measure OFFRD-01 applies to off-road mobile sources and is the extension of the Surplus Off-Road Opt-In for NO_X (SOON) provision for construction/industrial equipment to encourage the accelerated retirement of older off-road heavy-duty equipment to reduce emissions of NO_X.

construction of the Project would have a negative effect on the regional and localized air quality in the Air Basin and exceed applicable significance thresholds, it would also conflict or obstruct implementation of the 2012 AQMP. This impact would be significant and unavoidable.

Long-term operation of the Project would result in insignificant air pollutant emissions from worker automobile trips once a month. Exhaust emissions from these trips would be less than significant (see Impact 4.3-3). Furthermore, operations of the Project would be consistent with the applicable growth projections and control strategies used in the development of the 2012 AQMP and would not jeopardize attainment of the air quality levels identified in the 2012 AQMP because it would not induce or cause long-term population growth (see Section 4.14, *Population and Housing*). For these reasons, long-term operations of the Project would not conflict with or obstruct the implementation of the 2012 AQMP.

> **Mitigation:** Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).
>
> **Significance after mitigation:** Significant and unavoidable.

---

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact 4.3-2: Construction activities would generate pollutant emissions that would contribute substantially to an existing or projected air quality violation. *Significant and unavoidable* (Class I)

Construction of the Project would generate emissions of criteria air pollutants over a construction period of approximately 18 months. Exhaust emissions would result from construction equipment and machinery as well as from vehicular traffic generated by construction activities. Fugitive Dust emissions would result from earthwork activities and entrained particulates that become airborne from vehicles traveling on paved and unpaved surfaces. Emission levels for the various construction activities would vary with the type of equipment, duration of use, operation schedules, and size of the construction labor force.

As part of the CPUC's Permit to Construct application process, SCE provided construction-related air pollutant emissions calculations and estimates for the construction activities that would be associated with the Project (see Appendix D, *Air Quality and Greenhouse Gas Calculations*). The Project emissions were estimated by SCE using the California Emissions Estimator Model (CalEEMod) version 2013.2.2 developed by the SCAQMD. This version of CalEEMod calculates the construction equipment exhaust and fugitive dust emissions based on CARB's OFFROAD2011 model equipment emission and load factors. The CalEEMod output in Appendix D presents the Project's emissions as reactive organic gases which references the same category of gases as VOCs.[2]

To estimate peak daily Project construction emissions, SCE identified the types of construction activities that could overlap in schedule, i.e., occur simultaneously, and contribute to the

[2] CARB and some California air districts utilize the term reactive organic gases while the SCAQMD and USEPA utilize the term VOC.

combined total estimated peak daily emissions. Based on SCE's emissions estimates, concurrent construction activities for each Project component that would emit the greatest amount of daily emissions would be as follows:

- ***Circle City Substation*:** fencing, temporary power pole installation, civil, construction of the mechanical and electrical equipment rooms, and electrical;
- ***Mira Loma Substation*:** electrical, maintenance commission, and testing;
- ***Source Lines*:** establishment of the marshaling yard, tubular steel pole (TSP) hauling, TSP assembly, TSP erection, installation of wood and light-weight steel (LWS) poles, installation of conductor, vault installation, and duct bank installation;
- ***Mira Loma-Jefferson subtransmission line*:** establishment of the marshaling yard, TSP hauling, TSP assembly, TSP erection, LWS and wood pole hauling, installation of wood and LWS poles, hybrid pole hauling, installation of H-frame hybrid pole structures; transfer and installation of conductor, vault installation, and duct bank installation; and
- ***Telecommunications*:** fiber optic cable installation and fiber optic cable splicing.

SCE's emission calculations were independently reviewed by the CPUC's consultant, Environmental Science Associates (ESA), and were found to be technically adequate with the following exception. SCE's emissions estimates included two scenarios: one assuming APM AIR-01 and AIR-02 would not be implemented, while the other assumed these APMs would be implemented. The assumptions related to implementation of APM AIR-01 for fugitive dust were found to be adequate, and appropriate for the estimation of proposed Project construction emissions. The assumption SCE used for implementation of APM AIR-02 was that construction equipment engines with ratings between 100 and 750 horsepower would all be Tier 3 compliant; however, APM AIR-02 allows for the use of lower-tiered engines in the event that Tier 3 engines are not available. Since APM AIR-02 includes contingencies in the event that equipment with Tier 3 compliant engines are not available, it would not be appropriate for this analysis to assume its implementation would result in the exclusive use of 100 to 750 horsepower engines that are Tier 3 compliant. Therefore, to be conservative this analysis assumes construction-related exhaust emissions that would be associated with the proposed Project would be uncontrolled, and associated equipment would not necessarily be Tier 3 compliant. Because SCE's total PM_{10} and $PM_{2.5}$ uncontrolled emissions summaries do not incorporate the reductions associated with implementation of APM AIR-01 for fugitive dust, ESA revised SCE's uncontrolled PM_{10} and $PM_{2.5}$ construction emission estimates to include those dust control assumptions (ESA, 2017a). See the Air Quality Supplement in Appendix D.

Table 4.3-4, *Project Peak Daily Construction Emissions*, presents the estimated peak daily construction emissions that would be associated with the Project. These emissions would be dispersed throughout the study area at the various Project component sites. Construction activity along the Mira Loma-Jefferson 66 kV Line would generate the most peak daily air pollutants among all the proposed construction components associated with the Project. For information on the types and amounts of construction equipment that would be used to construct the proposed Project components, refer to Table 2-7, *Construction Equipment and Workforce Estimates*, in Chapter 2. As discussed above, the construction emissions presented in Table 4.3-4 assume

implementation of APM AIR-01, which would require the use of fugitive dust control measures, but due to the uncertainty of equipment with Tier 3 compliant engines, no controls for equipment exhaust emissions are assumed for the proposed Project.

TABLE 4.3-4
PROJECT PEAK DAILY CONSTRUCTION EMISSIONS

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Circle City Substation	24.66	7.85	96.31	139.54	0.24	13.11
Mira Loma Substation	2.87	0.95	9.51	21.95	0.03	1.81
Source Lines	49.54	12.17	114.61	229.38	0.33	19.69
Mira Loma-Jefferson 66 kV Line	185.95	28.74	153.18	290.55	0.43	26.73
Telecommunication Facilities	5.67	1.18	9.62	22.23	0.03	1.79
Total	**268.69**	**50.89**	**383.21**	**703.65**	**1.06**	**63.12**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	No

SOURCES: SCE, 2015; 2016; and ESA, 2017a. See Appendix D.

With regard to the estimated $PM_{2.5}$, CO, SO_x, and VOC emissions presented in Table 4.3-4, these mass emissions would not exceed any of the significance thresholds. Therefore, $PM_{2.5}$, CO, SO_x, and VOC emissions generated by the Project would not be expected to result in a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts associated with the generation of $PM_{2.5}$, CO, SO_x, and VOC emissions would therefore be less than significant.

As shown in Table 4.3-4, total emissions of PM_{10} would exceed the significance threshold, resulting in a significant impact. The Project would include implementation of fugitive dust control measures for disturbed areas, and paved and unpaved surfaces (see APM AIR-01 in Section 4.3.3, above), which would minimize fugitive PM_{10} emissions as required by the SCAQMD under Regulation IV, Rule 403. The PM_{10} emissions identified in Table 4.3-4 reflect a control efficiency of 55 percent to account for the proposed dust control measures during earthwork activities. However, even with the applicant proposed dust controls, PM_{10} emissions would exceed the significance threshold. Mitigation Measure 4.3-2a (see below), would require SCE to implement additional feasible fugitive dust controls beyond those required of APM AIR-01. Although these additional measures would further reduce the Project's construction-related PM_{10} emissions, SCE's emission estimates are not sufficiently detailed to the point that emission reductions associated with the additional measure can be estimated beyond the emission reductions identified for APM AIR-01. Therefore, it cannot be substantiated that the mitigated emissions would be reduced to below the significance threshold; hence, the impact relative to the potential for the Project to result in a violation of a PM_{10} standard or contribute substantially to an existing or projected PM_{10} violation would be significant and unavoidable.

As shown in Table 4.3-4, total emissions of NO_x would continue to exceed the significance threshold even with implementation of APM AIR-02, resulting in a significant impact. Therefore, Mitigation Measure 4.3-2b would require SCE to implement Tier 4 construction equipment, if available. Since implementation of Mitigation Measure 4.3-2b would require SCE to use the cleanest available construction equipment beyond what is required under APM AIR-02, the Project-related NO_x exhaust emissions would be expected to be lower than what is presented in Table 4.3-4. While implementation of Mitigation Measure 4.3-2b would reduce NO_x emissions to the maximum extent feasible, the availability of construction equipment at the time of Project construction that meets the highest USEPA-certified tiered emission standards is currently unknown. As a result, it cannot be established at this time that implementation of Mitigation Measure 4.3-2b would reduce NO_x emissions to below the significance threshold. Therefore, the significant impact relative to the potential for the Project to result in a violation of an ozone or NO_2 standard or contribute substantially to an existing or projected ozone or NO_2 violation would be unavoidable even with incorporation of mitigation.

Mitigation Measure 4.3-2a: Fugitive Dust Controls. The following fugitive dust control measures shall be implemented during the construction phase by SCE and/or its construction contractors:

- Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- Use a gravel apron on unpaved truck exit routes, 25 feet long by road width, to reduce mud/dirt trackout;
- Graded and/or excavated inactive areas of the construction site shall be monitored by ~~SCAQMD air district or approved~~ a third party hired by SCE at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally-safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally-safe dust suppressants, to prevent excessive fugitive dust;
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard off site. Dust emissions that are visible off site would be considered as one factor indicating a potential nuisance or hazard. The site superintendent/supervisor shall use his/her discretion in conjunction with the SCAQMD in determining when winds are excessive;
- Require paved streets that adjoin unpaved roads where vehicles would be entering and exiting to be swept by Rule 1186 compliant PM_{10} efficient vacuum units (14-day frequency);
- All trucks hauling dirt, sand, or other loose materials are to be tarped with a fabric cover, with the exception of trucks that are not designed to be tarped, such as belly

dumps, and maintain a freeboard height of at least 12 inches. Water shall be applied to the truck loads hauling dirt, sand, or other loose materials that are not designed to be tarped prior to leaving the site;

- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.

Mitigation Measure 4.3-2b: Construction Equipment Exhaust Reductions. For all diesel-fueled off-road construction equipment, SCE shall make a good faith effort to use available construction equipment that meets Tier 4, the highest USEPA-certified tiered emission standard. An Exhaust Emissions Control Plan that identifies each off-road unit's certified tier specification and Best Available Control Technology (BACT) shall be submitted to the CPUC for review and approval at least 30 days prior to commencement of construction activities. Construction activities cannot commence until the Plan has been approved. For all pieces of equipment that would not meet Tier 4 emission standards, the Exhaust Emissions Control Plan shall include recent documentation from at least two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment.

In the event that SCE is not able to identify each piece of equipment 30 days before commencement of construction activities due to unforeseeable construction equipment availability, SCE shall maintain an equipment log that lists the equipment identification number, certified tier and BACT specification, California Air Resources Board (CARB) or South Coast Air Quality Management District (SCAQMD) operating permit specifications, and documents availability of Tier 4 equipment from rental companies, as applicable, for each piece of diesel-fueled off-road construction equipment that is not identified in the Exhaust Emissions Control Plan due to unforeseeable availability issues. The log shall be submitted to the CPUC for review and approval at least 1 week before the commencement of construction activities. Construction shall not commence until SCE confirms that all diesel equipment are included in the Exhaust Emissions Control Plan or until CPUC approves the equipment log. An updated log shall be submitted to the CPUC at least 2 days prior to when any new equipment is brought to or removed from a project work site. New equipment cannot operate at the site until the updated equipment log has been approved by the CPUC.

Significance after Mitigation: Significant and Unavoidable.

Impact 4.3-3: Operation and maintenance activities would generate pollutant emissions that could contribute to an existing or projected air quality violation. *Less than significant* (Class III)

Operation and maintenance of the Project would not result in new stationary sources of criteria pollutants nor would it increase criteria pollutant emissions from existing stationary sources. Mobile source emissions-related activities associated with the operation of the Project would occur related to annual inspections of the source lines, the Mira Loma-Jefferson line, and the

telecommunication facilities, and weekly inspections at the substations. **Table 4.3-5** presents the estimated annual operation and maintenance emissions that would be associated with the Project. The emission estimates are based on the assumption that the Project would result in an increase of approximately 54 trips per year, and the trip distances would be 20 to 60 miles (see Appendix D).

TABLE 4.3-5
PROJECT PEAK DAILY OPERATION AND MAINTENANCE EMISSIONS

Project Component	Annual Operation and Maintenance Emissions (pounds)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Circle City Substation Maintenance	2.67	0.82	16.78	1.60	0.03	1.88
Source Line Routes and Telecommunication Facilities Inspections	0.02	0.01	0.11	0.01	< 0.01	0.01
Mira Loma-Jefferson 66 kV Line Inspection	14.75	1.48	0.27	0.03	< 0.01	0.03
Total (pounds per year)	**17.44**	**2.31**	**17.16**	**1.64**	**0.03**	**1.92**
Threshold (pounds per day)	150	55	550	55	150	55
Threshold Exceeded?	No	No	No	No	No	No

SOURCE: SCE, 2015; 2016. See Appendix D.

These emissions would not exceed the SCAQMD operational significance thresholds (see Table 4.3-3). Therefore, criteria pollutant emissions that would be generated by operation and maintenance of the Project would not contribute substantially to a violation of an air quality standard. Impacts would be less than significant.

Mitigation: None required.

---

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

The Air Basin is classified as nonattainment for ozone, PM_{10}, and $PM_{2.5}$ ambient air quality standards. The SCAQMD has determined that an exceedance of a project-specific threshold set forth in Tables 4.3-4 or 4.3-5 indicates that a project would result in a cumulatively considerable net increase in emissions of the pollutant. As described below short-term Project construction emissions would be cumulatively considerable, while long-term Project emissions would not be cumulatively considerable.

Impact 4.3-4: Construction activities would result in emissions of PM_{10} and NO_x that would be cumulatively considerable. *Significant and unavoidable* (Class I)

Project construction emissions of $PM_{2.5}$ and VOC would not exceed the project-specific significance thresholds; therefore, Project-related $PM_{2.5}$ and VOC emissions would not be

cumulatively considerable. Construction activities associated with the Project, as described in the Impact 4.3-2 discussion, would have an adverse effect on regional air quality through short-term increases in PM_{10} and NO_x exceeding SCAQMD significance thresholds (see Table 4.3-4, above). Impacts would be significant.

> **Mitigation:** Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).

Implementation of Mitigation Measures 4.3-2a and 4.1-2b would reduce construction-related PM_{10} fugitive dust and NO_x emissions; however, PM_{10} and NO_x emissions would still exceed the SCAQMD significance thresholds. Therefore, emissions of PM_{10} and NO_x during construction of the Project would result in a cumulatively considerable net increase of PM_{10} and NO_x, both pollutants for which the region is in nonattainment. Impacts would remain significant.

> **Significance after mitigation:** Significant and Unavoidable.

Impact 4.3-5: Operation and maintenance activities would result in emissions of criteria pollutants that would not be cumulatively considerable. *Less than significant* (Class III)

As demonstrated in Table 4.3-5, operation and maintenance of the Project would not result in criteria pollutant emissions above the SCAQMD's thresholds of significance for which the Project location is in nonattainment. Impacts would be less than significant.

> **Mitigation:** None required.

---

d) Expose sensitive receptors to substantial pollutant concentrations.

Discussion for this criterion is divided into two different impact types. First is the impact related to sensitive receptor exposure to criteria pollutants and precursors, and second is the impact related to sensitive receptor exposure to TACs.

Impact 4.3-6: Construction activities would generate emissions of criteria pollutants and precursors, potentially exposing sensitive receptors to harmful pollutant concentrations. *Significant and unavoidable* (Class I)

The SCAQMD recommends that lead agencies use its Localized Significance Threshold (LST) Methodology to evaluate the impacts of criteria pollutants on sensitive receptors during construction of a project. As detailed in Appendix D, *Air Quality Calculations*, an analysis was conducted for the Project that consisted of comparing maximum daily on-site PM_{10}, $PM_{2.5}$, CO, and NO_x mass emissions at individual locations with maximum allowable mass emissions identified in look-up tables developed by SCAQMD. According to the Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD, 2009). Hauling of soils and construction materials associated with the Project

construction is not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature, would cease once the trucks pass through the main streets, and would not exceed the significance threshold.

The look-up table values are estimates of mass emissions that could result in a local exceedance of a CAAQS. The SCAQMD's methodology takes into consideration the location of the Project site within the Air Basin, the disturbed area at each site, and the distance from the site to the nearest sensitive receptor. It is assumed that the daily disturbed areas for the proposed source lines, Mira Loma-Jefferson subtransmission line, and the telecommunications facilities were 1 acre in size with receptors approximately 25 meters (82 feet) from the Project site, which is the shortest receptor distance in the look-up tables. The daily disturbed areas for Circle City Substation and Mira Loma Substation were assumed to be 5 acres in size with receptors approximately 100 meters and 500 meters from the Project site boundary, respectively.[3] **Table 4.3-6**, *Project Peak On-Site Construction Emissions*, compares the maximum daily on-site emissions for the construction of each project component with the maximum allowable emissions from the SCAQMD's look-up tables (SCAQMD, 2009). See the Air Quality Supplement in Appendix D for all emission calculation assumptions, including construction equipment types and use parameters.

TABLE 4.3-6
PROJECT PEAK ON-SITE CONSTRUCTION EMISSIONS

Project Component	Peak On-Site Construction Emissions (pounds/day)			
	PM_{10}	$PM_{2.5}$	CO	NO_x
Circle City Substation	19.9	5.9	66.7	130.7
Threshold	58	18	3,964	378
Threshold Exceeded?	No	No	No	No
Mira Loma Substation	2.3	0.8	5.8	21.4
Threshold	228	113	22,490	778
Threshold Exceeded?	No	No	No	No
Source Lines	8.8	2.5	22.2	65.2
Threshold	4	3	674	118
Threshold Exceeded?	**Yes**	No	No	No
Mira Loma-Jefferson 66 kV Line	9.7	2.6	22.3	65.2
Threshold	4	3	647	118
Threshold Exceeded?	**Yes**	No	No	No
Telecommunication Facilities	2.8	0.6	3.9	17.9
Threshold	4	3	647	118
Threshold Exceeded?	No	No	No	No

SOURCES: SCE, 2015; 2016; and ESA, 2017a. See Appendix D.

As shown in Table 4.3-6, the Project would exceed applicable thresholds for PM_{10} with implementation of APMs AIR-01 and AIR-02 (see Section 4.3.3), above. As a result, sensitive

[3]The SCAQMD LST mass-rate lookup tables provide thresholds for projects of 1, 2, and 5 acres in size.

receptors in these locations would be exposed to significant concentrations of PM_{10}. Impacts would be significant.

> **Mitigation:** Implement Mitigation Measures 4.3-2a (Fugitive Dust Controls) and 4.3-2b (Construction Equipment Exhaust Reductions).

Since implementation of Mitigation Measure 4.3-2a would require SCE to apply additional fugitive dust controls beyond APM AIR-01 and Mitigation Measure 4.3-2b would require SCE to use the cleanest available construction equipment beyond what is required under APM AIR-02, the actual Project-related PM_{10} emissions may be lower than what is presented in Table 4.3-6, *Project Peak On-Site Construction Emissions*. Implementation of Mitigation Measures 4.3-2a and 4.3-2b would reduce PM_{10} emissions to the maximum extent feasible; however, as described in the Impact 4.3-2 discussion, above, it is not possible to quantify the emissions reductions that would be associated with these mitigation measures or whether the Project emissions would be reduced to below the LST significance thresholds. As a result, it cannot be established at this time that implementation of Mitigation Measures 4.3-2a and 4.3-2b would reduce PM_{10} emissions to below the LST significance thresholds. The construction-related PM_{10} impact would remain significant and unavoidable even with incorporation of mitigation (Class I).

As indicated in Table 4.3-6, peak daily on-site construction emissions would not exceed the LSTs for $PM_{2.5}$, CO, or NO_x. Therefore, local sensitive receptors would not be exposed to substantial concentrations of these pollutants, and the associated impacts would be less than significant.

> **Significance after Mitigation:** Significant and Unavoidable.

Impact 4.3-7: Construction activities would generate emissions of Toxic Air Contaminants, potentially exposing sensitive receptors to harmful pollutant concentrations. *Less than significant with mitigation* (Class II)

Diesel particulate matter (DPM) was identified as a TAC by CARB in 1998. Construction of the Project would result in temporary and short-term generation of DPM emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy-duty trucks. Long-term sources of DPM emissions that would be associated with the Project would be insignificant and limited to a few vehicle trips per month related to inspection and maintenance activities.

The dose to which receptors are exposed is the primary factor affecting health risk from TACs. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on 9-, 30-, and/or 70-year exposure periods when assessing TACs (such as DPM) that have only cancer or chronic non-cancer health effects. However, such health risk assessments should be limited to the duration of the emission-producing activities associated with the project, unless the activities occur for less than six months. Activities

that would last more than 2 months, but less than 6 months, are recommended to be evaluated as if they would last for 6 months. The OEHHA does not recommend assessing cancer risk for projects lasting less than 2 months at the maximum exposed individual resident (MEIR) (OEHHA, 2015).

The Project components that would take the longest to construct and would be closest to sensitive receptors would be the source lines and the Mira Loma-Jefferson 66 kV line, which would last for approximately 18 months. However, construction along these alignments would proceed at a linear pace and would not be expected to expose any one receptor along the corridors for longer than 2 to 3 weeks. The total emissions and duration of exposure at any one sensitive receptor location for the source lines and subtransmission line construction would be relatively minor compared to the exposure periods used in health risk assessments. Likewise, the proposed upgrades at Mira Loma Substation would last approximately 2 months and they would occur at a distance of approximately 2,000 feet from the nearest residences and would result in minor TAC exposure at those residences. Therefore, the health risk from the short-term DPM emissions that would be associated with construction of these Project components would be insignificant, and this impact would be less than significant.

Although construction of Circle City Substation would only take 12 months, it would result in the greatest TAC exposure to nearby residences compared to all of the other Project components. The proposed Circle City Substation site is approximately 800 feet from the nearest residences at Corona La Linda Mobile Home Park. A health risk assessment (HRA) for construction activities at Circle City Substation was conducted by ESA using OEHHA's dose-response methodology to estimate the numeric health risk impact associated with inhaled TACs. Refer to Appendix D for the HRA, which includes a detailed description of the methodology used to evaluate the health risks from on-site construction activities.

The emissions estimates used in the HRA represent the total DPM exhaust emissions that would occur for each substation construction activity (see Table 2-7, *Construction Equipment and Workforce Estimates*, for types and duration of use of equipment that would be used to conduct the construction activities under the Project). SCE's exhaust emissions estimates included two scenarios: one with default emission factors for average composite equipment fleets for the years analyzed, while the other assumed all off-road equipment engines would have USEPA Tier 3 emissions ratings; however, APM AIR-02 allows for the use of lower-tiered engines in the event that Tier 3 engines are not available. Therefore, the HRA used SCE's PM_{10} exhaust emissions that incorporate default equipment emission factors to represent the DPM emissions. Based on the total emissions that would be generated at the substation site over a period of 12 months (i.e., 494 pounds), it is estimated that an average of approximately 0.02 grams DPM per second would be generated during the construction period. These emissions were then converted to maximum emissions concentrations, which were used to estimate health risks. Risk characterization combines the maximum annual average ground-level DPM concentration from the exposure assessment and the cancer potency factor and the chronic reference exposure level (REL) to estimate the potential inhalation cancer risk from exposure to Project DPM emissions. The lifetime exposure under OEHHA guidelines takes into account early life (infant and children) exposure.

Table 4.3-7 identifies the maximum increase in carcinogenic risk for sensitive receptors in the vicinity of Circle City Substation due to construction activities. The calculated cancer risk assumes sensitive receptors (residential uses) do not have mechanical filtration and exposure would occur with windows open. For carcinogenic exposures, the cancer risk to residences from DPM emissions for construction of the Project is estimated to result in a maximum incremental increase in carcinogenic risk of approximately 12.0 in one million. The maximum cancer risk that would occur at the residential land uses east of the site would exceed the maximum individual cancer risk threshold of 10 in one million. This represents a significant impact relative to exposure of sensitive receptors to substantial pollutant concentrations.

TABLE 4.3-7
MAXIMUM INCREASE IN CARCINOGENIC RISK FOR OFF-SITE SENSITIVE RECEPTORS

Sensitive Receptor	Maximum Cancer Risk (# in one million)	
	Proposed Project	Proposed Project with Mitigation
Residential Uses East of Circle City Substation Site	12.0	7.1
Maximum Individual Cancer Risk Threshold	10	10
Exceeds Threshold?	Yes	No

NOTE: See Appendix D for the Health Risk Assessment (ESA, 2017b)

However, implementation of **Mitigation Measure 4.3-7**, which would require all diesel-powered construction equipment to be equipped with engines that meet Tier 3 emissions standards and/or have diesel particulate filters that would reduce DPM emissions by at least 85 percent, would decrease the maximum incremental carcinogenic risk to 7.1 in one million for residents. The impact to sensitive receptors in the vicinity of Circle City Substation would be mitigated to a less-than-significant level.

> **Mitigation Measure 4.3-7: Use of Tier-3 Engines at the Circle City Substation Site.** SCE (and/or its construction contractor(s)) shall ensure that at all diesel-powered equipment used during construction activities at Circle City Substation meets at least USEPA-certified Tier 3 emissions standards, or is otherwise equipped with Level 3 diesel particulate filters (DPFs). An initial listing that identifies each off-road unit's certified tier specification and/or DPF status to be operated at the Circle City Substation shall be submitted to the CPUC for review and approval prior to commencement of construction activities at the Circle City Substation site. Construction activities at the Circle City Substation site shall not commence until the equipment listing has been approved by the CPUC. As SCE requires new or replacement construction equipment at the Circle City Substation site, SCE shall submit verification of the certified engine tier or Level 3 DPF retrofit prior to use at the site.
>
> **Significance after Mitigation:** Less than Significant.

Impact 4.3-8: Construction activities could expose local sensitive receptors to *Coccidioides immitis* spores. *Less than significant with mitigation* (Class II)

Construction activities that include ground disturbance would have the potential to release *Coccidioides immitis* spores, which can cause Valley Fever. However, it is likely that much of the population of Riverside and San Bernardino Counties has already been exposed to Valley Fever and would continue to be exposed because of the various earthmoving activities that have historically occurred and continue to occur as a result of agricultural and construction activities throughout the region. As a result of the endemic nature of the disease and the number of earthmoving activities in the area (e.g., grading and excavation for agriculture, as well as new residential, commercial, and industrial development, and surface mining operations), there are new cases of Valley Fever documented in these counties each year; however, many people who are exposed do not develop symptoms (CDPH, 2014).

Construction activities associated with the Project would result in similar localized ground disturbing activities to those that occur continually within the counties and the Project would not result in a substantial increase in spore release. In addition, based on analysis by the Centers for Disease Control and Prevention and U.S. Geological Survey of the Valley Fever outbreak associated with the January 1994 Northridge earthquake(USGS and CDCP, 1998), a major ground-disturbing event (e.g., another major earthquake) is required to release a large number of spores over a wide area for a significant outbreak of Valley Fever to occur. Construction of the Project would not be a major ground-disturbing event that could release a large number of spores. Nonetheless, construction activities could expose local sensitive receptors to Coccidioides immitis spores, resulting in a significant impact. Implementation of APM AIR-01 and Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible. Therefore, construction activities that could expose local sensitive receptors to *Coccidioides immitis* spores would result in impacts that would be mitigated to less than significant.

Mitigation: Implement Mitigation Measure 4.3-2a (Fugitive Dust Controls).

Significance after Mitigation: Less than Significant.

Impact 4.3-9: Operation and maintenance activities would generate emissions of Toxic Air Contaminants but would not expose sensitive receptors to harmful pollutant concentrations. *Less than significant* (Class III)

The only source of DPM associated with operation and maintenance would be two passenger-sized truck trips per month. These trips would be conducted for maintenance and inspection. Accordingly, long-term sources of TACs would be minimal. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations, and impacts would be less than significant.

Mitigation: None required.

---

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

Impact 4.3-10: Construction and operation would not create objectionable odors. *Less than significant* (Class III)

Operation and maintenance of the Project would not create odorous emissions. However, Project construction would include sources, such as diesel equipment, which could result in the creation of objectionable odors. Since the construction activities would be temporary and spatially dispersed, and any associated odors would dissipate quickly from the sources, these activities would not affect a substantial number of people. Therefore, impacts from odors generated by construction of the Project would be less than significant.

Mitigation: None required.

4.3.5 Alternatives

4.3.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts that would result under the Project, as discussed in Section 4.3.4, *Impacts and Mitigation Measures*, would not occur. Therefore, no impact to air quality would occur under the No Project Alternative (No Impact).

4.3.5.2 Subtransmission Service Objective Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be constructed and the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed. **Table 4.3-8**, *Alternative B Peak Daily Construction Emissions,* presents the estimated peak daily construction emissions that would be associated with Alternative B. Although emissions would be substantially decreased compared to the proposed Project, emissions of PM_{10} and NO_x would continue to exceed the respective significance thresholds, and would result in the same significant and unavoidable impacts (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6) to regional and local air quality even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I).

Since Alternative B would not result in the construction of a substation, there would be no associated TAC emissions, and the residents at the Corona La Linda Mobile Home Park would not be exposed to an incremental carcinogenic health risk impact (Impact 4.3-7). The health risk associated with construction of the Mira Loma-Jefferson subtransmission line and upgrades at Mira Loma Substation would be less than significant (Class III).

TABLE 4.3-8
ALTERNATIVE B PEAK DAILY CONSTRUCTION EMISSIONS

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Mira Loma Substation	2.87	0.95	9.51	21.95	0.03	1.81
Mira Loma-Jefferson 66 kV Line	185.95	28.74	153.18	290.55	0.43	26.73
Total	**188.82**	**29.69**	**162.69**	**312.5**	**0.46**	**28.54**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	No

SOURCES: SCE, 2015; 2016; and ESA, 2017a. See Appendix D.

In addition, construction of Alternative B would result in less ground disturbing activities compared to the Project, which would cause less of a potential to release a large number of *Coccidioides immitis* spores that could cause Valley Fever, although the impact would still be significant. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). In addition, construction of Alternative B would create less objectionable odors from construction equipment exhaust (Impact 4.3-10; Class III) compared to the Project.

Operation and maintenance of Alternative B would result less emissions of criteria pollutants and TACs compared to the proposed Project. The long-term operation and maintenance impacts (Impacts 4.3-3, 4.3-5, and 4.3-9) associated with this alternative would be less than significant (Class III).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would include a half-mile-long underground conduit installation within Hellman Avenue. Underground subtransmission line conduit and vault construction activities tend to be more labor intensive and generate more air pollutant emissions per given distance than installation of overhead subtransmission line facilities; therefore, construction activities associated with Alternative C1 would generate emissions that would be greater than those that would be generated by the proposed Project. However, it is unlikely that the alternative would result in an increase in maximum day construction emissions compared to the proposed Project as shown in Table 4.3-4, *Project Peak Daily Construction Emissions*, but would instead include an additional approximately 2 weeks of underground line installation work rather than having an additional underground line crew work concurrently with the other crew. Therefore, although construction emissions would be greater overall under this alternative the maximum daily emissions would be the same, and would result in the same significant and unavoidable impacts to regional and local air quality (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6) even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I).

Construction of Alternative C1 would result in more ground disturbing activities compared to the Project, which would cause a higher potential to release a large number of *Coccidioides immitis* spores that could cause Valley Fever and result in a significant impact. Implementation of Mitigation Measures 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). In addition, construction of Alternative C1 would create additional TACs and objectionable odors from construction equipment exhaust (Impacts 4.3-7 and 4.3-10, respectively) compared to the Project; however, the associated impacts would be the same (Classes II and III, respectively).

All other impacts (Impacts 4.3-3, 4.3-5, and 4.3-9) associated with Alternative C1 would be the same as the Project (Class III).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment from the SCE ROW down to River Road would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 mile underground) and would replace approximately 5.4 miles of overhead line that would be associated with the proposed Mira Loma-Jefferson subtransmission line. This alternative would be constructed within a more densely populated area compared to the portion of the proposed subtransmission line it would replace.

As mentioned above, underground subtransmission line conduit and vault construction activities generate more air pollutant emissions per given distance than installation of overhead subtransmission line facilities; however, this alternative would be approximately 1.5 miles shorter than the proposed subtransmission line. It is anticipated that the overall construction activities associated with Alternative C2 would generate emissions that would be similar to those that would be generated by the proposed Project. Therefore, the maximum daily emissions that would be associated with Alternative C2 would be the same as estimated for the proposed Project (see Table 4.3-4, *Project Peak Daily Construction Emissions)*, and would result in the same significant and unavoidable impacts (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6) to regional and local air quality even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I). This alternative would adversely affect more sensitive receptors compared to the proposed subtransmission line because it would be constructed within a more densely populated area.

Construction of Alternative C2 would result in more ground disturbing activities compared to the Project, which would cause a higher potential to release a large number of *Coccidioides immitis* spores that could cause Valley Fever and result in a significant impact. Implementation of Mitigation Measures 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). In addition, construction of Alternative C2 would create additional TACs and objectionable odors from construction equipment exhaust (Impacts 4.3-7 and 4.3-10, respectively) compared to the Project; however, the associated impacts would be the same (Classes II and III, respectively).

All operational impacts (Impacts 4.3-3, 4.3-5, and 4.3-9) associated with Alternative C2 would be the same as the Project (Class III).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Under Alternative C3, up to three subtransmission-level (66 kV) battery storage and substation facilities, associated subtransmission lines, and upgrades to existing Jefferson Substation, would be constructed and operated instead of the Mira Loma-Jefferson 66 kV line component of the Project.

Given the similarities of the infrastructure and site areas that would be required for the subtransmission-level battery storage and substation facilities under Alternative C3 and the proposed Circle City Substation, it is assumed that the peak daily construction emissions associated with each of the individual three subtransmission-level battery storage and substation facilities would be similar to the peak daily emissions that would be generated due to construction of the proposed Circle City Substation, and that up to two of the three facilities would be constructed concurrently. Similarly, it is also likely that construction related to the upgrades at existing Jefferson Substation would result in peak daily construction emissions similar to those that would be associated with the proposed upgrades for Mira Loma Substation under the Project, and that the substation upgrades (e.g., Corona and Chase substations) would occur during the peak daily emissions scenario. In addition, construction of the subtransmission lines that would be required to connect the subtransmission-level battery storage and substation facilities to the existing substations would result in similar peak daily emissions as construction of the proposed substation source lines, and that only one of the subtransmission lines would be constructed at a time during the peak daily emissions scenario.

Table 4.3-9, *Alternative C3 Peak Daily Construction Emissions*, presents the estimated peak daily construction emissions that would be associated with Alternative C3, assuming the proposed Circle City Substation, its Source Lines, and the associated telecommunications facilities would also be constructed. Although PM_{10} and $PM_{2.5}$ emissions would decrease due to the high particulate matter levels that would not be generated associated with the proposed Mira Loma-Jefferson 66 kV line, CO, SO_x, NO_x, and VOC emissions would increase under this alternative compared to the proposed Project. Emissions of PM_{10} and NO_x would continue to exceed the respective significance thresholds, and unlike the proposed Project, emissions of VOC would exceed the significance threshold. Alternative C3 would result in significant and unavoidable impacts to regional air quality (Impacts 4.3-1, 4.3-2, 4.3-4) relative to PM_{10}, NO_x, and VOC even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I).

With the exception of the 40 MW subtransmission-level battery storage and substation site off Leeson Lane near the proposed Circle City Substation site, which is approximately 800 feet from the closest residences, each of the other two subtransmission-level battery storage and substation sites are in the immediate vicinity (i.e., within 50 feet) of sensitive receptors. Given that construction of the subtransmission-level battery storage and substation facilities would generate approximately the same amount of on-site emissions as construction of the proposed Circle City Substation, and the 40 MW facility would be approximately the same distance from the Corona La Linda Mobile Home Park, peak on-site emissions and maximum allowable emissions thresholds for criteria pollutants would be the same as described in Table 4.3-6, Project Peak On-Site Construction Emissions, for Circle City Substation, and the impact would be less than significant (Impact 4.3-6; Class III). With regard to the 50 MW and 42 MW facility sites, the peak on-site emissions would be the same as for Circle City Substation, but due to the proximity

TABLE 4.3-9
ALTERNATIVE C3 PEAK DAILY CONSTRUCTION EMISSIONS

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
50 MW Subtransmission-Level Battery Storage/Substation Facility	24.66	7.85	96.31	139.54	0.24	13.11
42 MW Subtransmission-Level Battery Storage/Substation Facility	24.66	7.85	96.31	139.54	0.24	13.11
Jefferson Substation	2.87	0.95	9.51	21.95	0.03	1.81
Battery Storage 66 kV Subtransmission Lines	49.54	12.17	114.61	229.38	0.33	19.69
Circle City Substation	24.66	7.85	96.31	139.54	0.24	13.11
Source Lines	49.54	12.17	114.61	229.38	0.33	19.69
Telecommunication Facilities	5.67	1.18	9.62	22.23	0.03	1.79
Total	**181.6**	**50.02**	**537.28**	**921.56**	**1.44**	**82.31**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	**Yes**

SOURCE: SCE, 2015; 2016; and ESA, 2017a. See Appendix D.

(within 50 feet) to sensitive receptors, the maximum allowable emissions thresholds for NO_x, CO, PM_{10}, and $PM_{2.5}$ would drop to 270 pounds, 1,700 pounds, 12 pounds, and 8 pounds, respectively (SCAQMD, 2009). Using these thresholds, peak on-site construction emissions associated with the 50 MW and 42 MW facilities would expose sensitive receptors to harmful concentrations of PM_{10}, resulting in significant and unavoidable impacts to local air quality (Impact 4.3-6) even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I).

As mentioned above, the on-site construction emissions of the 40 MW facility would be the same as the proposed Circle City Substation, and would be approximately the same distance from the Corona La Linda Mobile Home Park. Therefore, it is assumed that the maximum incremental increase in carcinogenic risk associated with construction of the 40 MW facility would be the same as for the proposed substation, approximately 12.0 in one million, which represents a significant impact (Impact 4.3-7). In addition, if the 40 MW facility and the Circle City Substation both are approved and constructed adjacent to the each other, the maximum incremental cancer risk at the nearest residences would increase to 24.0 in one million. Implementation of Mitigation Measure 4.3-7, which would require all diesel-powered construction equipment to be equipped with engines that meet Tier 3 emissions standards and/or have diesel particulate filters that would reduce DPM emissions by at least 85 percent, would decrease the maximum incremental carcinogenic risk to 14.2 in one million for residents, requiring additional mitigation in the form of Mitigation Measure 4.3-2b. While implementation of Mitigation Measure 4.3-2b would reduce diesel particulate emissions to the maximum extent feasible, the availability of construction equipment at the time of project construction that meets the highest USEPA-certified tiered emission standards (i.e., Tier 4 standards) is currently unknown. As a result, it cannot be established at this time that implementation of Mitigation Measure 4.3-2b would reduce health risk to below the 10 in one million significance threshold. The impact to sensitive receptors in the

vicinity of the 40 MW subtransmission-level battery storage facility would be significant and unavoidable (Impact 4.3-7; Class I).

The other two subtransmission-level battery storage facilities (for the 50 MW and 42 MW facility sites) and the upgrades at Jefferson Substation would be about 750 feet closer to sensitive receptors compared to the sensitive receptors near the proposed substation site. This would result in a substantially higher maximum incremental construction-related increase in carcinogenic risk than 12 in one million at the closest sensitive receptors, which would represent a significant health risk impact. While implementation of Mitigation Measure 4.3-2b would reduce diesel particulate emissions to the maximum extent feasible, the availability of construction equipment at the time of project construction that meets the highest USEPA-certified tiered emission standards (i.e., Tier 4 standards) is currently unknown. As a result, it cannot be established at this time that implementation of Mitigation Measure 4.3-2b would reduce health risk to below the 10 in one million significance threshold. Therefore, the significant health risk impact associated with construction of the 50 MW and 42 MW facilities under Alternative C3 would be unavoidable even with incorporation of mitigation (Impact 4.3-7; Class I).

Construction along new subtransmission line and telecommunication line alignments would proceed at a linear pace and would not be expected to expose any one receptor along the corridors for longer than 2 to 3 weeks. The total emissions and duration of exposure at any one sensitive receptor location for the subtransmission line or telecommunication line construction would be relatively minor compared to the exposure periods used in health risk assessments. With regard to construction at Jefferson Substation to accommodate the new 66 kV subtransmission line, although the work would occur in the immediate vicinity of residences, it would only be expected to take approximately 2 months to complete and would result in minor TAC exposure at those residences. The construction-related health risk impacts that would be associated with the subtransmission lines and Jefferson Substation would be less than significant (Impact 4.3-7; Class III).

In addition, although the proposed Mira Loma-Jefferson subtransmission line would likely result in a greater amount of disturbed soil over the length of its alignment, construction of Alternative C3 would result in more localized ground disturbing activities associated with the battery storage and substation facilities compared to the proposed subtransmission line, which would cause an increased potential to release a large number of *Coccidioides immitis* spores that could cause Valley Fever and result in a significant impact. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Construction of Alternative C3 would also expose residences to objectionable odors from construction equipment exhaust, resulting in the same less-than-significant impact as the Project (Impact 4.3-10; Class III).

Similar to operation and maintenance of the Project, Alternative C3 would result in insignificant emissions of criteria pollutants and TACs. The long-term operation and maintenance impacts (Impacts 4.3-3, 4.3-5, and 4.3-9) associated with this alternative would be less than significant (Class III).

4.3.5.3 Distribution Service Objective Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Under Alternative D1, a distribution-level (12 kV) battery storage facility would be constructed and operated instead of the Circle City Substation and associated sources lines components of the Project. Given the reduced scope of the infrastructure (e.g., there would be no 66 kV facilities) and site area (i.e., the site would have an area roughly half as the proposed substation site) that would be required for the distribution-level battery storage facility under Alternative D1 compared to the proposed Circle City Substation, it is assumed that the peak daily construction emissions that would be associated with the distribution-level battery storage facility would generate roughly half the peak daily emissions that would be generated due to construction of the proposed Circle City Substation. **Table 4.3-10**, *Alternative D1 Peak Daily Construction Emissions*, presents the estimated peak daily construction emissions that would be associated with Alternative D1, assuming the proposed Mira Loma-Jefferson 66 kV Subtransmission Line and associated upgrades to Mira Loma Substation would also be constructed. Although total emissions would be decreased compared to the proposed Project, emissions of PM_{10} and NO_x would continue to exceed the respective significance thresholds, and would result in the same significant and unavoidable impacts (Impacts 4.3-1, 4.3-2, 4.3-4) to regional and local air quality even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Class I).

TABLE 4.3-10
ALTERNATIVE D1 PEAK DAILY CONSTRUCTION EMISSIONS

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Distribution-Level Battery Storage Facility	12.33	3.93	48.16	69.77	0.12	6.56
Mira Loma Substation	2.87	0.95	9.51	21.95	0.03	1.81
Mira Loma-Jefferson 66 kV Line	185.95	28.74	153.18	290.55	0.43	26.73
Telecommunication Facilities	5.67	1.18	9.62	22.23	0.03	1.79
Total	**206.82**	**34.80**	**220.47**	**404.5**	**0.61**	**36.89**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	~~Yes~~No

SOURCE: SCE, 2015; 2016; and ESA, 2017a. See Appendix D.

As with the proposed substation site, the distribution-level battery storage site is approximately 800 feet from the closest residences. Assuming a 2-acre site 200 meters from residences, the maximum allowable on-site emissions thresholds for NO_x, CO, PM_{10}, and $PM_{2.5}$ are 378 pounds, 5,183 pounds, 81 pounds, and 25 pounds, respectively (SCAQMD, 2009). As shown in Table 4.3-10, emissions associated with construction of the distribution-level battery storage

facility would be well below these values, representing a less-than-significant local air quality impact to sensitive receptors (Impact 4.3-6; Class III). Given that the distribution-level battery storage facility construction emissions would be approximately half of the proposed Circle City Substation, it is estimated that the maximum incremental increase in carcinogenic risk associated with construction of the distribution-level battery storage facility would be roughly half as would occur for the proposed substation, equivalent to approximately 6.0 in one million, which represents a less-than-significant impact (Impact 4.3-7; Class III).

In addition, construction of Alternative D1 would result in less ground disturbing activities compared to the Project, which would cause less of a potential to release a large number of *Coccidioides immitis* spores that could cause Valley Fever. Nonetheless, the impact would be significant. Implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Construction of Alternative D1 would also expose residences to objectionable odors from construction equipment exhaust, resulting in the same less-than-significant impact as the Project (Impact 4.3-10; Class III).

Similar to operation and maintenance of the Project, Alternative D1 would result in insignificant emissions of criteria pollutants and TACs. The long-term operation and maintenance impacts (Impacts 4.3-3, 4.3-5, and 4.3-9) associated with this alternative would be less than significant (Class III).

Alternative D2: 66/12 kV Substation Site Alternative

The Alternative D2 substation site would be located within 200 feet of the Corona La Linda residential neighborhood, which would be approximately 600 feet closer to these residences than the proposed Circle City Substation site. The construction and operation would be the same in scope to that of the proposed Circle City Substation site. Impacts 4.3-1 through 4.3-5, and Impacts 4.3-9 and 4.3-10 would be the same as under the proposed Project (ranging from Class I to Class III). Due to the close proximity to the Corona La Linda neighborhood, the localized construction emissions concentrations associated with Alternative D2 would be greater than the proposed Project. **Table 4.3-11** compares peak on-site emissions that would be associated with construction of the substation under Alternative D2 to the maximum allowable emissions from the SCAQMD's look-up tables for a 5-acre site 50 meters from residences (SCAQMD, 2009). As shown in the table, on-site emissions would not exceed the more stringent maximum allowable emissions thresholds and the associated impact would be the same as for the proposed Project (Impact 4.3-6; Class III for the substation, Class I overall).

TABLE 4.3-11
ALTERNATIVE D2 PEAK ON-SITE CONSTRUCTION EMISSIONS

Project Component	Peak On-Site Construction Emissions (pounds/day)			
	PM_{10}	$PM_{2.5}$	CO	NO_x
Alternative D2 Circle City Substation	19.9	5.9	66.7	130.7
Threshold	37	11	2,470	302
Threshold Exceeded?	No	No	No	No

As mentioned above, the construction site would be much closer to sensitive receptors compared to the proposed substation site. This would result in a substantially higher maximum incremental construction-related increase in carcinogenic risk than 12 in one million at the closest sensitive receptors, which would represent a significant health risk impact. While implementation of Mitigation Measure 4.3-2b would reduce diesel particulate matter emissions to the maximum extent feasible, the availability of construction equipment at the time of project construction that meets the highest USEPA-certified tiered emission standards (i.e., Tier 4) is currently unknown. As a result, it cannot be established at this time that implementation of Mitigation Measure 4.3-2b would reduce health risk to below the 10 in one million significance threshold. Therefore, the significant health risk impact associated with Alternative D2 would be unavoidable even with incorporation of mitigation (Impact 4.3-7; Class I).

In addition, construction of Alternative D2 would result in ground disturbing activities closer to residences compared to the Project, which would cause more of a potential for released *Coccidioides immitis* spores to cause Valley Fever and result in a significant impact. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Source Lines segment that it would replace.

Underground subtransmission line conduit and vault construction activities generate more air pollutant emissions than installation of overhead subtransmission line facilities per a given distance because underground installation requires more ground disturbance-related activities that generate more exhaust and dust emissions. Therefore, construction activities associated with Alternative E1 would generate emissions that would be greater than those that would be generated by the proposed Project. However, it is unlikely that the alternative would result in an increase in maximum day construction emissions compared to the proposed Project as shown in Table 4.3-4, *Project Peak Daily Construction Emissions*, but would instead include an additional week of underground line installation work rather than having an additional underground line crew work concurrently with the other crew. Therefore, although construction emissions would be greater overall under this alternative, the maximum daily emissions of criteria pollutants would be the same, and would result in the same significant and unavoidable impacts to regional air quality and to sensitive receptors even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6; Class I).

Alternative E1 would result in a higher potential for release of *Coccidioides immitis* spores that could cause Valley Fever due to the increased ground disturbance associated with underground line installation and the associated impact would be significant. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Odor impacts during construction and operation would be the same as the proposed Project, less than significant

(Impact 4.3-10; Class III). The underground source line work under Alternative E1 would result in increased concentrations of diesel particulate matter compared to overhead line work; however, its duration of exposure would be less than 2 months at any one location resulting in the same less-than-significant health risk impact for underground line work as the Project (Impact 4.3-7; Class III related to underground line work; Class II overall).

As with the proposed Project, operation and maintenance of Alternative E1 would result in insignificant emissions of criteria pollutants related to annual inspections. The long-term operation and maintenance impacts associated with this alternative would be less than significant (Impacts 4.3-3, 4.3-5, and 4.3-9; Class III).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines; however, it includes an underground line segment from just west of I-15 to the proposed Circle City Substation site. This alternative would include approximately 1.5 miles of additional underground line compared to the proposed Pedley Source Lines.

As mentioned above, underground subtransmission line conduit and vault construction activities generate more air pollutant emissions per a given distance than installation of overhead subtransmission line facilities; therefore, construction activities associated with Alternative E2 would generate emissions that would be greater than those that would be generated by the proposed Project. However, it is unlikely that the alternative would result in an increase in maximum day construction emissions compared to the proposed Project as shown in Table 4.3-4, *Project Peak Daily Construction Emissions*, but would instead include an additional approximately 4 to 7 weeks of underground line installation work rather than having an additional underground line crew work concurrently with the other crew. Therefore, although construction emissions of criteria pollutants would be greater overall under this alternative, the maximum daily emissions would be the same, and would result in the same significant and unavoidable impacts to regional air quality and to sensitive receptors even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6; Class I).

Alternative E2 would result in a higher potential for release of *Coccidioides immitis* spores that could cause Valley Fever due to the increased ground disturbance associated with underground line installation, and the associated impact would be significant. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Odor impacts during construction and operation would be the same as the proposed Project, less than significant (Impact 4.3-10; Class III). The underground source line work under Alternative E2 would result in increased concentrations of diesel particulate matter compared to overhead line work; however, its duration of exposure would be less than 2 months at any one location resulting in the same less-than-significant health risk impact for underground line work as the Project (Impact 4.3-7; Class III related to underground line work; Class II overall).

As with the proposed Project, operation and maintenance of Alternative E2 would result in insignificant emissions of criteria pollutants related to annual vault inspections. The long-term operation and maintenance impacts associated with this alternative would be less than significant (Impacts 4.3-3, 4.3-5, and 4.3-9; Class III).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would include 1.3 miles of overhead lines in a double circuit configuration, which would be 0.1 mile longer than the proposed Databank Source Lines. However, unlike the proposed Databank Source Lines, which would include nearly 0.5 mile of underground subtransmission line installation, this alternative would include no underground line installation activities. Similar to the proposed Databank Source Lines, where the southwest end of the lines would be installed immediately adjacent to residences, Alternative E3 would be constructed immediately adjacent to several residences along Bel Air Street and Laurel Canyon Way.

Because underground subtransmission line conduit and vault construction activities generate more air pollutant emissions per a given distance than installation of overhead subtransmission line facilities due to the substantial increase of ground disturbance required for underground installation, construction activities associated with the Alternative E3 overhead line would generate less emissions than would be generated by the proposed Project. However, it is likely that the alternative would result in the same maximum day construction emissions compared to the proposed Project as shown in Table 4.3-4, *Project Peak Daily Construction Emissions*, but would instead include approximately 3 fewer weeks of underground line installation work rather than using less equipment on a daily basis, but having the same construction duration as the Project. Therefore, although construction emissions would be reduced overall under this alternative, the maximum daily emissions would be the same, and would result in the same significant and unavoidable impacts to regional air quality and to sensitive receptors even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6; Class I).

Alternative E3 would result in a lower potential for release of *Coccidioides immitis* spores that could cause Valley Fever due to the decreased ground disturbance associated with underground line installation. Nonetheless, the associated impact would be significant. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Odor impacts during construction and operation would be the same as the proposed Project, less than significant (Impact 4.3-10; Class III). The overhead line work under Alternative E3 would result in decreased concentrations of diesel particulate matter compared to underground line work that would be associated with the Databank Source Lines and the duration of exposure would be less than 2 months at any one location resulting in the same less-than-significant health risk impact for overhead line work as the Project (Impact 4.3-7; Class III related to underground line work; Class II overall).

As with the proposed Project, operation and maintenance of Alternative E3 would result in insignificant emissions of criteria pollutants related to annual vault inspections. The long-term

operation and maintenance impacts associated with this alternative would be less than significant (Impacts 4.3-3, 4.3-5, and 4.3-9; Class III).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would result in only the proposed Databank Source Lines and the Circle City Substation to Corona Substation telecommunications line being connected to Circle City Substation and the Pedley Source Lines would not be constructed. Construction activities associated with the Alternative E4 would generate less emissions than would be generated by the proposed Project. However, it is likely that the alternative would result in the same maximum day construction emissions compared to the proposed Project as shown in Table 4.3-4, *Project Peak Daily Construction Emissions*, but would include fewer months of source line construction installation work. Therefore, although construction emissions would be reduced overall under this alternative, the maximum daily emissions would be the same, and would result in the same significant and unavoidable impacts to regional air quality and to sensitive receptors even with implementation of Mitigation Measures 4.3-2a and 4.3-2b (Impacts 4.3-1, 4.3-2, 4.3-4, and 4.3-6; Class I).

Alternative E4 would result in a lower potential for release of *Coccidioides immitis* spores that could cause Valley Fever due to the decreased ground disturbance. Nonetheless, the associated impact would be significant. However, implementation of Mitigation Measure 4.3-2a would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be controlled to the maximum extent feasible, and the associated impact (Impact 4.3-8) would be mitigated to less than significant (Class II). Odor impacts during construction and operation would be the same as the proposed Project, less than significant (Impact 4.3-10; Class III). Sensitive receptors along the Pedley Source Lines alignment would not be exposed to diesel particulate matter under Alternative E4, and the duration of exposure associated with construction of the Databank Source Lines would be less than 2 months at any one location resulting in the same less-than-significant health risk impact as the Project (Impact 4.3-7; Class III related to source line work; Class II overall).

As with the proposed Project, operation and maintenance of Alternative E4 would result in insignificant emissions of criteria pollutants related to facility inspections. The long-term operation and maintenance impacts associated with this alternative would be less than significant (Impacts 4.3-3, 4.3-5, and 4.3-9; Class III).

References – Air Quality

California Air Resources Board (CARB), 2010. Estimate of Premature Deaths Associated with

Fine Particle Pollution (PM2.5) in California Using a U.S. Environmental Protection Agency Methodology, August 31, 2010. Available online at: http://www.arb.ca.gov/research/health/pm-mort/pm-report_2010.pdf. Accessed on May, 10, 2016.

CARB, 2011. Toxic Air Contaminant Identification List, July, 2011. Available online at: https://www.arb.ca.gov/toxics/id/taclist.htm. Accessed on September 30, 2016.

CARB, 2016. Federal Standard Area Designations, September, 2016. Available online at:

https://www.arb.ca.gov/desig/feddesig.htm. Accessed on September 30, 2016.

CARB, 2017. iADAM: Air Quality Data Statistics. Available online at: http://www.arb.ca.gov/adam/. Accessed on July 25, 2017.

California Department of Public Health (CDPH), 2014. Epidemiologic Summary of Coccidioidomycosis in California, 2009-2012. Available online at: http://www.cdph.ca.gov/programs/sss/Documents/CocciEpiSummary09-12.pdf. Accessed on June 17, 2016.

City of Ontario, 2008. City of Ontario Plan Policy. Available online at: http://www.ontarioplan.org/policy-plan/environmental-resources-element/er4-air-quality/. Accessed March 1, 2017.

City of Eastvale, 2012. *City of Eastvale General Plan*, adopted June 13, 2012. Available online at: http://www.eastvaleca.gov/city-hall/planning/general-plan. Accessed March 1, 2017.

City of Corona, 2004. City of Corona General Plan adopted March 17, 2004. Available online at: http://www.discovercorona.com/City-Departments/Community-Development/Planning-Division/FINAL-GP.aspx. Accessed March 1, 2017.

County of Riverside, 2015. County of Riverside General Plan, December 15, 2015. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on March 1, 2017.

Environmental Science Associates (ESA), 2017a. Supplement to SCE construction emissions data (see Draft EIR Appendix D).

ESA, 2017b. Circle City Substation – Construction Period Health Risk Assessment (HRA), June 13, 2017 (see Draft EIR Appendix D).

Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, adopted February, 2015. Available online at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed on June 21, 2016.

South Coast Air Quality Management District (SCAQMD), 2007. Fugitive Dust, 2007. Available online at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust. Accessed on September 30, 2016.

SCAQMD, 2009. LST Look-Up Tables, 2006 – 2008 Thresholds for Criteria Pollutants, Revised October 21, 2009.

SCAQMD, 2012. Final 2012 Air Quality Management Plan, December 2012.

SCAQMD, 2015. Air Quality Significance Thresholds, March 2015. Available online at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed on June 1, 2016.

SCAQMD, 2016. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin, February, 2016.

Available online at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=2. Accessed on May 16, 2016.

SCAQMD, 2017. Final 2016 Air Quality Management Plan, March, 2017. Available online at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan. Accessed on July 25, 2017.

SCAQMD, 2018. Personal communication by telephone between Matt Fagundes of ESA, and Mike Krause of the South Coast Air Quality Management District, March 20, 2018.

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment, December 2015.

SCE, 2016. Response to CPUC Data Request 6, Question 7, electronic file attachments. Provided to CPUC September 27, 2016.

U.S. Geological Survey (USGS) and Centers for Disease Control and Prevention, 1998, An Outbreak of Coccidioidomycosis (Valley Fever) Cased by Landslides Triggered by the 1994 Northridge, California Earthquake, in A Paradox of Power: Voices of Warning and Reason in the Geosciences: Geological Society of America, Reviews in Engineering Geology; Welby, C.W., and Gowan, M.E., editors. 1998.

Weatherbase, 2016. Corona, California Weather. Available online at: http://www.weatherbase.com/weather/weather.php3?s=130240&cityname=Corona-California-United-States-of-America. Accessed on May 10, 2016.

This page intentionally left blank

4.4 Biological Resources

This section evaluates whether construction, operation, and maintenance of the Project or alternatives would result in adverse impacts on biological resources. When Project impacts are determined to be significant, mitigation measures to avoid or reduce those impacts are identified.

4.4.1 Setting

This section describes the existing environment for wildlife, botanical, and wetland resources in the vicinity of the Project and alternative sites and alignments, including marshalling areas, access roads, and ancillary facilities (the Project area), as well as the larger area, including adjacent habitat, that could reasonably be affected by Project activities (the study area). The Project area is shown in Figure 2-2, *Project Location*.

The setting information presented herein was compiled from available scientific literature and database searches, and focused species surveys. Sources used to analyze the distribution of biological resources and assess impacts of the Project are cited below and include the following:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW, 2016);
- The California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2016);
- The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) Trust Resources Report (USFWS, 2016);
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (RCA, 2010);
- Proponent's Environmental Assessment (PEA) (Southern California Edison [SCE], 2015) and the following documents that were appended to the PEA:
  - *From Attachment 4.4-A, Vegetation Communities Map*
  - *From Attachment 4.4-B, Habitat Assessment*
  - *From Attachment 4.4-C, Biological Technical Report*
  - *From Attachment 4.4-D, Additional Focused Species Survey Reports*
  - *From Attachment 4.4-E and 4.4-F, Jurisdictional Delineation Report*
  - *From Attachment 4.4-G, Special-Status Plant Species;*
- Focused biological surveys and habitat assessment surveys:
  - Rare plants (BonTerra, 2010a; 2011a; 2012a; Chambers Group Inc., 2013)
  - Delhi sands flower-loving fly (BonTerra, 2010b; 2011b; Dicus Biological, 2012; 2014a; 2014b; Environmental Intelligence, LLC, 2015)
  - Western burrowing owl (BonTerra, 2010c; 2011e; 2012 c)

  - Least Bell's vireo (BonTerra, 2010d; Environmental Intelligence, LLC, 2016), southwestern willow flycatcher (BonTerra, 2011f; 2012d; Environmental Intelligence, LLC, 2016), and western yellow-billed cuckoo (Environmental Intelligence, LLC, 2016)
  - Vernal pool branchiopods (BonTerra 2011c; 2011d; 2012b; Busby Biological Services, Inc., 2015)
  - Bat species (BonTerra, 2011g)
  - Stephens' kangaroo rat, San Bernardino kangaroo rat, and Los Angeles pocket mouse (SMJ Biological Consultants, 2010; 2012); and
- A field reconnaissance survey of the Project was performed by an Environmental Science Associates (ESA) senior wildlife biologist on February 2, 2016, to evaluate project impacts and verify existing conditions

4.4.1.1 Regional Setting

The Project and alternatives would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario (see Figure 2-2, *Project Location*). It is within the Guasti, Corona North, and Corona South USGS 7.5 minute topographic quadrangles between the San Gabriel Mountains and Santa Ana Mountains. Topography in the Project vicinity is generally flat, with an approximate range in elevation from 520 to 890 feet above mean sea level. Land uses in the immediate Project vicinity are primarily agricultural (i.e., croplands and dairies) to the north, and residential, commercial, and industrial to the south. The Prado Flood Control Basin, near the center of the Project area, is created by the Prado Dam and is located at the confluence of the Santa Ana River, Mill Creek, Chino Creek, and Temescal Creek.

The region experiences a Mediterranean climate characterized by mild, rainy winters and hot, dry summers. The temperature is moderated by the coastal influence of the Pacific Ocean, which creates mild conditions throughout most of the year. The most distinguishing characteristic of a Mediterranean climate is its seasonal precipitation. In Southern California, precipitation is characterized by brief, intense storms between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms over a short span of time. Rainfall patterns are subject to extreme variations from year to year and longer-term wet and dry cycles. The average annual rainfall for the area is approximately 13 inches (SCE, 2015).

4.4.1.2 Natural Communities and Wildlife Habitat

Vegetation Community Descriptions

Vegetation communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. To characterize plant communities, 300-foot buffers along each side of the alignments were established as a study area; the study area also included staging and laydown areas and access roads. Vegetation series within the study area were then mapped and generally follow descriptions in the Western Riverside County MSHCP, which closely approximates *A Manual of California Vegetation* Online (CNPS, 2015) classification system. Acreages for each community type are also provided. These

vegetation communities also share a relationship with wildlife habitat types, which were generally classified and evaluated using CDFW's *Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988).

The following 16 vegetation communities occur in the study area:

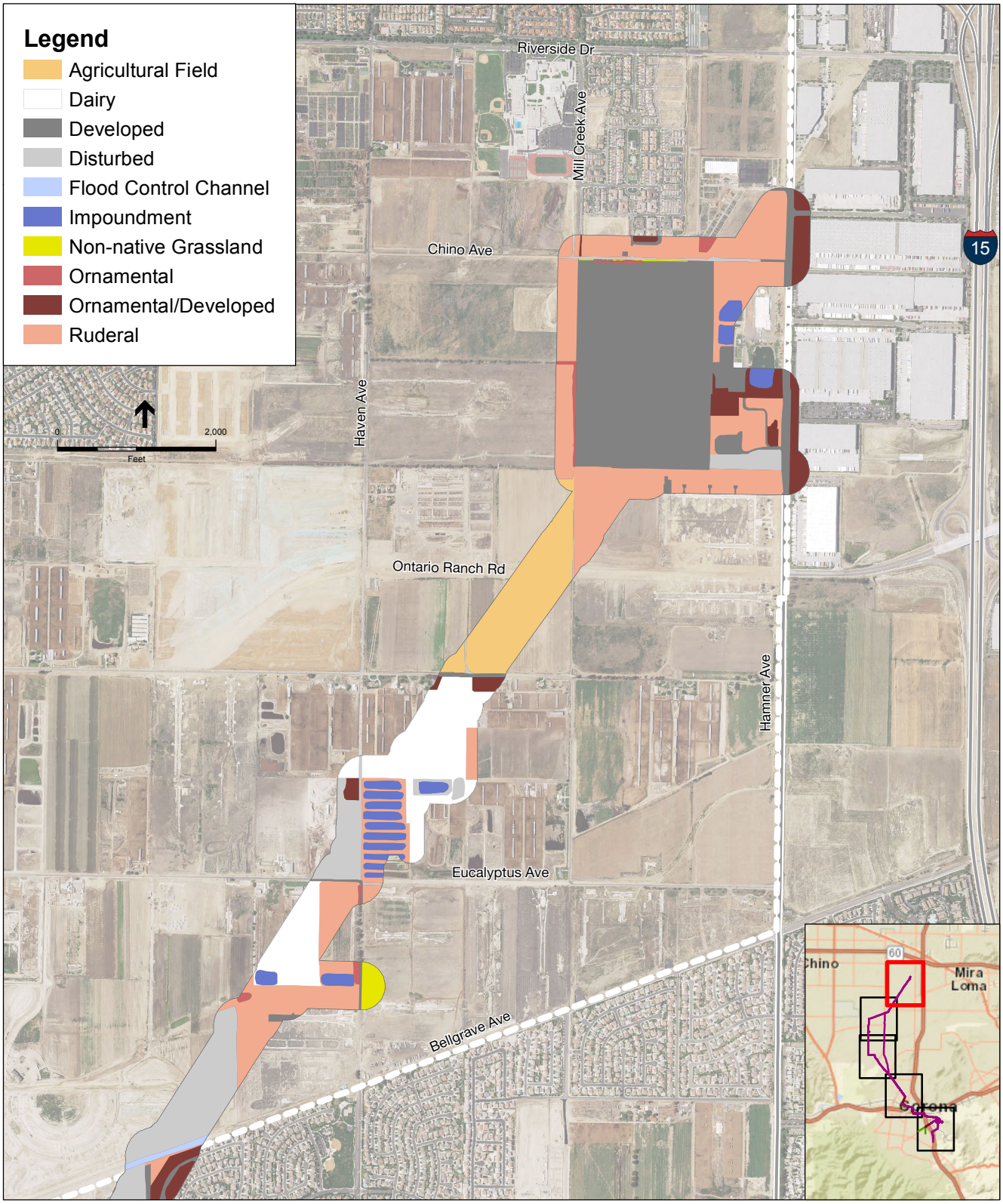
- agricultural field;
- dairy;
- developed;
- disturbed;
- disturbed mule fat scrub;
- disturbed Riversidean sage scrub;
- non-native grassland;
- ornamental;
- ornamental/developed;
- Riversidean sage scrub;
- ruderal;
- willow riparian forest;
- freshwater marsh;
- impoundment;
- flood control channel; and
- open water.

The vegetation communities present within the study area are depicted in **Figures 4.4-1** through **Figure 4.4-5** and are quantified by area in **Table 4.4-1***, Vegetation Communities in the Study Area*. These vegetation communities are described in greater detail below based on descriptions from the PEA (SCE, 2015) and verified by reconnaissance visits in 2016.

TABLE 4.4-1
VEGETATION COMMUNITIES IN THE STUDY AREA

Vegetation Communities	Approximate Area (acres)
Agricultural Field	40.76
Dairy	68.67
Developed	410.25
Disturbed	171.37
Disturbed Mule Fat Scrub	5.30
Disturbed Riversidean Sage Scrub	6.77
Non-native Grassland	66.31
Ornamental	25.26
Ornamental/Developed	796.47
Riversidean Sage Scrub	0.63
Ruderal	322.43
Willow Riparian Forest	75.82
Freshwater Marsh	0.21
Impoundment	21.88
Flood Control Channel	21.39
Open Water	10.56
Total	**2,044.08**

SOURCE: SCE, 2015

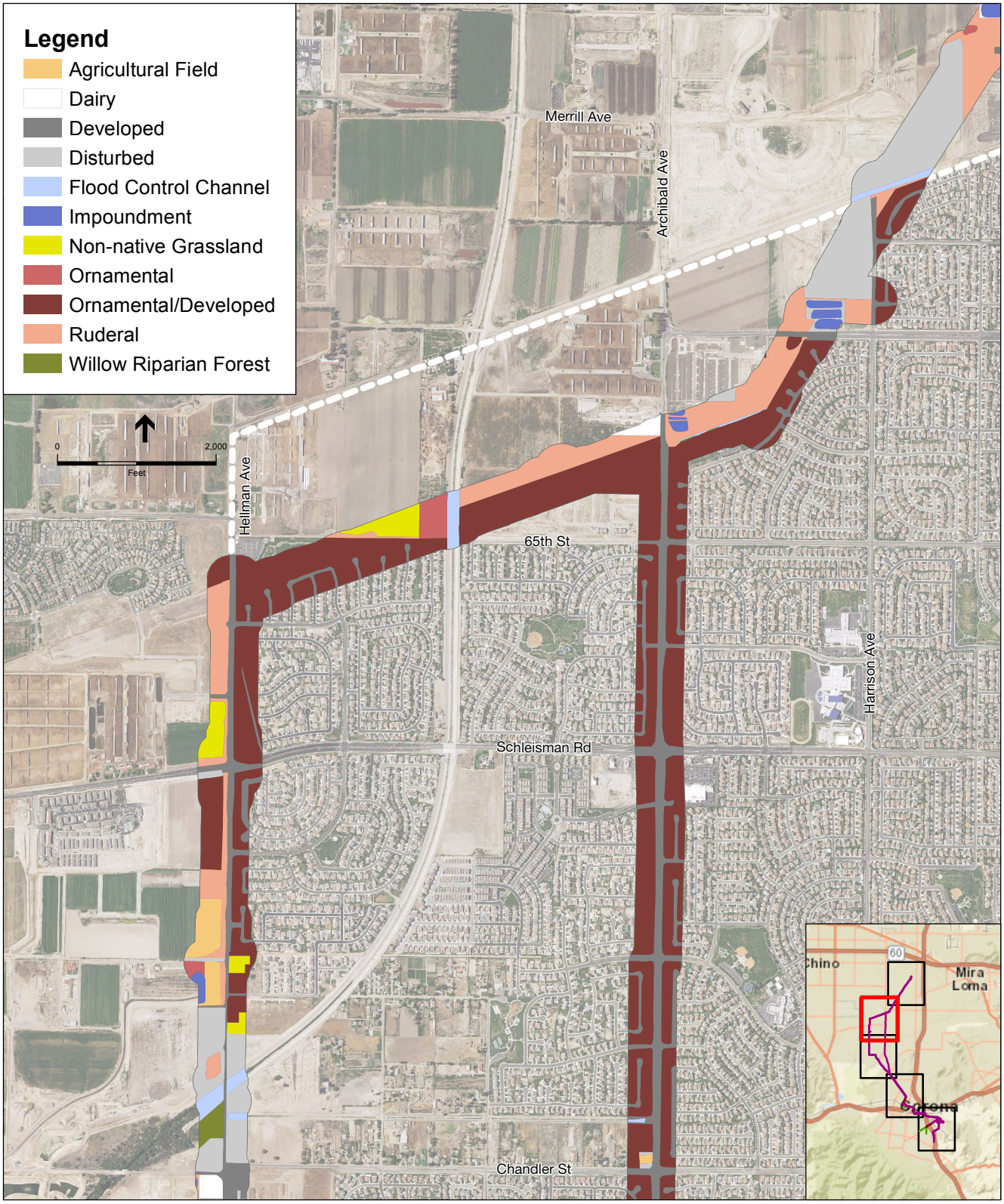


SOURCE: BonTerra, 2012;

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.4-1

Vegetation Communities in the Project Area

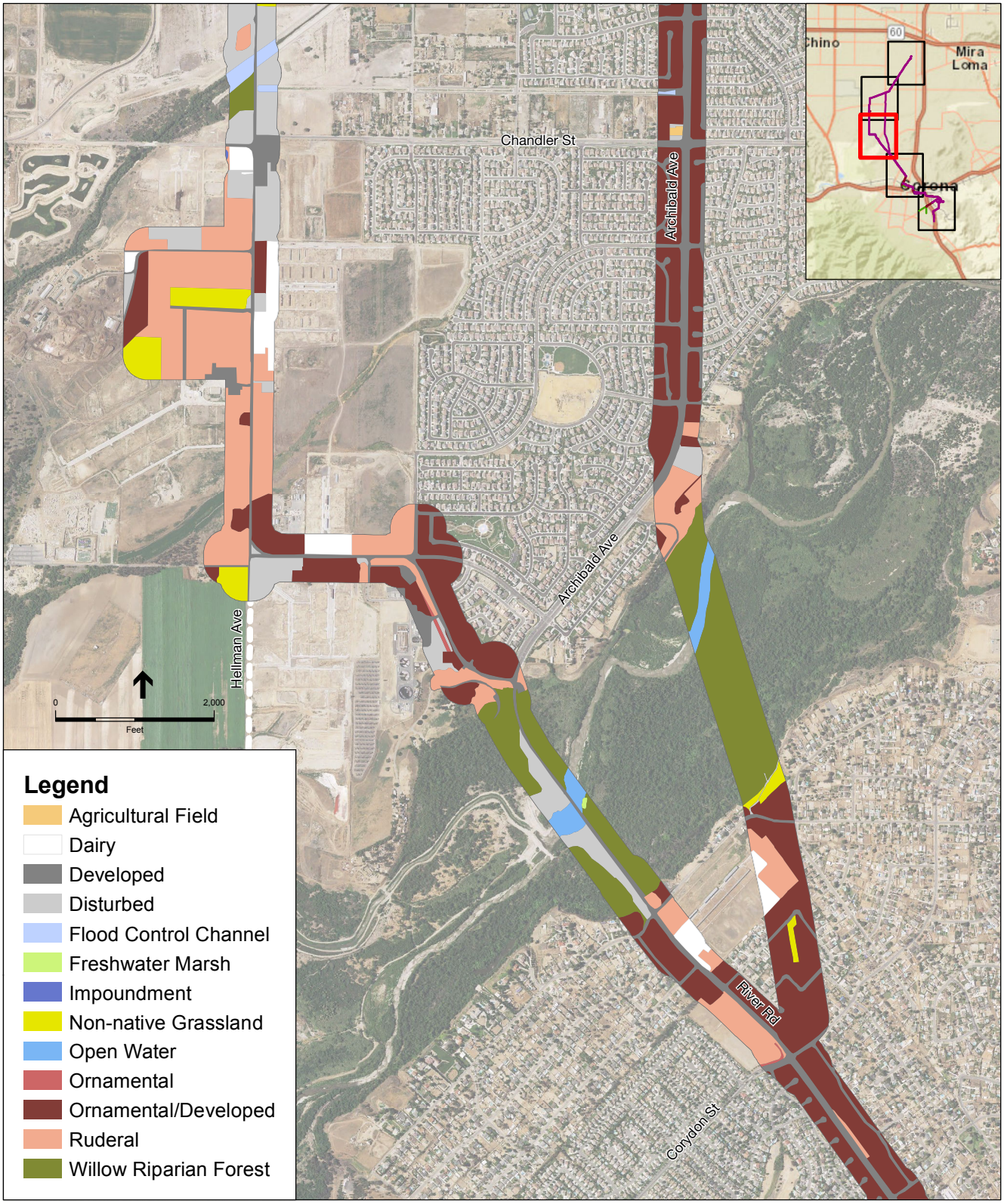


SOURCE: BonTerra, 2012;

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.4-2

Vegetation Communities in the Project Area

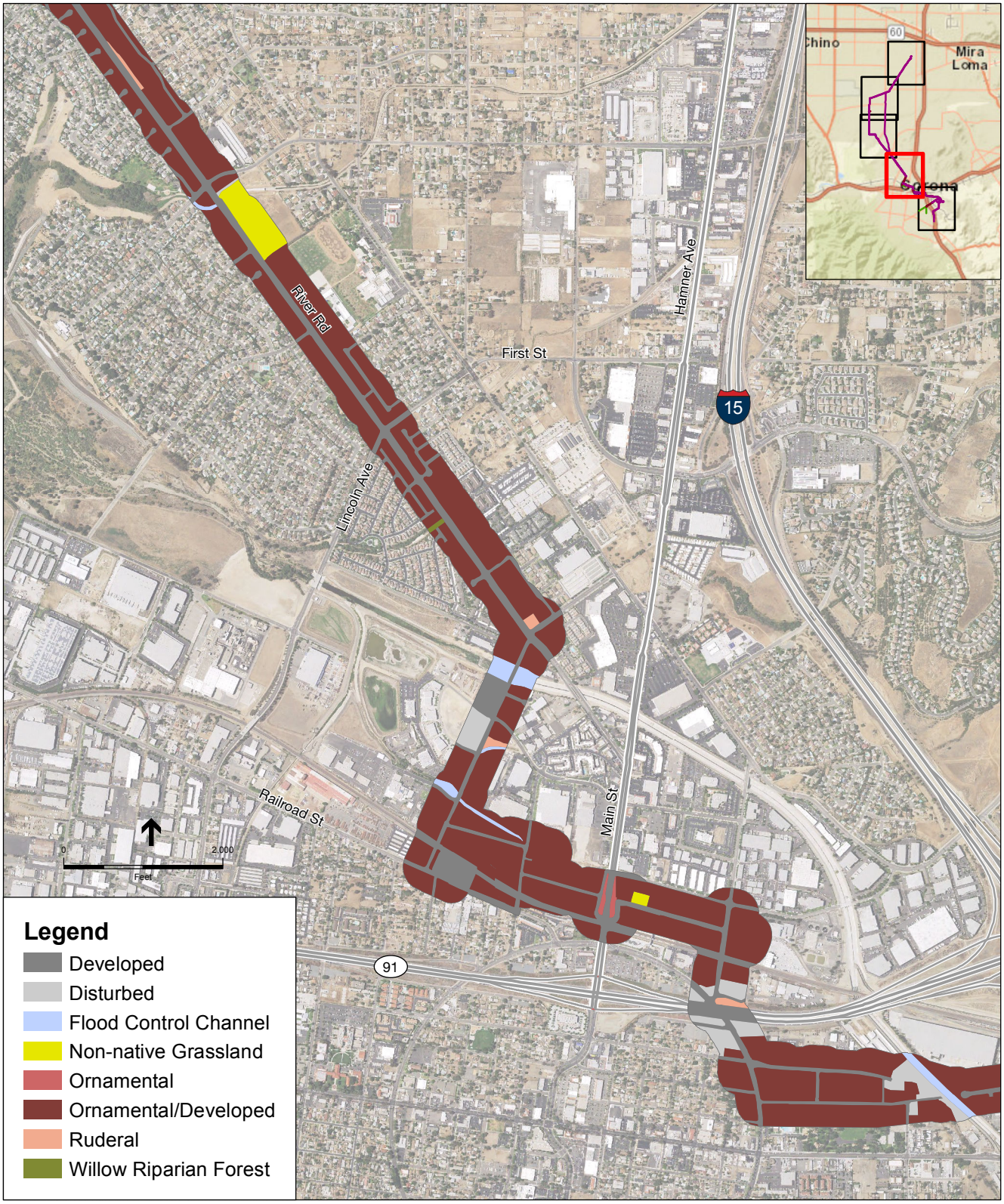


SOURCE: BonTerra, 2012;

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.4-3

Vegetation Communities in the Project Area

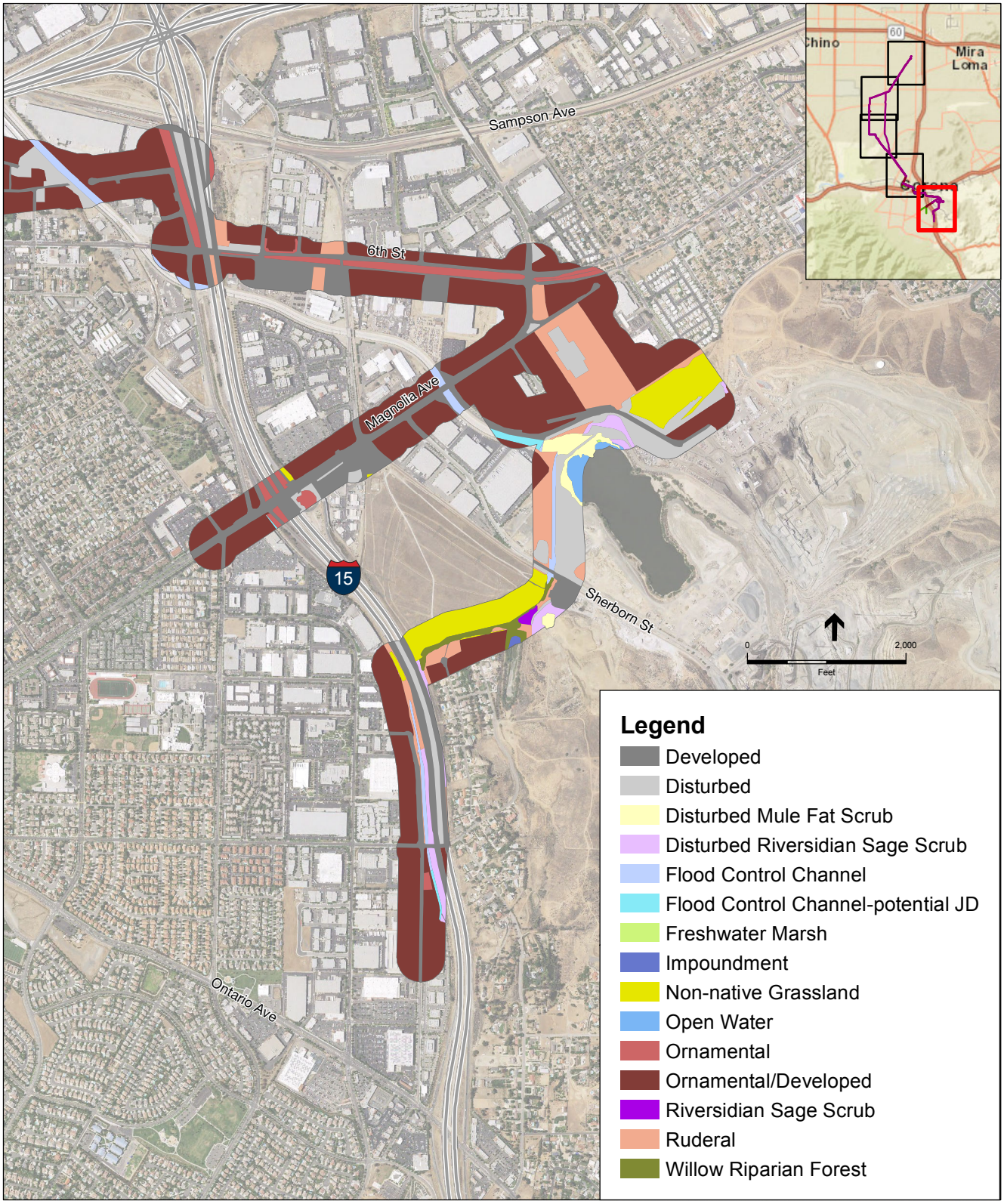


SOURCE: BonTerra, 2012;

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.4-4

Vegetation Communities in the Project Area



SOURCE: BonTerra, 2012;

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.4-5

Vegetation Communities in the Project Area

Agricultural Field

Agricultural fields include active row crops and tilled land. Ruderal species (e.g., shortpod mustard [*Hirschfeldia incana*], wild oats [*Avena* sp.], and cheeseweed [*Malva parviflora*]), or unvegetated areas may be present along the margins of the fields; however, these areas were generally too small to be mapped separately. Agricultural fields occur at the northern end of the study area along the proposed Mira Loma-Jefferson 66 kV Subtransmission Line alignment.

Dairy

Dairies are primarily unvegetated fields with associated structures (e.g., cattle pens). Domestic cattle (*Bos taurus*) are present in these areas. Dairies occur at the northern end of the study area along the proposed Mira Loma-Jefferson subtransmission line alignment.

Developed

Developed areas consist of paved roads and utility structures that do not contain landscaped areas. No vegetation was present in these areas. Developed areas that contained vegetation adjacent to structures were mapped as "Ornamental/Developed." Developed areas occur throughout the study area.

Disturbed

Disturbed areas consist of bare ground and contain little to no vegetation. They have been heavily disturbed by activities such as grading. Disturbed areas are located throughout the study area.

Disturbed Mule Fat Scrub

Disturbed mule fat scrub is dominated by scattered mule fat (*Baccharis salicifolia*) with other species present, including water cress (*Nasturtium officinale* [*Rorippa nasturtium-aquaticum*]), broad-leaved peppergrass (*Lepidium latifolium*), and Spanish sunflower (*Pulicaria paludosa*). This vegetation type occurs along the alternative source line alignments around the quarry lake and southwest of Sherborn Street.

Disturbed Riversidean Sage Scrub

Disturbed Riversidean sage scrub within the study area is dominated by a very sparse cover of California buckwheat (*Eriogonum fasciculatum*) and/or brittlebush (*Encelia farinosa*), and is intermixed with non-native vegetation, including tree tobacco (*Nicotiana glauca*). Disturbed Riversidean sage scrub occurs near the southern end of the source line routes adjacent to I-15 and around the quarry lake. A portion of this vegetation community that is adjacent to I-15 has been seeded with groundcover species. An additional area of disturbed Riversidean sage scrub occurs near the Substation Site Alternative.

Non-Native Grassland

Non-native grassland within the study area is dominated by a variety of non-native species, including ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *Rubens*), wild oats, foxtail fescue (*Festuca* [*Vulpia*] *myuros*), rancher's fiddleneck (*Amsinckia menziesii*), common horseweed (*Erigeron canadensis* [*Conyza canadensis*]), and foxtail barley (*Hordeum*

murinum). The proportion of each species varies by patch. Ruderal species, such as shortpod mustard and cheeseweed, are present in lesser densities. This vegetation type is scattered throughout the study area.

Ornamental

Ornamental vegetation includes landscaping (e.g., crape myrtle [*Lagerstroemia indica*], day lily [*Hemerocallis fulva*], and turf grass) in the center median or roads, nurseries, and landscaped parks, and gum tree (*Eucalyptus* sp.) windrows adjacent to roads. Ornamental vegetation is scattered throughout the study area.

Ornamental/Developed

Ornamental/developed areas include residential and commercial development and associated ornamental landscaping. A large variety of ornamental species occurs in these areas, including, but not limited to, the following:

- Peruvian pepper tree (*Schinus molle*);
- Brazilian pepper tree (*Schinus terebinthifolius*);
- sweet gum (*Liquidambar styraciflua*);
- flowering plum (*Prunus* sp.);
- gum tree;
- fan palm (*Washingtonia robusta*);
- date palm (*Phoenix* sp.);
- day lily;
- India hawthorn (*Raphiolepis indica*);
- roses (*Rosa* spp.);
- African fountain grass (*Pennisetum setaceum*); and
- turf grass.

Ornamental/developed areas occur throughout the study area.

Riversidean Sage Scrub

Riversidean sage scrub is dominated by California buckwheat and California sagebrush (*Artemisia californica*). This vegetation type occurs near the Alternative E3 alignment on a slope above the banks of an engineered drainage.

Ruderal

Ruderal (i.e., weedy) communities are assemblages of plants that thrive in waste areas, roadsides, and other sites that have been disturbed by human activity. Ruderal vegetation within the study area is dominated by a mixture of primarily non-native herbs and grasses. Dominant species, which vary by patch, include shortpod mustard, rancher's fiddleneck, western sunflower (*Helianthus annuus*), cheeseweed, ripgut grass, and wild oats. Other species present in lesser densities include Russian thistle (*Salsola tragus*), white nightshade (*Solanum americanum*),

London rocket (*Sisymbrium irio*), and foxtail barley. This vegetation type is scattered throughout the study area and sometimes intergrades with non-native grassland.

Willow Riparian Forest

Willow riparian forest is dominated by large trees, primarily Goodding's black willow (*Salix gooddingii*) and red willow (*Salix laevigata*). The understory is dominated by mule fat in some areas, and a mixture of mule fat, tree tobacco, and giant reed (*Arundo donax*) in other areas. Other large trees present in this vegetation community include the following:

- gum tree;
- narrow-leaved willow (*Salix exigua*);
- western sycamore (*Platanus racemosa*);
- coast live oak (*Quercus agrifolia*);
- Fremont cottonwood (*Populus fremontii*);
- blue elderberry (*Sambucus nigra* ssp. *caerulea* [*Sambucus mexicana*]); and
- tree of heaven (*Ailanthus altissima*).

In areas where open water was encountered under the riparian tree canopy, the vegetation community was mapped as willow riparian forest. This vegetation type occurs along the proposed Mira Loma-Jefferson subtransmission line alignment within the Prado Flood Control Basin and other drainages. Willow riparian forest also occurs within a drainage along the Alternative E3 alignment.

Freshwater Marsh

Freshwater marsh in the study area is dominated by cattails (*Typha* sp.). Two patches of freshwater marsh occur within the study area—one along the proposed Mira Loma-Jefferson subtransmission line route~~s~~ in the Prado Flood Control Basin and one along the Alternative E3 ~~alternative source line~~ corridor~~s~~ around the quarry lake.

Impoundment

Impoundments are man-made reservoirs used to store water. Although the surface of these features can be bare ground, ruderal vegetation, or open water, impoundments are mapped separately because their composition fluctuates throughout the year and from year to year. Impoundments have been primarily constructed in the northern portion of the study area and are associated with active or abandoned agricultural fields or dairies. An impoundment was also identified at the southern end of the study area south of the proposed Circle City Substation.

Flood Control Channel

Flood control channels occur along all of the corridors in the study area. These channels are concrete-lined or have earthen bottoms. They may contain open water and small amounts of vegetation.

Open Water

The Santa Ana River and the quarry lake, which is adjacent to Alternative E3, have been mapped as open water. These open water areas occur where emergent vegetation or a tree canopy are absent.

Special Status Natural Communities

Through the CNDDB, CDFW provides an inventory of vegetation communities that are considered special-status by state and federal resource agencies, academic institutions, and various conservation groups. Determination of the sensitivity level of the vegetation communities is based on the Nature Conservancy Heritage Program Status Ranks, which ranks vegetation communities on a global and statewide basis according to the number and size of remaining occurrences and recognized threats. State-recognized special-status vegetation communities that occur in the study area include coastal sage scrub and willow riparian forest.

Riversidean sage scrub and disturbed Riversidean sage scrub, which both occur in the study area, are recognized as sensitive upland communities by CDFW and the Western Riverside MSHCP. Coastal sage scrub, of which Riversidean sage scrub is a xeric (i.e., dry) sub-association, has declined by 70 to 90 percent in its historic range in California (Noss and Peters, 1995). The distribution of Riversidean sage scrub and disturbed Riversidean sage scrub within the study area is depicted on Figure 4.4-5.

The CDFW considers willow riparian forest to be vulnerable and at moderate risk of elimination. Most natural riparian vegetation in Southern California has been lost or degraded by land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; water impoundments; and various other changes. Willow riparian forest that is present within the study area is associated with Santa Ana River corridor and a tributary to Mill Creek shown in Figures 4.4-2 through 4.4-5.

Wildlife Movement and Corridors

The agricultural portions of the study area are generally of low biological value due to the limited amounts of suitable habitat for wildlife species and their proximity to existing indirect effects of urban development (e.g., night lighting, noise, and general human activity). Therefore, wildlife species are not expected to use the northern portion of the study area for regional wildlife movement. The developed land uses in the southern portion of the study area limit wildlife movement for similar reasons, with dense commercial and residential development creating a barrier to movement. Limited movement opportunities for common wildlife species may be found along the flood control channels and railroad tracks within the study area.

The study area is located near the northern end of the unlined portion of Temescal Wash, which is part of MSHCP Proposed Constrained Linkage 4 (Riverside County, 2003; Vol. 1, Section 3). This wash becomes concrete-lined and surrounded by commercial development where it is crossed by the alternative source line routes. Because of these modifications to the natural stream course, wildlife movement is expected to be limited in this area.

A variety of wildlife species are expected to utilize the riparian vegetation in the Prado Flood Control Basin (i.e., MSHCP Existing Core A) for both regional and local wildlife movement, especially because the area is constrained on all sides by existing urban development and agricultural uses (Riverside County, 2003; Vol. 1, Section 3). Further, depending on seasonal flow, aquatic species may use the Santa Ana River as a movement corridor.

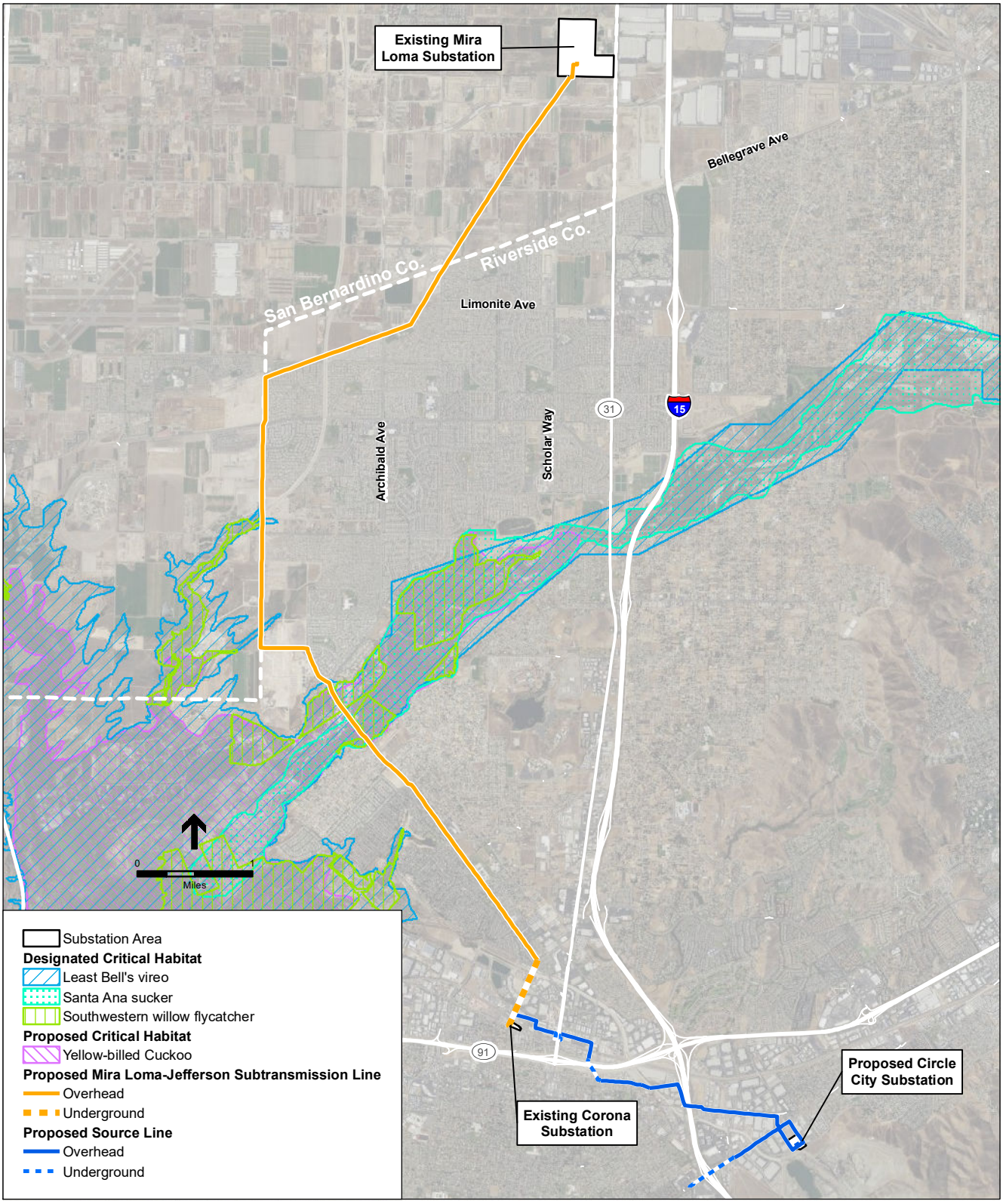
4.4.1.3 Special-Status Species

A comprehensive list of special-status plant and wildlife species that occur in the study area was compiled to assess the likelihood of species occurrence and potential Project impacts to these species. Some of these receive specific protection defined in federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this EIR, following a convention that has developed in practice but has no official sanction. The various categories encompassed by the term, and the legal status of each, are discussed in the *Regulatory Context* discussion within this section.

Special-status plant and wildlife species that are known or have potential to occur in the study area and their designated critical habitat are discussed below. Critical habitat is shown in **Figure 4.4-6**, *Critical Habitat in the Project Vicinity*, and is further described in the *Regulatory Setting* discussion below. A list of special-status species reported or with potential to occur within the study area was compiled on the basis of data in the PEA (SCE, 2015) including accompanying biological studies, CNDDB (CDFW, 2016), CNPS's Online Inventory of Rare and Endangered Plants (CNPS, 2016), and USFWS Trust Resource List (USFWS, 2016). The list is presented in **Table 4.4-2**, *Focused List of Special Status Species with Potential to Occur in the Project Area*. The list is intended to be comprehensive and the "Potential for Occurrence" designations apply to species and habitats in the study area that would not necessarily be impacted by the Project or alternatives. Based upon this information, special-status species that have at least a moderate potential to occur in the study area and could be exposed to project-related impacts are described below.

4.4.1.4 General Surveys for Sensitive Species

General plant and wildlife surveys and vegetation mapping were initially conducted by BonTerra Consulting in 2010. Additional areas were surveyed in 2011 and 2012 following shifts in the proposed and alternative alignments. The entire study area for the Project was surveyed in 2015 to incorporate the addition and removal of previously proposed project components and to update the existing survey information. Reconnaissance field surveys were conducted in February 2016 to evaluate Project and alternatives impacts and verify existing conditions. The general surveys included an evaluation of the potential for habitats to support special-status plant and wildlife species. Vegetation was mapped based on field mapping and aerial photographs. The general surveys also included an assessment of resources to comply with MSHCP requirements, which included an assessment of riparian/riverine resources, vernal pools, and urban/wildlands interface issues.



SOURCE: SCE, 2015; USFWS, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.4-6

Critical Habitat in the Project Area

TABLE 4.4-2
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Invertebrates				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT/--	Covered	Vernal pools and roadside ditches in seasonal grasslands, possibly interspersed with chaparral or coastal sage scrub vegetation.	**Low.** Focused protocol surveys for the entire study area were negative. Not observed during protocol-level surveys.
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE/--	Covered	Vernal pools, deep long lived pools in seasonal grasslands possibly interspersed with chaparral or coastal sage scrub vegetation.	**Low.** Focused protocol surveys for the entire study area were negative. Not observed during protocol-level surveys.
Delhi Sands flower-loving fly (*Rhaphiomidas terminates abdominalis*)	FE/--	Covered	Occurs on Delhi series soils with low vegetation density and friable substrate.	**Low.** Focused protocol surveys for the entire study area were negative. Not observed during protocol-level surveys.
Fish				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
Santa Ana sucker (*Catostomus santaanae*)	FT/SSC	Covered	Perennial streams with coarse substrates	**High.** High potential to occur in Santa Ana River. Critical Habitat designated in Santa Ana River.
OTHER SPECIAL-STATUS SPECIES				
Arroyo chub (*Gila orcuttii*)	--/SSC	Covered	Coastal freshwater streams and rivers with a steady current and emergent vegetation	**Low.** No suitable habitat within the study area.
Santa Ana speckled dace (*Rhinichthys osculus* ssp. *3*)	--/SSC	Not covered	Shallow streams and rivers with rocky bottoms	**Low.** Outside existing range of species. Not expected to occur
Amphibians				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
Arroyo toad (*Anaxyrus californicus [Bufo microscaphus californicus]*)	FE/SSC	Covered	Washes or intermittent streams with breeding pools and sandy shorelines	**Low.** Outside existing range of species. Not expected to occur
OTHER SPECIAL-STATUS SPECIES				
Western spadefoot (*Spea (Scaphiopus) hammondii*)	--/SSC	Covered	Streams, vernal pools, and temporary ponds	**Moderate.** Moderate potential to occur within study area. Suitable habitat present along alignment.
Northern leopard frog (native populations only) (*Lithobates [Rana] pipiens*)	--/SSC	Not covered	Native to Modoc and Lassen counties	**Low.** Outside existing range of species. Not expected to occur as a native population
Coast Range newt (*Taricha torosa torosa*)	--/SSC	Covered	Occurs along the coast and coast mountain ranges from Monterey to south San Diego County in wet forests, oak forests, chaparral, and grasslands; breeds in ponds, reservoirs, and streams	**Low.** Low potential to occur within the study area. Outside known species range.
Reptiles				
OTHER SPECIAL-STATUS SPECIES				
Western pond turtle (*Emys marmorata*)	FC/SSC	Covered	Ponds, lakes, marshes, rivers, streams, and ditches	**Moderate.** Moderate potential to occur in open water habitat, streams, and drainages within and adjacent to the study area

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Reptiles (cont.)				
OTHER SPECIAL-STATUS SPECIES (cont.)				
Coast horned lizard (*Phrynosoma blainvillii*)	--/SSC	Covered	Scrubland, grassland, coniferous forest, and woodland with loose, friable soil	**Low.** Low potential to occur, limited suitable habitat within the study area.
Orangethroat whiptail (*Aspidoscelis hyperytha [Cnemidophorus hyperythus beldingi]*)	--/SSC	Covered	Washes and open areas of sage scrub and chaparral with gravelly soils	**Low.** Low potential to occur, limited suitable habitat within the study area.
California mountain kingsnake (San Diego population) (*Lampropeltis zonata [L. z. pulchra]*)	--/SSC	Covered	Mixed woods, including coniferous forest, woodland, and chaparral	**Low.** Outside existing range of species. No suitable habitat within the study area. Not expected to occur.
Two-striped garter snake (*Thamnophis hammondii*)	--/SSC	Not Covered	Perennial or intermittent freshwater streams with rocky beds and adjacent dense vegetation	**High.** High potential to occur along riparian corridors and vegetated drainages within the study area.
South coast garter snake (*Thamnophis sirtalis* ssp.)	--/SSC	Not covered	Waterbodies in grassland, woodland, scrub, chaparral, and forest	**High.** High potential to occur, suitable habitat near water features and Santa Ana River within the study area.
Red-diamond rattlesnake (*Crotalus ruber*)	--/SSC	Covered	Open scrub, chaparral, woodland, and grassland	**Low.** Limited suitable habitat within the study area.
Birds				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
Swainson's hawk (nesting) (*Buteo swainsoni*)	--/ST	Covered	Grassland and ruderal vegetation	**Low (nesting).** Study area outside breeding range. Not expected to occur nesting; potential foraging habitat for migrants
Western yellow-billed cuckoo (nesting) (*Coccyzus americanus occidentalis*)	FT/SE	Covered	Dense, old-growth riparian habitats	**Moderate (nesting).** Suitable habitat within Prado Basin. No focused surveys have been completed but not detected during least Bell's vireo/willow flycatcher surveys.
Southwestern willow flycatcher (nesting) (*Empidonax traillii extimus*)	FE/SE	Covered	Dense riparian habitat with willows and mule fat	**Moderate (nesting).** Moderate nesting potential within Prado Basin. Not observed during focused surveys.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC	Covered	Coastal sage scrub	**Low (nesting).** Nesting habitat very minimal within study area. Foraging potential along line alignments. Not expected to occur.
OTHER SPECIAL-STATUS SPECIES				
Mountain plover (nonbreeding/ wintering) (*Charadrius montanus*)	--/SSC	Covered	Short-grass prairie or similar habitats with little vegetation	**Low (wintering).** Low potential to occur; limited foraging potential within study area.
Least bittern (*Ixobrychus exilis*)	--/SSC	Not covered	Freshwater and brackish marshes with dense, tall growth of aquatic vegetation	**Low (nesting).** Marsh habitat very minimal within study area. Foraging potential along line alignments.
Golden eagle (nesting and nonbreeding/ wintering) (*Aquila chrysaetos*)	B&GEPA/FP	Covered	Variety of open and semi-open habitats; nests in large trees or on cliffs	**Low (nesting).** Not expected to occur for nesting; limited nesting trees/structures. Foraging potential within study area.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Birds (cont.)				
		OTHER SPECIAL-STATUS SPECIES (cont.)		
Northern harrier (nesting) (*Circus cyaneus*)	--/SSC	Covered	Open habitats; nests in dense vegetation	**Moderate (nesting).** Moderate potential nesting habitat within study area. Potential foraging in grasslands, agricultural field and ruderal habitats within study area.
White-tailed kite (nesting) (*Elanus leucurus*)	--/FP	Covered	Grassland, agriculture, wetlands, oak woodlands, savannahs, and riparian habitat	**Moderate (nesting).** Suitable trees and shrubs within the study area provide potential nesting. Potential foraging throughout the study area.
Bald eagle (nesting and nonbreeding/ wintering) (*Haliaeetus leucocephalus*)	B&GEPA/SE, FP	Covered	Large waterbodies or free-flowing rivers with adjacent snags or perches	**Low (nesting).** Not expected to occur for nesting; limited nesting trees/structures. Foraging potential within study area.
American peregrine falcon (nesting) (*Falco peregrinus anatum*)	Delisted/Delisted, FP	Covered	Nests in cliffs, high building ledges, bridges, or other such structures; forages in a variety of habitats, especially wetlands and coastal areas	**Low (nesting).** Limited potential nesting trees/structures within the study area. Not expected to occur for nesting; foraging potential within study area. Incidentally observed during field visits.
Long-eared owl (nesting) (*Asio otus*)	--/SSC	Not covered	Grasslands and open habitats; nests in dense oaks and willows	**High (nesting).** High foraging/nesting potential within study area.
Burrowing owl (burrow sites; wintering in northern counties) (*Athene cunicularia*)	--/SSC	Covered	Variety of habitats with sparse vegetation and suitable mammal burrows	**High (nesting).** High foraging/nesting potential within study area. Observed at the northern portion of the proposed Mira Loma-Jefferson subtransmission line alignment during focused surveys.
Vermilion flycatcher (nesting) (*Pyrocephalus rubinus*)	--/SSC	Not covered	Mixture of trees, open fields, and open water	**Moderate (nesting).** Moderate foraging/nesting potential within study area.
Loggerhead shrike (nesting) (*Lanius ludovicianus*)	--/SSC	Covered	Pastures, agricultural fields, riparian areas, and open woodlands	**High (nesting).** Incidentally observed during other surveys and site visits. May forage throughout the study area. Suitable nesting habitat in shrubs and trees within the study area.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	--/SSC	Covered	Coastal sage scrub and alluvial sage scrub with prickly pear cactus or cholla	**Low (nesting).** Nesting habitat very minimal within study area. Foraging potential along line alignments. Not expected to occur.
Clark's marsh wren (*Cistothorus palustris clarkae*)	--/SSC	Not Covered	Freshwater or brackish marsh dominated by bulrushes or cattails	**Low (nesting).** Marsh habitat very minimal within study area. Foraging potential along line alignments.
Yellow warbler (nesting) (*Dendroica petechia brewsteri*)	--/SSC	Covered	Riparian areas with willows and cottonwoods	**High (nesting).** Incidentally observed in Prado Basin along the proposed subtransmission line and along subtransmission line alternative 2. High foraging/nesting potential within riparian habitats.
Yellow-breasted chat (nesting) (I*cteria virens*)	--/SSC	Covered	Streams, creeks, and rivers with dense thickets	**High (nesting).** Incidentally observed in Prado Basin. High foraging/nesting potential within riparian habitats.
Grasshopper sparrow (nesting) (*Ammodramus savannarum*)	--/SSC	Covered	Dense, dry, or well-drained grassland	**High (nesting).** High foraging/nesting potential within study area.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Birds (cont.)				
OTHER SPECIAL-STATUS SPECIES (cont.)				
Oregon vesper sparrow (nonbreeding/ wintering) (*Pooecetes gramineus affinis*)	--/SSC	Not Covered	Open fields and grasslands with short vegetation	**Low (wintering).** May forage periodically within study area.
Tricolored blackbird (nesting colony) (*Agelaius tricolor*)	--/SSC	Covered	Marsh vegetation of bulrushes and cattails	**Low (nesting).** Minimal nesting habitat within study area. Potential foraging within study area.
Yellow-headed blackbird (nesting) (*Xanthocephalus xanthocephalus*)	--/SSC	Not Covered	Open habitats with rocky areas for roosting; roosts in caves, crevices, mines, and occasionally hollow trees and buildings.	**Low (nesting).** Minimal nesting habitat within study area. Potential foraging within study area.
Mammals				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	FE/SSC	Covered	Sandy and sandy loam soils with alluvial scrub vegetation	**Low.** Low potential to occur within study area. Focused habitat assessment did not identify suitable habitat within the study area
Stephens' kangaroo rat (*Dipodomys stephensi*)	FE/ST	Covered	Grasslands and coastal sage scrub with sparse cover	**Low.** Low potential to occur within study area. Focused habitat assessment did not identify suitable habitat within the study area
OTHER SPECIAL-STATUS SPECIES				
Pallid bat (*Antrozous pallidus*)	--/SSC	Not Covered	Open habitats with rocky areas for roosting; roosts in caves, crevices, mines, and occasionally hollow trees and buildings.	**Low (roosting).** Minimal roosting habitat available within the study area. Potential foraging throughout line alignments and substations.
Townsend's big-eared bat (*Corynorhinus townsendii*)	--/SCT, SSC	Not Covered	Oak woodlands, deserts, grasslands, forests, and meadows; roosts in mine tunnels, limestone caves, lava tubes, buildings, and other man-made structures.	**Low (roosting).** Minimal roosting habitat available within the study area. Potential foraging throughout study area. This disturbance-sensitive species is not expected in dense urban areas.
Western red bat (*Lasiurus blossevillii*)	--/SSC	Not Covered	Riparian habitats in leafy vegetation particularly mature stands of cottonwood and sycamore.	**Low (roosting).** Minimal roosting habitat available within the project area. Potentially occurring in the Sana Ana River riparian corridor.
Western yellow bat (*Lasiurus xathinus*)	--/SSC	Not Covered	Dry, thorny vegetation; dead palm fronds; roosts in leafy vegetation.	**Low (roosting).** Minimal roosting habitat available within the study area. Potential roosting in ornamental non-pruned palms. Potential foraging throughout line alignments and substations.
Western mastiff bat (*Eumops perotis californicus*)	--/SSC	Not Covered	Conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban areas; roosts on cliff faces.	**Low (roosting).** Minimal roosting habitat available within the study area. Potential foraging throughout the line alignments and substation sites.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC	Covered	Herbaceous and desert shrub areas and early stages of forest and chaparral.	**Moderate.** Moderate potential to occur within study area.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Mammals (cont.)				
OTHER SPECIAL-STATUS SPECIES (cont.)				
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC	Covered	Chaparral, coastal sage scrub, and grassland	**Low.** Minimal suitable habitat within the study area. Outside existing range of species.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	--/SSC	Covered	Grasslands and coastal sage scrub with sandy soils	**Low.** Low potential to occur within study area. Focused habitat assessment did not identify suitable habitat within the study area.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC	Covered	Desert habitats such as Joshua tree woodland, pinyon-juniper, chaparral, and sagebrush	**Low.** Minimal suitable habitat within the study area.
American badger (*Taxidea taxus*)	--/SSC	Not Covered	Shrub, forest, and herbaceous habitats with friable soil	**Low.** Minimal suitable habitat within the study area.
Plants				
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES				
Munz's onion (*Allium munzii*)	FE/ST/1B.1	Covered	Grassy openings in coastal sage scrub; heavy clay soils; 985 to 2,950 feet above mean sea level (amsl)	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Marsh sandwort (*Arenaria paludicola*)	FE/SE/1B.2	Not covered	Wet meadows and marshes; between sea level and 985 feet amsl 1675m.	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Salt marsh bird's-beak (*Chloropyron maritimum ssp. maritimum [Cordylanthus maritimus ssp. maritimus]*)	FE/SE/1B.2	Not covered	Coastal salt marsh; between sea level and 33 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Slender-horned spineflower (*Dodecahema leptoceras*)	FE/SE/1B.1	Covered	Sandy or gravelly areas; 655 to 2,295 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Santa Ana River woollystar (*Eriastrum densifolium ssp. sanctorum*)	FE/SE/1B.1	Covered	Washes, floodplains, and dry river beds; between sea level and 1,640 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
OTHER SPECIAL-STATUS SPECIES				
Chaparral sand-verbena (*Abronia villosa var. aurita*)	--/--/1B.1	Not covered	Sandy places in coastal sage scrub and chaparral, alluvial washes, and river benches; between sea level and 5,250 feet amsl.	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
San Diego ambrosia (*Ambrosia pumila*)	FE/--/1B.1	Covered	Low, seasonally wet areas with alkaline soils and disturbed sites; 165 to 1,970 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Coulter's saltbush (*Atriplex coulteri*)	--/--/1B.2	Not covered	Alkaline soils or clay barrens in open areas of perennial grasslands, coastal sage scrub, and coastal bluff scrub; between sea level and 1,640 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Round-leaved filaree (*California macrophylla*)	--/--/1B.1	Covered	Clay soils; open sites in grasslands and scrublands; between sea level and 3,940 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Plants (cont.)				
OTHER SPECIAL-STATUS SPECIES (cont.)				
Lucky morning glory (*Calystegia felix)*	--/--/3.1	Not covered	Wetland and marshy habitats, as well as drier habitats; alkaline meadows and seeps; alluvial riparian scrub; between 100 and 800 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Plummer's mariposa lily (*Calochortus plummerae*)	--/--/1B.2	Covered	Coastal sage scrub; dry, rocky chaparral; yellow-pine forest; between sea level and 5,580 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Intermediate mariposa lily (*Calochortus weedii var. intermedius*)	--/--/1B.2	Covered	Dry, rocky, open slopes of coastal sage scrub and chaparral; between sea level and 2,230 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Payson's jewel-flower (*Caulanthus simulans*)	--/--/4.2	Covered	Chaparral, scrub, pinyon/juniper woodland; 1,310 to 7,220 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Smooth tarplant (*Centromadia pungens ssp. laevis*)	--/--/1B.1	Covered	Disturbed sites; grasslands; open, poorly drained flats, depressions, and waterways; 295 to 1,640 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Parry's spineflower (*Chorizanthe parryi var. parryi*)	--/--/1B.1	Covered	Open, sandy sites often on gravelly slopes; 295 to 2,625 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Long-spined spineflower (*Chorizanthe polygonoides var. longispina*)	--/--/1B.2	Covered	Clay soils, especially derived from Gabbro; 100 to 4,920 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
White-bracted spineflower (*Chorizanthe xanti var. leucotheca*)	--/--/1B.2	Not covered	Sandy or gravelly soils; 1,315 to 4,265 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
California saw-grass (*Cladium californicum*)	--/--/2.2	Not covered	Alkaline marshes and swamps; between sea level and 7,055 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Many-stemmed dudleya (*Dudleya multicaulis*)	--/--/1B.2	Covered	Heavy, often clayey soils in coastal sage scrub and native grasslands on coastal plains and sandstone outcrops; between sea level and 1,970 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Palmer's grapplinghook (*Harpagonella palmeri*)	---/--/4.2	Covered	Dry, semi-barren sites in chaparral, coastal sage scrub, and grasslands; between sea level and 3,280 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Tecate cypress (*Hesperocyparis (Callitropsis) forbesii*)	--/--/1B.1	Not covered	Chaparral; 1,475 to 4,920 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Mesa horkelia (*Horkelia cuneata ssp. puberula*)	--/--/1B.1	Not covered	Dry, sandy coastal chaparral and openings in oak woodlands; 230 to 2,855 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*)	--/--/1B.1	Covered	Seasonally flooded vernal alkali plains, wetlands, and vernal pools; between sea level and 3,280 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

Common and Scientific Name	Listing Status USFWS/ CDFW/CNPS	MSCHP Coverage	General Habitat	Potential for Occurrence
Plants (cont.)				
OTHER SPECIAL-STATUS SPECIES (cont.)				
Heart-leaved pitcher sage (*Lepechinia cardiophylla*)	--/--/1B.2	Covered	Chaparral ridgelines; 1,979 to 3,940 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*)	--/--/1B.2	Not covered	Dry sandy or thin soils in coastal sage scrub and chaparral; between sea level and 1,640 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Parish's desert-thorn (*Lycium parishii*)	--/--/2.3	Not covered	Sandy to rocky slopes and canyons; between sea level and 3,280 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Pringle's monardella (*Monardella pringlei*)	--/--/1A	Not covered	Interior sand dunes and sandy soils; 985 to 1,315 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
California muhly (*Muhlenbergia californica*)	--/--/4.3	Covered	Streambanks and canyons; 330 to 6,560 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	--/--/1B.1	Covered	Alkaline floodplains and vernal pools; between sea level and 2,300 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Peninsular nolina (*Nolina cismontane*)	--/--/1B.2	Not covered	Dry chaparral of coastal mountains; 655 to 4,265 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Santiago Peak phacelia (*Phacelia keckii*)	--/--/1B.3	Not covered	Open chaparral; 3,280 to 5,250 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys. Not expected to occur.
Brand's star phacelia (*Phacelia stellaris*)	FC/--/1B.1	Covered	Open areas of coastal sage scrub; between sea level and 1,315 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
White rabbit-tobacco (*Pseudognaphalium leucocephalum*)	--/--/2.2	Not covered	Sandy or gravelly benches, dry stream bottoms, and canyon bottoms; between sea level and 1,640 feet amsl	**Low.** Low potential to occur within study area. Not observed during 2010, 2012, and 2013 surveys.
San Miguel savory (*Satureja chandleri*)	--/--/1B.2	Covered	Rocky slopes in chaparral and oak woodlands; 1,705 to 2,265 feet amsl	**Low.** Low potential to occur within study area. Not observed during surveys.
Chaparral ragwort (*Senecio aphanactis*)	--/--/2.2	Not covered	Alkaline flats and dry, open rocky areas of coastal bluff scrub and coastal sage scrub; 30 to 1,805 feet amsl	**Low.** Low potential to occur within study area. Not observed during surveys.
Salt spring checkerbloom (*Sidalcea neomexicana*)	--/--/2.2	Not covered	Alkaline seeps, springs, and marshes; between sea level and 4,920 feet amsl	**Low.** Low potential to occur within study area. Not observed during surveys.
San Bernardino aster (*Symphyotrichum defoliatum*)	--/--/1B.2	Not covered	Grasslands, seasonal or perennial wetlands, and disturbed places; between sea level and 6,725 feet amsl	**Low.** Low potential to occur within study area. Not observed during surveys.

TABLE 4.4-2 (CONTINUED)
FOCUSED LIST OF SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE PROPOSED PROJECT AREA

STATUS CODES:

Federal (U.S. Fish and Wildlife Service):

B&GEPA = Bald and Golden Eagle Protection Act
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
CT = Candidate Species for listing as Threatened under the Federal Endangered Species Act

State (California Department of Fish and Wildlife):

SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SCT = Candidate as Threatened by State of California
SSC = California Species of Special Concern
FP = California fully protected species

California Rare Plant Ranks

Rank 1A = Plants presumed extinct in California
Rank 1B = Plants rare, Threatened, or Endangered in California and elsewhere
Rank 2 = Plants rare, Threatened, or Endangered in California but more common elsewhere
Rank 3 = Plants about which more information is needed
Rank 4 = Plants of limited distribution
0.1 = Plants seriously threatened in California
0.2 = Plants moderately threatened in California
0.3 = Plants not very threatened in California

4.4.1.5 Focused Surveys

Focused biological surveys were conducted for special-status plant species (including MSHCP narrow endemic), Delhi sands flower-loving fly (DSFF) (*Rhaphiomidas terminates abdominalis*), special-status fairy shrimp, burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*) were performed between 2010 and 2016. Habitat assessments were conducted for special-status mammals, including San Bernardino kangaroo rat (*Dipodomys merriami parvus*), Stephens' kangaroo rat (*Dipodomys stephensi*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), and bat species. Surveys were conducted in 2010 and 2011 for various portions of the study area, including alignments for the Project and alternatives. Focused species surveys conducted after 2011 covered the entire study area. Such surveys from 2012 to 2016 were performed to examine new proposed and alternative Project elements, and consistent with resource agency guidance, to update and corroborate earlier survey findings. **Table 4.4-3**, *Summary of Special-Status Species Surveys*, summarizes previous focused surveys conducted for the Project.

Special-Status Plant Species Surveys

Special-status plant surveys were floristic in nature and were conducted in 2010, 2011, 2012, and 2013. These surveys followed the CDFW (2009) *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities*. Prior to conducting the field surveys each year, reference populations for annual and difficult-to-detect target species with a potential to occur in the study area were monitored to ensure that the scheduled surveys were comprehensive and conducted during the appropriate blooming period for these species. A systematic walking survey was conducted and all plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified to the taxonomic level necessary to determine whether they are a special-status species.

TABLE 4.4-3
SUMMARY OF SPECIAL-STATUS SPECIES SURVEYS

Date	Type of Survey	Area Surveyed	Results (Source)
April, May, and June 2010	Special-Status Plant Species	Corona Substation, the proposed Circle City Substation site, the Substation Site Alternative, and several proposed and alternative source line alignments.	No special-status plants were detected. (BonTerra, 2010a)
April, May, June, July, and Aug. 2011	Special-Status Plant Species	Mira Loma Substation, Corona Substation, the proposed Circle City Substation site, the Substation Site Alternative, the proposed Pedley and Databank source lines, portions of the alternative source line alignments, the Mira Loma-Jefferson subtransmission line alignment, and the Subtransmission Line Alternative 1 alignment.	No special-status plants were detected. (BonTerra, 2011a)
April, June, and Aug. 2012	Special-Status Plant Species	Mira Loma Substation; Corona Substation; the proposed Circle City Substation site; the proposed Mira Loma-Jefferson subtransmission line alignment; the proposed Pedley and Databank source lines; and proposed staging yards, access roads, guard structures, and pulling sites for the proposed Project.	No special-status plants were detected. (BonTerra, 2012a)
May and Aug. 2013	Special-Status Plant Species	Mira Loma Substation, Corona Substation, the proposed Circle City Substation site, the proposed Pedley and Databank source lines, and the proposed Mira Loma-Jefferson subtransmission line alignment.	No special-status plants were detected (Chambers Group, 2013).
2010	Presence/Absence Surveys for Delhi Sands Flower-Loving Fly (DSFF)	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas.	No DSFF were detected. (BonTerra, 2010b)
2011	Presence/Absence Surveys for DSFF	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas.	No DSFF were detected. (BonTerra, 2011b)
2012	Presence/Absence Surveys for DSFF	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas.	No DSFF were detected. (Dicus Biological, 2012)
2013	Presence/Absence Surveys for DSFF	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas.	No DSFF were detected. (Dicus Biological, 2014a)
2014	Presence/Absence Surveys for DSFF	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas.	No DSFF were detected. (Dicus Biological, 2014b)
2015	Presence/Absence Surveys for DSFF	Areas within the Ontario Recovery Unit that contains Delhi series soils; excludes developed and agricultural areas (approximately 48 acres).	No DSFF were detected. (Environmental Intelligence, 2015)
2010/2011	Wet Season Survey for Vernal Pool Branchiopods	Two ponds identified in the project area.	No special-status branchiopods were detected. (BonTerra, 2011c)
2011/2012	Wet Season Survey for Vernal Pool Branchiopods	Two ponds from previous year plus six additional ponding areas in the project area.	No special-status branchiopods were detected. (BonTerra, 2011d)
2012/2013	Wet Season Survey for Vernal Pool Branchiopods	Entire proposed Project area inclusive of previous year ponds; covered 86 basins.	No special-status branchiopods were detected. (BonTerra, 2012b)
2014/2015	Wet Season Survey for Vernal Pool Branchiopods	Entire proposed Project area inclusive of previous year ponds/basins.	No special-status branchiopods were detected (Busby Biological Services, 2015).

TABLE 4.4-3 (CONTINUED)
SUMMARY OF SPECIAL-STATUS SPECIES SURVEYS

Date	Type of Survey	Area Surveyed	Results (Source)
2015/2016	Wet Season Survey for Vernal Pool Branchiopods	Entire proposed Project area inclusive of previous year ponds/basins.	No special-status branchiopods were detected (Environmental Intelligence, 2016).
July 2010	Focused Burrowing Owl Survey (BUOW)	Corona Substation, the proposed Circle City Substation site, the Substation Site Alternative, and several potential source line alignment segments (including some not in the current study area).	No BUOW were detected (BonTerra, 2010c)
Aug. 2011	Focused BUOW Survey	Mira Loma Substation, Corona Substation, the proposed Circle City Substation site, the Substation Site Alternative, several potential source line route segments (including some not in the current study area), the Mira Loma-Jefferson subtransmission line alignment, and the Subtransmission Line Alternative 1 alignment.	Eight individual BUOW were observed near Mira Loma Substation. (BonTerra, 2011e)
July and Aug. 2012	Focused BUOW Survey	Mira Loma Substation; Corona Substation; the proposed Circle City Substation site; the proposed Pedley and Databank source lines; the proposed Mira Loma-Jefferson subtransmission line alignment; and proposed staging yards, access roads, guard structures, and pulling sites for the proposed Project.	Eleven BUOW were observed (two family groups and one pair). (BonTerra, 2012c)
2010	Focused Presence/ Absence Surveys for Least Bell's Vireo (LBVI)	Within riparian habitat in the Prado Basin between Sherborn Street and I-15.	One pair of breeding LBVI detected, but no nest detected within survey area (BonTerra, 2010d).
2011	Focused Presence/ Absence Surveys for LBVI and Southwestern Willow Flycatcher (SWFL)	The proposed Mira Loma-Jefferson subtransmission line alignment, the Subtransmission Line Alternative 1 alignment, and the Subtransmission Line Alternative 2 alignment.	19 LBVI territories observed; no SWFL detected (BonTerra, 2011f).
2012	Focused Presence/ Absence Surveys for LBVI and SWFL	The proposed Mira Loma-Jefferson subtransmission line alignment (Santa Ana River corridor and Mill Creek tributary).	10 LBVI territories detected; no SWFL detected (BonTerra, 2012d).
2016	Focused Riparian Bird Surveys for LBVI, SWFL, and Yellow-Billed Cuckoo (YBCU)	The proposed Mira Loma-Jefferson subtransmission line alignment (Santa Ana River corridor, Mill Creek tributary, and small tributary to Prado Basin near Nolan Way).	15 LBVI breeding territories/pairs, 3 SWFI detected (non-breeding), no YBCU (Environmental Intelligence, 2016).
2011	Habitat Assessment for Bat Species	Proposed Circle City Substation site located southeast of Leeson Lane and north of All American Way.	No suitable habitat was identified (BonTerra, 2011g)
2010	Habitat Assessment for Stephens' kangaroo rat, San Bernardino kangaroo rat, and Los Angeles pocket mouse	Existing Mira Loma Substation, the proposed Circle City Substation site, the proposed Pedley and Databank source lines, the proposed Mira Loma-Jefferson subtransmission line alignment, and portions of the alternative alignments.	No suitable habitat was identified (SMJ Biological, 2010).
2012	Habitat Assessment for Stephens' kangaroo rat, San Bernardino kangaroo rat, and Los Angeles pocket mouse	Existing Mira Loma Substation, the proposed Circle City Substation site, the proposed Pedley and Databank source lines, and the proposed Mira Loma-Jefferson subtransmission Line.	No suitable habitat was identified (SMJ Biological, 2012).

NOTES:
DSFF = Delhi sands flower-loving fly
BUOW = burrowing owl
LBVI = least Bell's vireo
SWFL = southwestern willow flycatcher
YBCU = yellow-billed cuckoo

No special-status plants were observed during any of the focused surveys (BonTerra, 2010a; 2011a; 2012a; Chambers Group, 2013).

Delhi Sands Flower-Loving Fly Surveys

Focused surveys for DSFF followed the USFWS protocol (USFWS 1996a, as amended). In 2010 and 2011, surveys were conducted by EnviroPlus Consulting biologists. Surveys were conducted in areas within the Ontario Recovery Unit that contains Delhi series soils, and excluded developed and agricultural areas. Surveys were conducted twice a week between July 1 and September 20 in 2010 and 2011 between the hours of 10:00 a.m. and 2:00 p.m., with no more than 50 acres being surveyed per day.

Focused surveys for DSFF in 2012, 2013, and 2014 were conducted by Dicus Biological biologists. Surveys were conducted twice a week between July 1 and September 20 between the hours of 10:00 a.m. and 2:00 p.m., with no more than 50 acres being surveyed per day.

No DSFF were detected during focused surveys (EnviroPlus, 2010; 2011; Dicus Biological, 2012; 2013; 2014; Environmental Intelligence, 2015).

Fairy Shrimp Surveys

Habitat assessments for Riverside fairy shrimp (*Streptocephalus woottoni*) were conducted for the study area in June and November 2010, by BonTerra Consulting biologists (BonTerra, 2011c). Focused surveys following the USFWS protocol (USFWS, 1996b) and were conducted on December 10 and 24, 2010, and January 7 and 21, 2011 (i.e., the 2010/2011 surveys). The 2010/2011 surveys covered two ponds within the survey area and represent the first year of wet-season surveys for these ponds (BonTerra, 2011d).

A second year of wet-season surveys covering the entire study area and was conducted by BonTerra Consulting biologists. Six additional ponding areas were observed during these surveys. The 2011/2012 surveys represent the first year of wet-season surveys for these additional ponding areas, and the second year of wet-season surveys for previously surveyed ponding areas (BonTerra, 2012b).

A second set of focused surveys was conducted in 2012 and 2013 to update the information obtained from previous surveys. The entire study area was included in this set of surveys. Habitat assessments were conducted in October 2012 by the Chambers Group, Inc. (2013). Focused species wet-season surveys were conducted by Busby Biological Services biologists for the 2012/2013 wet season. The 2012/2013 surveys covered 86 basins—a majority of which were not included in prior surveys. The 2012/2013 surveys represent a third year of wet-season surveys on the 2010/2011 ponds, a second year of wet-season surveys on the additional 2011/2012 ponds, and the first year of wet-season surveys for additional ponds detected in 2012/2013. Additional focused protocol-level surveys were conducted in 2014 and 2015 to provide the second year of wet-season surveys. The entire study area was included in this set of surveys. The 2014/2015 surveys were conducted by Busby Biological Services, Inc. (2015).

Surveys were intended to identify special-status fairy shrimp, and in particular the Riverside fairy shrimp and vernal pool fairy shrimp. No special-status fairy shrimp were detected during focused surveys (BonTerra, 2011; 2012; Chambers Group, 2013; Busby Biological Services, 2015; Environmental Intelligence, 2016).

Burrowing Owl Surveys

Surveys conducted for burrowing owl in 2010, 2011, and 2012 followed the *Burrowing Owl Survey Instructions for the Western Riverside County MSHCP* (Riverside County, 2006). Surveys for burrowing owl were conducted during the breeding season, which extends from March 1 to August 31. These surveys were conducted in three phases, and include a habitat assessment, burrow surveys, and focused owl surveys.

In 2010, no burrowing owls or signs of owl were observed but suitable habitat in non-native grassland, ruderal, and disturbed areas of the survey area were noted (BonTerra, 2010c). In 2011, a total of eight individual burrowing owls were observed adjacent to the proposed Mira Loma-Jefferson subtransmission line alignment, north of State Route 91 (SR 91) near the Mira Loma Substation in areas within approximately 500 feet of the Project site during the focused surveys. Two individual owls were observed at one location just south of Edison Avenue (BonTerra, 2011e). In 2012, a total of 11 burrowing owls were observed during the focused surveys; six individuals were within approximately 500 feet of the survey area and five owls were incidentally observed nearby. A family of four owls was observed at one location just southwest of the intersection of Edison Avenue and Cleveland Avenue, a family of five owls was observed just northwest of intersection of Eucalyptus Avenue and Cleveland Avenue, and a pair of owls was observed at one location just west of Hellman Avenue (BonTerra, 2012c).

Least Bell's Vireo and Southwestern Willow Flycatcher

Focused surveys for least Bell's vireo were conducted in 2010, 2011, 2012, and 2016 following USFWS protocol (USFWS, 2001). In 2011, 2012, and 2016 focused surveys were conducted for least Bell's vireo and southwestern willow flycatcher. The southwestern willow flycatcher surveys followed USFWS protocol (Sogge et al., 2010) and may be conducted concurrently with least Bell's vireo surveys.

In 2010, one pair was detected along the flood control channel south of Sherborn Street near the Alternative E3 alignment (BonTerra, 2010b). In 2011, 19 least Bell's vireo territories were detected. Twelve territories were detected along River Road Bridge within Santa Ana River, five territories were along Edison Trail within Santa Ana River, and the remaining two territories were along Mill Creek northwest of Hellman Avenue (BonTerra, 2011b). In 2012, ten least Bell's vireo territories were detected. Nine territories were located in riparian habitat along River Road Bridge in the Santa Ana River corridor; the remaining territory was detected at Mill Creek near Hellman Avenue. In 2016, 24 individual least Bell's vireo were observed with approximately 15 separate territories occurring along the proposed subtransmission line corridor. No southwestern willow flycatchers were detected in 2010, 2011, or 2012, but three migrants were detected in late May within the Santa Ana River corridor near River Road (BonTerra, 2012b, Environmental

Intelligence, 2016). The source line and subtransmission line alternative corridors were not surveyed in 2012 or 2016, but focused surveys were included in 2010 and 2011.

Western Yellow-Billed Cuckoo Surveys

Suitable foraging and limited suitable breeding habitats for western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) are present within the Prado Flood Control Basin. Focused surveys were conducted during the 2016 nesting season within suitable habitat, in accordance with MSHCP requirements. The western yellow-billed cuckoo surveys followed USFWS protocol and a minimum of four survey visits were conducted during three survey periods between June 15 and August 15, 2016 (Halterman, et al., 2016). The surveyed area was along the proposed Mira Loma-Jefferson subtransmission line corridor.

No western yellow-billed cuckoos were observed during focused surveys or incidentally during other site visits for special-status species within riparian habitat (Environmental Intelligence, 2016).

Bat Species Habitat Assessment

A habitat assessment for bat species was conducted on July 21 and September 12, 2011 by BonTerra Consulting. The first survey was conducted during the daytime to locate signs of bats and/or potential roosting sites. The second survey was conducted at sunset to record relevant nocturnal site conditions and to incidentally observe any emerging bat species. The surveyed area included the proposed Circle City Substation site. At the time of the survey there was a large commercial building that was assessed for roosting habitat. No sign of bat roosting was identified (BonTerra, 2011g). This building has since been demolished and the site is now characterized by barren/ruderal habitat with no potential to support roosting bats. The Mira Loma Substation, the proposed Mira Loma-Jefferson subtransmission lines, proposed source lines, or alternatives alignments were not assessed for bat habitat.

Special-Status Mammals Habitat Assessments

A habitat assessment for Stephens' kangaroo rat, San Bernardino kangaroo rat, and Los Angeles pocket mouse was conducted on July 18, 2010 and May 13, 2012, by SMJ Biological Consultants. The assessment included the existing Mira Loma Substation, the proposed Circle City Substation site, the proposed Source Lines alignments, and the proposed Mira Loma-Jefferson subtransmission line alignment. Portions of the Alternatives E1, E2, and E3 corridors and Alternatives C1 and C2 were only surveyed in 2010. The entire Alternative C2 was not surveyed. General habitat conditions were viewed on an aerial photograph, and all undeveloped areas were noted on a field map and checked in the field for potential suitability for the three species.

No suitable habitat for special-status rodents was identified during habitat assessments (SMJ Biological Consultants, 2010; 2012).

4.4.1.6 Jurisdictional Waters of the U.S. and State

The study area was assessed for the presence of U.S. Army Corps of Engineers (USACE)-jurisdictional waters of the U.S., including wetlands (if present) and/or jurisdictional waters of the

State. The assessment included a review of aerial images of the study area and field visits to verify potential jurisdictional resources. BonTerra Consulting conducted field visits on June 8 and July 1, 2010. LSA Associates biologists conducted field visits on June 3, 4, and 18, 2015 within a survey area, which included the proposed Circle City Substation site, staging yards, and the subtransmission and source line alignments (SCE, 2015).

A formal jurisdictional delineation of the study area was conducted on November 23, 2011, and January 6, 2012. The delineations followed the protocol in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008) and the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987). Both the 1987 Wetlands Manual and the Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of waters of the U.S. and wetland resources. A three-parameter approach requiring evidence of wetland hydrology, hydrophytic vegetation, and hydric soils was used to identify wetland waters of the U.S. Non-wetland waters of the U.S. were delineated based on the limits of the ordinary high water mark (OHWM), which can be determined by a number of factors, including erosion, the deposition of vegetation or debris, and changes in vegetation.

The CDFW's jurisdiction is defined as the top of the bank to the top of the bank of the stream, channel, or basin or to the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, creek, pond, or lake or other impoundment. The Regional Water Quality Control Board (RWQCB) shares USACE jurisdiction unless isolated conditions are present. If isolated water conditions are present, the RWQCB exercises jurisdiction using the USACE's definition of the OHWM and/or the three parameter wetlands methodology pursuant to the 1987 Wetlands Manual. Jurisdictional features were delineated using an aerial photograph with a scale of 1 inch equal to 200 feet. The field survey included the collection of vegetation, soils, and hydrologic data from nine sampling points in the study area; this information was recorded on Wetland Determination Data Forms.

Multiple hydrologic features in the survey area[1] may be under the jurisdiction of the USACE, the RWQCB, and/or the CDFW. These features include the Santa Ana River and Prado Flood Control Basin, as well as several flood control channels, drainages, and impoundments. As summarized in **Table 4.4-4**, *Potentially Jurisdictional Aquatic Resources*, the jurisdictional delineation identified a total of approximately 15.5 acres of USACE-jurisdictional waters of the U.S. (approximately 2.38 acres are wetlands and 13.12 acres are non-wetland waters) (SCE, 2015). The RWQCB-jurisdictional boundaries include those determined for the USACE under waters of the U.S., as well as isolated waters, which include the impoundments in the survey area. Therefore, a total of approximately 25.36 acres of waters of the state was identified to be present in the survey area (SCE, 2015), which includes approximately 21.53 acres of CDFW-jurisdictional waters (SCE, 2015).

[1] The survey area was smaller than the study area and consisted of the Circle City Substation boundary, staging yards, the subtransmission line route and associated ROW.

TABLE 4.4-4
POTENTIALLY JURISDICTIONAL AQUATIC RESOURCES

Jurisdiction	Approximate Amount (acres)
Waters of the U.S.	
Wetlands	2.38
Other non-wetland waters of the U.S.	13.12
Total waters of the U.S.	**15.5**
Waters of the STATE	
Isolated waters of the State	9.86
Non-isolated waters of the State	15.50
Total waters of the State	**25.36**
CDFW Jurisdictional Waters	
Total CDFW-jurisdictional waters	**21.53**

SOURCE: SCE, 2015

4.4.1.7 Wildlife Movement

The study area is located in a mosaic of developed and partially developed parcels, demolished and partially demolished dairies/farms, cleared lands, active agricultural operations, and open space. Agricultural land uses tend to increase to the north along the proposed Mira Loma-Jefferson subtransmission line alignment, and developed land uses cover most of the southern portion of the study area south of the Santa Ana River.

Portions of the proposed Circle City Substation site, ~~the Substation Site~~ Alternative D2, and ~~the Source Route~~ Alternative E3 occur within the MSHCP Proposed Constrained Linkage 4.[2] This proposed linkage is comprised of the portion of Temescal Wash that extends from Indiana Avenue to El Cerrito Road. This linkage provides movement for species between core areas in Lake Mathews/Estelle Mountain and areas upstream along Temescal Wash. The northern extent of this linkage is constrained by existing development in the City of Corona (RCA, 2010). Each of the proposed and alternative source line corridors cross Temescal Wash.

The proposed Mira Loma-Jefferson subtransmission line alignment would cross the Prado Flood Control Basin; a dense riparian corridor. This area represents a regional wildlife movement corridor separating the upper and lower Santa Ana River watershed. Amphibians, reptiles, and small mammals are expected to utilize the riparian vegetation for movement, though larger mammals are not as likely to be found along the river corridor. Further, during appropriate seasonal flows, the Santa Ana River may provide a movement corridor for fish and other aquatic species. The wetlands of the Prado Flood Control Basin are home to approximately 250 rare and endangered bird and waterfowl species that migrate along the Pacific Flyway or reside in the area

[2] MSHCP Proposed Constrained Linkage 4 is a constricted connection expected to provide for movement of identified planning species between Core Areas, where options for assembly of the connection are limited due to existing patterns of use.

(SCE, 2015). The MSHCP identifies the Prado Flood Control Basin and Santa Ana River as within a "core area" recognized as "Existing Core A".[3] Within this core area, a 160-acre designation unit named Cell 964 is located less than 3,000 feet upstream of the study area. This area functions as a linkage connecting Orange County to the west with San Bernardino County to the north. It is also connected to the Cleveland National Forest via both upland and riparian connections (RCA, 2010).

4.4.1.8 Regulatory Setting

Biological resources in the study area are protected and regulated by a variety of laws and policies administered by federal, state, and local agencies. This section summarizes the biological resource-related agencies, regulations, and policies relevant to the Project and alternatives.

Federal

U.S. Fish and Wildlife Service

The USFWS administers the Federal Endangered Species Act (FESA) (16 U.S. Code [USC] §153 et seq.), the Migratory Bird Treaty Act (MBTA) (16 USC §§703–711), and the Bald and Golden Eagle Protection Act (16 USC §668).

Federal Endangered Species Act

Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as Threatened or Endangered (16 USC §1533(c)). Two federal agencies oversee the FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Oceanic and Atmospheric Administration/ National Marine Fisheries Service (NOAA Fisheries/NMFS) has jurisdiction over anadromous fish and marine fish and mammals. FESA Section 7 mandates that all federal agencies consult with the USFWS and NOAA Fisheries/NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the "take"[4] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

FESA Section 10 requires the issuance of an "incidental take" permit before any non-federal public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of a project by providing for the overall preservation of the affected species through specific mitigation measures.

[3] The MSHCP defines a "core area" as "a block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more Covered Species."

[4] The FESA definition of the term "take" is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

Critical Habitat

USFWS designates critical habitat for listed species under FESA. Critical habitat designations are specific areas within a geographic region that are occupied by a species and determined to be critical to its survival in accordance with FESA. Agencies that propose, fund, or issue a permit for a project that may affect a federally listed species or critical habitat must prepare a Habitat Conservation Plan as part of an application for a permit from the USFWS. **Figure 4.4-6** depicts designated critical habitat in the study area, which has been designated for Santa Ana sucker, least Bell's vireo, and southwestern willow flycatcher. Critical habitat is proposed for the yellow-billed cuckoo.

Protection of Nesting Birds - Migratory Bird Treaty Act

The MBTA prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and/or nests, except in accordance with regulations prescribed by the Secretary of the Interior. Bird species protected under the MBTA are listed in the Code of Federal Regulations (CFR) (50 CFR 10.13.)

U.S. Army Corps of Engineers

Clean Water Act, §404

The U.S. Army Corps of Engineers (USACE) administers Section 404 of the Clean Water Act (CWA) (33 USC §1251 et seq.), regulates activities in wetlands and "other waters of the United States (U.S.)." Wetlands are a subset of "waters of the U.S." that are defined in the Code of Federal Regulations (CFR) (33 CFR 328.3[a]; 40 CFR 230.3[o]). Definitions in the regulations include waters such as:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
2. All interstate waters including interstate wetlands. (Wetlands are defined by the federal government [33 CFR 328.3(b), 1991] as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions.)
3. All other waters—such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds—the use, degradation, or destruction of which could affect interstate or foreign commerce. This includes any waters with the following current or potential uses:
    a. That are or could be used by interstate or foreign travelers for recreational or other purposes;
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. That are used or could be used for industrial purposes by industries in interstate commerce.
4. All impoundments of waters otherwise defined as waters of the United States under the definition.

5. Tributaries of waters identified in paragraphs (1) through (4).
6. Territorial seas.
7. Wetlands next to waters identified in paragraphs (1) through (6).
8. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding the Clean Water Act jurisdiction remains with the USEPA (328.3[a][8] added 58 CFR 45035, August 25, 1993).

Clean Water Act, Section 401

Under the CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must obtain certification from the state in which the discharge would originate or from the interstate water pollution control agency with jurisdiction over affected waters. If no federal permit is required, the State Water Resources Control Board regulates activities occurring in or adjacent to waters of the state under the Porter-Cologne Water Quality Control Act.

State

CEQA Guidelines Section 15380

Although Threatened and Endangered species are protected by specific federal and State statues, CEQA Guidelines Section 15380(b) provides that a species not listed by FESA or the California Endangered Species Act (CESA) may be considered rare or endangered if it can be shown to meet certain criteria for rarity. These criteria have been modeled after the definition of FESA and the section of California Fish and Game Code (FGC) discussing rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a species that meets the CEQA criteria, but has not been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species protection.

CEQA Guidelines also identify other locally or regionally significant resources, including natural communities or habitats as sensitive resources. CEQA requires an assessment of such communities and potential project impacts. Natural communities identified by CDFW as sensitive are considered to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

California Department of Fish and Wildlife

The CDFW administers a number of laws and programs designed to protect fish and wildlife resources under FGC, such as CESA (FGC §2050, et seq.), Fully Protected Species (FGC §§3511, 4700, 5050, 5515), Native Plant Protection Act (FGC §§1900–1913), and Lake and Streambed Alteration Agreement Program (FGC §§1600–1616), as well as manages the California Species of Special Concern list.

California Endangered Species Act

In 1984, California implemented its own CESA, which prohibits the take of state-listed Endangered and Threatened species. Habitat destruction is not included in the state's definition of take. Section 2090 requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFW administers the act and authorizes take through California Fish and Game Code Section 2081 agreements (except for designated "Fully Protected Species"). Unlike its federal counterpart, CESA protections apply to candidate species that have been petitioned for listing.

Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (see below).

Fully Protected Species - Fish and Game Code Sections 3511, 4700, 5050, 5515

Fully Protected Species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. The designation of Fully Protected status was the State's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. In 2011, the Natural Community Conservation Planning Act was amended to allow CDFW to authorize incidental take of fully protected species as part of an approved NCCP.

Native Plant Protection Act

FGC Sections 1900 through 1913, also known as the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more cause. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Riparian Communities in California

Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the U.S., riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, leading federal agencies to adopt policies to arrest further loss.

Lake and Streambed Alteration Program

The CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. FGC Section 1602 requires notification of CDFW for lake or stream alteration activities. If, after notification is complete, the CDFW determines that the activity may substantially adversely affect an existing fish and wildlife

resource, the CDFW has authority to issue a Lake and Streambed Alteration Agreement under Section 1603 of the FGC. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These may include avoidance or minimization of heavy equipment use within stream zones, limitations on work periods to avoid impacts to wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Species of Special Concern

CDFW maintains lists for candidate-endangered species and candidate-threatened species. California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or Fully Protected Species, but may be added to official lists in the future. CDFW intends the Species of Special Concern list to be a management tool for consideration in future land use decisions.

Fish and Game Code Sections 3503, 3503.5

FGC Section 3503 provides that is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, and FGC Section 3503.5 provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by state code or any regulation adopted pursuant thereto. Construction activities that result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment and/or reproductive failure are considered a “take” by CDFW. Any loss of eggs, nests, or young, or any activities resulting in nest abandonment would constitute a significant project impact.

State Water Resources Control Board

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board regulates the protection of waters of the state through Section 13050[e] of the California Water Code. Waters of the state are broadly defined by the Porter-Cologne Water Quality Control Act to mean any surface water or groundwater, including saline waters within the boundaries of the state. Under this definition, isolated wetlands that may not be subject to regulations under federal law are considered waters of the state and regulated accordingly. The California Water Boards are in the process of updating the state Wetland Area Protection Policy, which includes a proposed wetland definition.

Regional

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a comprehensive, multi-jurisdictional plan that focuses on conservation of species and their associated habitats in western Riverside County. The MSHCP allows Riverside County and its cities participating in the plan to better control local land use decisions and to maintain a strong economic climate in the region, while addressing the requirements of the CESA and FESA. The MSHCP area encompasses approximately 1.26 million acres in western Riverside

County. The MSHCP serves as a habitat conservation plan pursuant to Section 10(a)(1)(B) of the FESA, as well as a Natural Communities Conservation Plan (NCCP) under the Natural Community Conservation Planning Act of 2001. The MSHCP is used to allow the participating jurisdictions to authorize "take" of plant and wildlife species identified within the plan area. Under the MSHCP, the wildlife agencies (i.e., the USFWS and the CDFW) would grant "Take Authorization" for otherwise lawful actions. SCE is given the option of utilizing the MSHCP as a Participating Special Entity (PSE); see Section 4.4.3, Applicant Proposed Measures, for SCE-proposed measures discussing this.

The MSHCP has 146 "covered species," including 14 narrow endemic plant species. Of the 146 "covered species," 118 species, including 13 of the 14 narrow endemic plant species, are considered "adequately conserved" within the MSHCP. A covered species is considered adequately conserved when a suitable amount of designated "criteria area" (i.e., geographic area, soils, and/or habitat that supports, or has the potential to support, the covered species) has been acquired or designated for acquisition for that species in the MSHCP. For species that are not deemed adequately conserved, additional dedication and/or purchase of conservation land may be required, as determined on a case-by-case basis. A narrow endemic species has a limited geographic distribution (e.g., Santa Rosa Plateau or San Jacinto River Valley), an affinity for a particular soil type (e.g., Domino, Travers, or Willow), and/or is restricted to a specific habitat (e.g., coastal sage scrub or vernal pools). Note that the MSHCP cannot authorize the take of Fully Protected species.

The Mira Loma-Jefferson 66 kV Subtransmission Line alignment spans a portion of MSHCP Existing Core A; however, there are no assembled reserve lands (i.e., Criteria Cells or Cell Groups that present conservation goals in the study area).

Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Project components. Pursuant to CPUC General Order No. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local land use regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project. Local regulations pertaining to tree protection were identified for the cities of Chino, Corona, Norco, and Ontario. The following discussion of local land use policies is provided for informational purposes only.

City of Chino General Plan

Objective OSC-1.1: Protect and enhance habitats that could support rare, endangered, or threatened plant and animal species.

> *Policy P1*: The City shall ensure that new development meets all federal, State, and regional regulations for habitat and species protection.

Policy P2: The City shall protect and enhance riparian habitats along Chino and Cucamonga/Mill Creeks, and the Cypress and Magnolia Channels, as well as their relationship to adjacent water bodies, such as the Santa Ana River (City of Chino, 2010).

Objective OSC-1.2: Locate urban development away from identified sensitive species habitats.

Policy P1: The City shall require detailed biological assessments, including mitigation plans if necessary, prior to approval of all new development projects in areas with a potential to accommodate special status species and/or sensitive habitat (City of Chino, 2010).

City of Corona General Plan

Policy 10.6.1: Implement programs that rehabilitate and enhance the biological value, diversity, and integrity of the City's natural resources through such means as vegetation restoration, control of alien plants and animal species, landscape buffering, and natural watercourse channel restoration.

Policy 10.6.2: Preserve the species and habitats listed in Tables 4.2-1 and 4.2-2 of the Technical Background Report and those that may be considered by the City of Corona in the future.

Policy 10.6.3: Acquire and maintain the most current technical information available regarding the status, location, and condition of significant and sensitive biological species and habitats as well as assessments of potential for impacts on those resources and how such resources should be appropriately protected, conditions sustained, and impacts mitigated from nearby development.

Policy 10.6.5: Preserve the wildlife habitat of significant natural open space areas including expanding habitat ranges, movement corridors, and nesting sites by setting aside lands between open space areas to serve as biological linkages. This network of biological habitat linkages may include the use of riparian corridors, open space dedications, development of parks and/or natural resources, or greenbelts. Any proposed recreational use of those areas such as trails shall be designed to strictly avoid damaging sensitive habitat area.

Policy 10.7.1: Require that construction activities be conducted in a manner to minimize adverse impacts on natural resources through the use of Best Management Practices, as established and updated by the City of Corona.

Policy 10.7.2: Where applications for development are being proposed in undeveloped areas of the City and the SOI areas, or in areas that an Initial Study has determined there is potential for significant adverse impacts to biological resources, and Environmental Impact Report (EIR) or a Mitigated Negative Declaration (MND) shall be undertaken by the proponent. As part of these studies, the proponent shall also submit a Biological Resources Technical Report with the following qualifications:

a) The report must be prepared by a qualified professional who addresses the proposed project's impact on federally and State-listed and candidate plants and animals; California Department of Fish and Game (CDFG) Special Animals; natural communities of high inventory priority with the California Natural Diversity Database (CNDDB); and any other special interest species or communities identified in the General Plan Technical Background Report, or those hereafter named by federal or State trustee agencies.

b) If appropriate habitat for any listed species occurs on the site, a qualified biologist shall conduct focused surveys according to USFWS and/or CDFG protocol.

c) A qualified botanist shall conduct a focused rare plant survey during the appropriate time of year following USFWS and/or CDFG protocol.

d) If any listed species would potentially be impacted by the proposed project, consultation with USFWS and/or CDFG would be required to identify mitigation measures to avoid, minimize, or compensate for impacts. These mitigation measures would be included in the report.

e) The report shall also define a program for monitoring and evaluating the effectiveness of the specified mitigation measures. (Imp 6, 7, 8, 13)

Policy 10.9.1: Review proposed developments in riparian and wetland habitats to evaluate their conformance with the following policies and standards:

- Full consideration of the nature of existing biological resources present and all reasonable measures that shall be taken to avoid significant impacts, including retention of sufficient natural open space and undeveloped buffer zones.
- Development shall be designed and sited to preserve watercourses, riparian habitat, vernal pools, and wetlands in their natural condition, unless these actions result in an infeasible project.
- Where riparian corridors are retained, they shall be protected by an adequate buffer with a minimum 100 feet protection zone from the edge of the tree, shrub, or herb canopy.
- Development shall incorporate habitat linkages (wildlife corridors) to adjacent open spaces, where appropriate.
- Development shall incorporate fences, walls, vegetative cover, or other measures to adequately buffer habitat areas, linkages, or corridors from the built environment.
- Roads and utilities shall be located and designed such that conflicts with biological resources, habitat areas, linkages, or corridors are avoided.
- Development shall utilize appropriate open space or conservation easements in order to protect sensitive species or their habitats.
- Development shall mitigate unavoidable adverse impacts to waters of the United States, wetlands, and riparian habitat by replacement on an in-kind basis (i.e., riparian habitat is to be replaced by riparian habitat of the same type). Replacement shall be based on a ratio determined by the California State Fish and Game Department and/or the Army Corps of Engineers in order to account for the potentially diminished habitat value of replacement habitat. Such replacement shall occur on the original development site, whenever possible. Alternatively, replacement can be effected, subject to State and Federal regulatory approval, by creation or restoration of replacement habitats elsewhere, preferably within Corona's Planning Area. Replacement habitats are to be protected in perpetuity through acquisition, an appropriate conservation easement, or dedication. (Imp 7, 8, 9, 15)

Policy 10.9.2: Prohibit development and grading that alters the biological integrity of riparian corridors, unless no feasible alternative exists or the damaged habitat is replaced with habitat of equivalent value. Development that is permitted with riparian corridors shall be based on field evidence and interpretation of physical and biological data that shall include the following:

- The nature and extent of the vegetation, or in the case of disturbed sites, the potential vegetation;
- Topography; and
- Hydrology.

Policy 10.9.3: Restrict development within riparian corridors to the following uses:

- Education and research, excluding buildings and other structures;
- Passive (nonmotorized) recreation;
- Trails and scenic overlooks on public land(s) if located outside of undeveloped buffer zones;
- Fish, aquatic, and wildlife management activities;
- Necessary water supply projects. Resource consumptive uses as provided for in the Fish and Game Code and Title 14 of the California Administrative Code;
- Flood control projects where no other methods are available to protect the public safety;
- Bridges when supports are not in significant conflict with riparian resources; and
- Underground utilities.

Policy 10.10.5: Conserve the oak tree resources in the City and SOI areas. (Imp 7)

Policy 10.11.1: Protect sensitive biological resources in the MSHCP Temescal Canyon Area Plan through adherence to policies found in the Western Riverside County MSHCP. (Imp 3, 7, 13, 15)

Policy 10.11.2: Conserve existing wetlands and wetland functions and values in Temescal Wash, Prado Basin, and the Santa Ana River with a focus on conservation of existing riparian, woodland, coastal sage scrub, alluvial fan scrub, and open water habitats. An objective of no net loss of wetland functions and values associated with Prado Basin and Temescal Wash is identified for this area.

Policy 10.11.3: Conserve existing known populations of least Bell's vireo and southwestern willow flycatcher within the Temescal Canyon Area Plan including locations at Prado Basin, Santa Ana River, and Temescal Wash. Maintain existing breeding habitat for these species at Prado Basin, Santa Ana River, and Temescal Wash.

Policy 10.11.4: Conserve and manage habitat for the benefit of the Santa Ana sucker, Santa Ana speckled dace, and arroyo chub in the Temescal Canyon Area Plan at Prado Basin and the Santa Ana River, focusing on maintenance of the existing hydrologic regime and maintaining and improving water quality. Maintenance and enhancement of existing wetland and/or open water connections between the Santa Ana River and Temescal Wash may also benefit these species.

Policy 10.11.5: Conserve clay soils supporting sensitive plant species known to occur in the Temescal Canyon area, including Munz's onion, Palmer's grappling hook, small-flowered morning glory, long-spined spineflower, thread-leaved brodiaea, small-flowered microseris, and manystemmed dudleya.

Policy 10.11.6: Conserve sandy soils co-occurring with chaparral supporting Palomar monkeyflower, known to occur in the Temescal Canyon area.

Policy 10.11.7: Conserve locations supporting California muhly, heart-lived pitcher sage, Hall's monardella, and other sensitive plant species that may occur in a wide variety of habitat types within the Temescal Canyon Area Plan.

Policy 10.11.8: Provide for and maintain connection(s) from the Cleveland National Forest to Prado Basin and the Santa Ana River within Temescal Canyon, providing opportunities for offsite connections to Chino Hills State Park.

Policy 10.11.9: Conserve upland habitat adjacent to Temescal Wash to augment existing upland habitat conservation in the Lake Matthews/Estelle Mountain Reserve areas and provide for contiguous connection of upland habitat blocks from the existing reserve to Temescal Wash. Habitat conservation should focus on blocks of existing upland habitat east of Temescal Wash connecting to Lake Matthews/Estelle Mountain Reserve.

Policy 10.11.10: Conserve floodplain areas supporting sensitive plant species known to occur in Temescal Canyon, including Parry's spineflower, peninsular spineflower, and smooth tarplant, and Coulter's matilija poppy.

Policy 10.11.11: Conserve rocky soils co-occurring with coastal sage scrub, peninsular jumper, or chaparral supporting Payson's jewelflower, known to occur in the Temescal Canyon area.

Policy 10.11.12: Provide for and maintain a continuous linkage along Temescal Wash from the southern boundary of the Temescal Canyon area to the Santa Ana River. (City of Corona, 2004)

City of Ontario General Plan

Policy ER5-1: Habitat Conservation Areas. We support the protection of biological resources through the establishment, restoration and conservation of high quality habitat areas.

Policy ER5-2: Entitlement and Permitting Process. We comply with state and federal regulations regarding protected species (City of Ontario, 2016).

4.4.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant biological resources effects on the environment if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (including Lists 1A, 1B, and 2 plant species of the CNPS Inventory);

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS;

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.)

through direct removal, filling, hydrological interruption, or other means; or potential loss and degradation of wetland habitats protected under state regulations;

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, other approved local, regional, or state habitat conservation plan.

CEQA Guidelines Section 15380 provides that a plant or animal species may be treated as "Rare or Endangered" even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future. As species of plants and animals become restricted in range and limited in population numbers, species may become listed or candidates for listing as Endangered or Threatened and become recognized under CEQA as a significant resource. Examples of such species are vernal pool fairy shrimp and burrowing owl; the former is listed by the federal government and the latter is considered a California species of special concern.

In conducting the following impact analysis, three principal components of the CEQA Guidelines outlined above were considered:

- Magnitude of the impact (e.g., substantial/not substantial);
- Uniqueness of the affected resource (i.e., rarity of the resource); and
- Susceptibility of the affected resource to perturbation (i.e., sensitivity of the resource).

The evaluation of the significance of the following impacts considered the interrelationship of these three components. For example, a relatively small magnitude impact to a federal or State-listed species would be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact.

4.4.3 Applicant Proposed Measures

SCE has developed Applicant Proposed Measures (APMs) to reduce potential impacts to biological resources. The impact analysis assumes that the APMs would be implemented (i.e., part of the Project) to reduce impacts to biological resources as discussed below:

APM BIO-01: Implement Biological Monitoring. Biological Monitors would be utilized during Project construction within areas encompassing sensitive biological resources or habitats suitable for any special-status species. The Biological Monitors in coordination with the SCE Lead Biologist would be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and unique resources are avoided to the extent feasible. Biological Monitors would flag the boundaries of areas where activities need to be restricted to protect native plants and wildlife and/or special-status species. These restricted areas would be monitored for their protection during construction. If non-listed sensitive

fauna are found within the impact area and could be harmed, the Biological Monitor would relocate the individual out of the Project impact area. If listed species are found within the impact area, only a biologist with the appropriate permit to handle that species would be allowed to relocate the individual. The Biological Monitor would have the authority to suspend any operation that is, in the qualified biologist's opinion, not consistent with regulations or approved mitigation plans related to the protection of biological resources.

APM BIO-02: Avoid, Minimize, and/or Mitigate Impacts to Special-Status Plant Species. If any special-status plant species are discovered within the impact area, the Project impact boundary would be adjusted to avoid impacts on observed special-status plant species unless the adjustment would impact worker or public safety. If avoidance is not possible, a qualified biologist would prepare and implement a mitigation plan, which would include a detailed description of the appropriateness of the mitigation site, monitoring requirements, and annual reporting requirements. Measures may involve soil salvage, seed collection, and/or transplantation to establish the species in a suitable mitigation site.

Should SCE opt to participate in the Western Riverside County Multi Species Habitat Conservation Plan (MSHCP) for areas within Riverside County and for locations with positive survey results for narrow-endemic plant species, 90 percent of those portions of the property that provide for long-term conservation value would be avoided until it is demonstrated that conservation goals for the particular species are met. If the 90-percent threshold cannot be met, SCE would prepare the mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation (DBESP) document. The Regional Conservation Authority (would request U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on relevant biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and the CDFW. It should also be noted that, assuming all focused plant surveys are current at the time of the Participating Special Entity (PSE) and DBESP review, any MSCHP-covered plant species not observed during surveys, but is observed at a later date prior to or during construction, would not require additional mitigation.

Applicable to: Mira Loma Substation, Corona Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.

APM BIO-03: Avoid, Minimize, and/or Mitigate Impacts to Fairy Shrimp. Impacts to listed fairy shrimp would be avoided to the extent feasible. Habitat areas with listed fairy shrimp would be marked as "off limits" in construction plans and/or maps and in the field.

Should SCE opt to participate in the Western Riverside County MSHCP, pursuant to Section 6.1.2 of the MSHCP and/or if the Project design is determined to impact vernal pool resources, avoidance and minimization measures would be implemented in accordance with the species-specific objectives for Riverside fairy shrimp and vernal pool fairy shrimp. If avoidance is not feasible, an alternative that minimizes direct and indirect effects to vernal pools and associated functions and values would be selected. Those impacts that are unavoidable would be mitigated such that the lost functions and values would be replaced, as set forth under a DBESP. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW. It should also be

noted that, assuming all fairy shrimp surveys are current and have been conducted pursuant to approved protocols at the time of the PSE and DBESP review, any MSHCP-covered fairy shrimp species not observed during surveys, but which are observed at a later date prior to or during construction, would not require additional mitigation.

For areas within San Bernardino County, or if SCE opts out of the MSHCP in Riverside County, SCE would prepare a Habitat Conservation Plan (HCP) and seek take authorization through Section 7 or Section 10 of the FESA for impacts to listed fairy shrimp. Prior to construction, SCE would obtain a Biological Opinion issued from the USFWS authorizing the removal of applicable resources (i.e., listed fairy shrimp habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-04: Avoid, Minimize, and/or Mitigate Impacts to Delhi Sands Flower-Loving Fly. Impacts to DSFF would be avoided to the extent practicable. Should avoidance be infeasible, SCE would seek take authorization through Section 7 or Section 10 of the FESA for impacts to occupied habitat of DSFF in San Bernardino County, or if SCE did not opt to become a PSE in the MSHCP in Riverside County. Prior to construction, SCE would prepare an HCP and seek a Biological Opinion issued from the USFWS that would authorize the removal of applicable resources (i.e., DSFF habitat). It is anticipated that the USFWS Biological Opinion would contain conservation recommendations to avoid or reduce impacts. Should SCE opt to participate in the MSHCP, and if DSFF are found full avoidance through on-site preservation would be preferred. However, should on-site preservation be infeasible, purchase of suitable DSFF habitat at a 3:1 ratio in specifically designated areas could be required by the RCA.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yard at the north end of the study area (portions that encompass Delhi series soils and that would be within the SCE Ontario Recovery Unit).

APM BIO-05: Avoid or Minimize Impacts to Special-Status Fish Species. Should Project work occur within open water (i.e., in the Santa Ana River), impacts to special-status fish species would be avoided to the extent feasible. Should SCE opt to participate in the MSHCP, avoidance/ minimization measures are not specifically required by the MSHCP. Should SCE not opt to participate in the MSHCP, the following avoidance/minimization measures shall be required to ensure that special-status fish species are not present within the construction area:

- Work would be conducted during the dry season when there would be less potential to impact special-status fish species.
- Prior to the initiation of construction activities within the Santa Ana River, barrier nets would be installed upstream and downstream from the work area in open water, allowing sufficient space for construction crews to operate. These nets are intended to exclude fish from the work area.
- Any fish that may appear inside the netted area after the barrier nets are established would be captured and relocated outside the work area by a qualified Biologist.
- Daily monitoring of the nets would be performed to ensure the nets are in-place and free of debris.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-06: Avoid, Minimize, and/or Mitigate Impacts to Least Bell's Vireo. For areas in Riverside County, SCE may choose to mitigate potential impacts to the least Bell's vireo and the western yellow billed cuckoo by participation in the Western Riverside County MSHCP. SCE would prepare a DBESP to cover permanent impacts that would include conservation recommendations for least Bell's vireo and western yellow billed cuckoo pursuant to the MSHCP. The DBESP would also include a discussion of avoidance and minimization of temporary impacts (i.e., exclusion buffers during construction). The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" as well as DBESP approval. For areas within San Bernardino County, or if SCE opts out of the Western Riverside MSHCP, temporary and permanent impacts to least Bell's vireo, western yellow billed cuckoos, and their habitat would be mitigated by obtaining a take permit under the FESA and CESA. The conditions of the take permit would include acreages of disturbance, mitigation ratios for permanent and temporary disturbance, locations for restoration and/or potential mitigation banks for payment. Conservation recommendations may include the following at the discretion of the USFWS:

- In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, SCE would conduct non-protocol preconstruction clearance surveys no more than 7 days prior to construction to determine the location of nests and territories.
- In areas of occupied habitat for the least Bell's vireo and western yellow billed cuckoo, a buffer area around active nest(s) would be established by the SCE biologist and provided to FWS and CDFW for concurrence. The buffer would be established based on construction activities, potential noise levels and behavior of the species.
- Construction activities in occupied habitat for the least Bell's vireo and western yellow billed cuckoo would be monitored by a Qualified Biologist.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-07: Avoid and/or Minimize Impacts to Special-Status Vegetation – Non-Riparian. Impacts to special-status vegetation communities that may support special-status species and provide foraging habitat for sensitive raptors and other bird species would be avoided to the extent feasible. Non-riparian special-status vegetation, which includes Riversidean sage scrub, would be marked as "off limits" in construction plans and/or maps, and flagged prior to construction by a qualified Biological Monitor. If significant impacts to special-status vegetation are unavoidable, mitigation may be necessary depending on the quality of vegetation and the ability to support habitat for special-status species. Should SCE opt to participate in the Western Riverside County MSHCP, impacts to special-status vegetation communities within Riverside County are fully covered through payment of mitigation fees. Should SCE choose to opt out of the MSHCP PSE process, a restoration plan would be prepared in consultation with the USFWS and CDFW. The restoration plan would include, but is not limited to, identification of responsible parties, restoration details and schedule, monitoring and maintenance, and success criteria.

Applicable to: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, Staging Yards, Access Roads, Guard Structures, Stringing Sites.

APM BIO-08: Avoid, Minimize, and/or Mitigate Impacts to Burrowing Owl. Should SCE opt to participate in the MSHCP for areas within Riverside County, then

avoidance/minimization would be preferred. However, if avoidance/minimization would not be possible (i.e., 90 percent of the areas with long-term conservation value were conserved), then a DBESP would be prepared that would include suitable burrowing owl habitat creation and translocation. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval.

For areas within San Bernardino County, a Burrowing Owl Management Plan would be created for the Project. The plan would include information related to construction monitoring, relocation strategy, and exclusionary devices.

- A preconstruction non-protocol burrowing owl survey shall be conducted no more than 14 days prior to commencement of ground disturbing activities with suitable habitat to determine if any occupied burrows are present.
- If occupied burrows are found, adequate buffers would be established around burrows. Adequate buffers would be 160 feet from wintering burrows (i.e., from December 1-January 31) and 250 feet from breeding burrows during the breeding season (i.e., from February 1 to August 31).
- Biological monitors would monitor all construction activities that could potentially impact active burrows.

Applicable to: Mira Loma Substation, Circle City Substation, Mira Loma-Jefferson 66 kV Subtransmission Line Route, staging yards, access roads, guard structures, and stringing sites.

APM BIO-09: Avoid Impacts to Nesting Birds. SCE would conduct pre-construction clearance surveys no more than 7 days prior to construction to determine the location of nesting birds and territories during the nesting bird season (typically February 1 to August 31, or earlier for species such as raptors). An avian biologist would establish a buffer area around active nest(s) and would monitor the effects of construction activities to prevent failure of the active nest. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. Monitoring of construction activities that have the potential to affect active nest(s) would continue until the adjacent construction activities are completed or until the nest is no longer active.

APM BIO-10: Avoid, Minimize, and/or Mitigate Impacts to MSHCP covered Riparian Vegetation/Riverine Habitat. Pursuant to MSHCP Section 6.1.2, impacts to riparian/riverine habitat would be avoided to the extent feasible. In areas where avoidance is not possible, permanent impacts to riparian vegetation, which includes willow riparian forest vegetation and/or riverine habitat would be mitigated to ensure no net loss of habitat. Prior to construction, the limits of grading would be clearly marked around any such habitat.

SCE also would prepare a mitigation plan in the format of a DBESP as part of the PSE review process. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency" and DBESP approval. Subsequent coordination on any biological issues would be handled through consultation with the RCA. The RCA would determine the need for additional consultation with the USFWS and CDFW.

Applicable to: Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-11: Mitigation for Impacts to Jurisdictional Waters. Impacts to potential USACE-, RWQCB-, and CDFW-jurisdictional areas would be avoided to the extent feasible.

These areas would be marked as "off limits" in construction plans and/or maps and in the field. If avoidance is not feasible, permits from the USACE, RWQCB, and CDFW would be obtained for direct and indirect impacts on areas within these agencies' jurisdictions. It is anticipated that the regulatory permit requirements would contain measures to avoid, reduce, and/or mitigate for impacts in their respective jurisdictions. In areas where avoidance is not possible, impacts to jurisdictional waters would be mitigated to ensure no net loss of habitat. SCE would pay into a mitigation bank, pay into an in-lieu fee program, or work with a local RCD to establish appropriate mitigation within the same watershed as the area of impact. On-site restoration back to existing conditions would implemented where possible; however, on-site mitigation with conservation easements and deed restrictions is rarely possible within SCE work easements. Subject to the approval of the resource agencies (i.e., USACE, RWQCB, and CDFW), SCE would submit the required materials and mitigation proposal as part of the regulated waters application processes. SCE would comply with all conditions as set forth in the regulated water permits.

Applicable to: Source Line Route and Mira Loma-Jefferson 66 kV Subtransmission Line Route.

APM BIO-12: Avoid, Minimize, and/or Mitigate Protected Trees. The Project would be designed to avoid protected trees to the extent feasible. Should SCE need to trim, encroach into protected root zone, relocate, or remove any protected trees as identified during pre-construction surveys, a ministerial permit would be required by the local jurisdiction's applicable ministerial tree ordinances. Due to the varying jurisdictions within the survey areas, measures would be implemented depending on the location of the protected trees, as well as conditions stated in each approved ministerial tree permit.

Applicable to: All Project components within the cities of Chino, Corona, Eastvale, Norco, and Ontario, and in unincorporated San Bernardino County.

4.4.4 Impacts and Mitigation Measures

4.4.4.1 Approach to Analysis

This section identifies potential impacts to biological resources from implementation of the Project while Section 4.4.5, *Alternatives*, below, identifies potential impacts associated with the alternatives. For both sections, the impact analysis focuses on foreseeable changes to baseline conditions in the context of the significance criteria presented herein. This analysis includes an evaluation of the potential direct and indirect impacts of the Project and alternatives. Definitions and examples of these effects within the context of biological resources are provided below.

- **Direct Impacts.** Direct impacts are those caused by the project, occurring at the same time and place (CEQA Guidelines §15358). Examples of these types of impacts on biological resources include incidental take during construction and habitat removal.

- **Indirect Impacts.** Indirect impacts are those caused by the project, occurring later in time or farther removed in distance, but still reasonably foreseeable (CEQA Guidelines §15358). Examples of these types of impacts on biological resources include the discharge of sediment or chemicals that adversely affect water quality downstream of the project site, and an increase in human activity during project operations.

The Project has the potential for direct and indirect impacts on biological resources. These potential impacts include disturbance of special-status plant and wildlife species and their natural habitats during construction and operation. The impact analysis assumes that protective measures identified by the applicant would be implemented to avoid or minimize environmental impacts. Where needed, additional mitigation measures are proposed to reduce potential impacts to a less-than-significant level.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (including California Rare Plant Ranks 1A, 1B, and 2 plant species.

Construction

Impact 4.4-1: Construction activities would result in adverse impacts to special-status plants, if present. *Less than significant with mitigation* (Class II)

Protocol-level rare plant surveys completed in 2013 for the proposed subtransmission lines identified no special-status plants or MSHCP narrow endemic plant species plants (SCE, 2015). The Chambers Group botanical survey report, which was comprehensive for the Project, found that no further rare plant surveys are required or warranted in the subtransmission line route. Focused botanical surveys have not been completed at the Mira Loma Substation, Corona Substation, Circle City Substation site, staging yards, access roads, guard structures, or stringing sites. In areas that have not been surveyed for special-status plants where a low to moderate potential for occurrence is identified (e.g., see PEA *Biological Technical Report*, SCE, 2015; Attachment 4.4-C, Table 9, pages 34 to 37), there is a moderate potential that several rare plant species may be encountered and impacted by the Project based on the availability of potentially suitable habitat.

SCE has committed to implementing APMs BIO-01 and BIO-02, which would avoid and/or reduce potential impacts to special-status plants within the Project area should any be encountered. APM BIO-01 requires biological monitoring in biologically sensitive areas and APM BIO-02 requires avoidance and minimization of impacts to special-status plants. Implementation of these APMs in conjunction with Worker Environmental Awareness Training (WEAP) discussed in Section 2.8, would further ensure that any potential impacts to special-status plants would be less than significant.

Special-status plants are not known to occur at the substations, staging yards, or other portions of the Project site; however, the extent of potential rare plant impacts cannot be known without focused botanical surveys, which are not provided by the APMs. Thus, if special-status plants are present in these portions of the Project site but not known to be present, APMs BIO-01 and BIO-02 and the WEAP may not be applied to such plants and resulting Project impacts would be significant. The implementation of Mitigation Measures 4.4-1a and 4.4-1b, which require surveys for special-status plants and the implementation of appropriate avoidance measures, would reduce the impact to a less-than-significant level (Class II).

Mitigation Measure 4.4-1a: In portions of the alignments and work areas that have not been surveyed for special-status plants, SCE and/or its contractors shall complete focused plant surveys following CDFW and USFWS special-status plant survey guidelines. Surveys shall document the location, extent, and size of rare plant populations in the study area for each project component, and shall be used to inform the planned avoidance of special-status plant populations whenever possible.

Based on focused plant survey findings, to the extent feasible, the final project design shall minimize impacts on known special-status plant populations within and adjacent to the construction footprints, with complete avoidance of any federal or State-listed plant species. SCE and/or its contractors shall design facilities to avoid sensitive plant populations whenever possible, shall install exclusion fencing around sensitive plant populations with as large a buffer as possible to minimize the potential for direct and indirect impacts.

Mitigation Measure 4.4-1b: To supplement special-status plant protection actions provided by APM BIO-02 in areas where avoidance of non-listed plant species is not feasible or not covered under the MSHCP, SCE and/or its contractors shall compensate for the loss through plant salvage and replanting, as follows:

A qualified ecologist shall develop a Restoration and Mitigation Plan according to CDFW guidelines and in coordination with CDFW. At minimum, the plan shall include collection of complete plants or reproductive structures (as appropriate) from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, proposed restoration techniques for temporarily disturbed occurrences, an assessment of potential transplant and enhancement sites, a description of performance criteria (e.g., establishment of a comparably-sized plant population; 80 percent survival after 5 years), and a monitoring program of sufficient duration (e.g., 5 years) to follow the progress of transplanted or seeded individuals, and contingency measures to be implemented in the event that the project does not achieve the year 5 success criteria. If impacts to rare plants are covered under the MSHCP, with SCE participation, then this measure would not apply.

Significance after Mitigation: Less than Significant.

Impact 4.4-2: Construction activities would result in adverse impacts to special-status reptiles and amphibians, if present. *Less than significant with mitigation* (Class II)

Four special-status reptiles and one special-status amphibian have potential to occur in the Project area based on known ranges and potential habitat. Western pond turtle, two-striped garter snake, south coast garter snake, and western spadefoot are strongly associated with aquatic features and may occur in association with the Santa Ana River, drainages, impoundments, and creeks within the Project area. Coast horned lizard may occur in sage scrub, chaparral, and grassland habitats throughout the Project area. Construction activities near suitable habitats have small areas of impact effect and the majority of habitat impacts to potential habitat for these species would be temporary. Construction activities have the potential to cause injury or mortality to special-status reptiles and amphibians including western pond turtle, coast horned lizard, two-striped garter snake, south coast garter snake, and western spadefoot. Implementation of the proposed WEAP

and APM BIO-01 would reduce impacts to these species by allowing their identification and relocation prior to and during construction activities. However, implementation of Mitigation Measure 4.4-2 would ensure that significant impacts are reduced to a less-than-significant level by requiring preconstruction surveys for these species within 24 hours of initial ground disturbance.

> **Mitigation Measure 4.4-2:** Within areas that provide potentially suitable habitat for special-status amphibians and reptiles, SCE and/or its contractors shall have a qualified wildlife biologist perform preconstruction surveys no more than 24 hours prior to initial ground disturbance to identify the potential presence of western pond turtle, coast horned lizard, silvery legless lizard, two-striped garter snake, south coast garter snake, and western spadefoot. If any of these species are identified during surveys within the immediate construction area footprint, individuals shall be relocated from work areas by an individual who is authorized by CDFW to undertake species relocation. A suitable relocation area shall be identified and a qualified biologist with appropriate CDFW approvals shall relocate animals from the work area.
>
> **Significance after Mitigation:** Less than Significant.

Impact 4.4-3: Construction activities would result in adverse impacts to Riverside fairy shrimp and vernal pool fairy shrimp, if present. *Less than significant with mitigation* (Class II)

Habitat assessments and focused protocol surveys for listed fairy shrimp have been conducted for the entire Project study area. The 2010/2011, 2011/2012, 2012/2013, and 2014/2015 wet season surveys did not detect special-status fairy shrimp species, indicating their likely absence in the Project study area. The USFWS considers protocol-level fairy shrimp survey findings to generally be valid for a period of 2 years, and it possible that a listed fairy shrimp species could be introduced into pools in the Project area (e.g., by foraging birds). Additionally, in May 2015, the USFWS revised the survey protocol for large branchiopods (USFWS, 2015). The fairy shrimp surveys for the Project conducted prior to guideline revisions followed the USFWS 1996 survey guidelines, which allowed for two consecutive wet season surveys over 5 years. The revised guidelines recommend at least one wet season and one dry season survey over a 3-year period to establish the absence of special-status vernal pool branchiopods. It is anticipated that the USFWS may accept the finding of 4 consecutive years of negative wet season surveys as sufficient evidence for the absence of listed fairy shrimp. SCE has committed to implementation of APMs BIO-01 and BIO-03, which would avoid and/or reduce potential impacts to listed fairy shrimp in the Project area. As previously described, APM BIO-01 would require biological monitoring in areas where sensitive biological resources or habitats suitable to any special-status species are located. APM BIO-03 would provide for avoidance and minimization of impacts to listed fairy shrimp if detected within the Project area. However, because APM BIO-03 does not include language on conducting protocol-level surveys and does not indicate full avoidance of listed fairy shrimp species, and prior surveys may have missed fairy shrimp detection due to low rainfall conditions, it is possible that listed fairy shrimp could be present in isolated locations and would be impacted by the Project, resulting in a significant impact.

With the implementation of Mitigation Measures 4.4-3a and 4.4-3b, which rely upon the USFWS determination of whether or not current surveys are adequate to state species absence, and the related need to compensate for direct impacts to fairy shrimp, impacts to special-status fairy shrimp species would be reduced to a less-than-significant level.

Mitigation Measure 4.4-3a: If the USFWS accepts the current negative survey findings for special-status fairy shrimp in the Project area under the prior survey protocol, no further action is needed. Otherwise, within areas that provide potentially suitable vernal pool habitat for special-status fairy shrimp, vernal pool surveys in accordance with the revised USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS, 2015) shall be conducted. Portions of the Project sites fall within the Survey Zone C for listed large branchiopods. The revised protocol requires one wet season and one dry season survey over a three-year period and is summarized as follows:

Wet Season Survey for Survey Zone C

- All potential habitats must be adequately sampled at 7-day intervals after initial inundation of habitat.
- Sampling will continue within each potential habitat until it dries or a minimum of 120 consecutive days of inundation has occurred.
- Sampling will be reinitiated within 7 days of an individual habitat drying and inundating during the same wet season.
- A single wet season survey may be considered unreliable at any location if moderate to extreme drought conditions persist through the wet season as determined by the National Oceanic and Atmospheric Administration (NOAA) records of the Palmer drought indices.
- In order to increase the probability of detection of all possible co-occurring species, USFWS may request one subsequent complete wet season sampling survey be conducted to complete survey requirements. This would likely be required if the dry season survey results indicated branchiopods were present where a previous wet season survey found no branchiopods.

Dry Season Survey

- Dry season soil/substrate sampling shall not be conducted at any Project site unless SCE receives prior authorization from the USFWS.
- Soil (substrate) shall be collected when it is dry to avoid damaging or destroying listed large branchiopod eggs (also known as cysts or resting eggs) and other special-status vernal pool species.
- The number of soil/substrate samples and the amount of soil/substrate collected per feature shall be proportional to the size of the feature.
- Soil/Substrate shall be collected mainly from the lowest topographic areas within the feature sampled.

If listed branchiopods are detected, USFWS shall be notified within 10 working days. Upon completion of protocol surveys the permittee shall submit a report no more than 90 days after the last wet season field visit or after completion of analysis of dry season samples to USFWS.

Mitigation Measure 4.4-3b: If vernal pool fairy shrimp or Riverside fairy shrimp are identified in the Project area and impacts to occupied pools cannot be avoided, SCE shall mitigate for impacts to vernal pool fairy shrimp habitat and comply with the requirements of the FESA through one or more of the following steps to provide compensatory habitat: (a) participation in the MSHCP to obtain take coverage for identified species, (b) salvage of cysts and creation of replacement pool habitat in the local area at a replacement ratio of at least 3:1, (c) restoration of affected pools onsite after the completion of construction, or (d) acquisition of credits from an approved mitigation bank within the Project region.

If occupied habitat for the above species is encountered at a Project site, to mitigate for temporary or permanent loss of aquatic sites, SCE shall implement the following measures:

Habitat Compensation or Restoration

- SCE shall mitigate for the loss of branchiopod habitat that will be filled or otherwise directly affected by the project by providing compensatory habitat; or,
- SCE shall develop and implement a mitigation, monitoring, and management plan, with input from regulatory agencies that shall outline long-term management strategies and performance standards to be attained to compensate for habitat losses resulting from the project. At a minimum, the plan shall include standards for mitigation site selection and construction specifications for mitigation sites, a description of site conditions including aerial maps, an analysis of local branchiopod habitat, and performance criteria by which site quality can be assessed over time (e.g., size, vegetation species present, date of initial ponding, ponding duration, and wildlife usage). A monitoring program will be established to track the development of habitat conditions that are conducive to the establishment of vernal pool branchiopods.
- To the greatest practicable extent, SCE or its contractors shall construct compensation habitat (i.e., replacement pools) before habitat disturbances are incurred; or directly within the project footprint after construction. A qualified biologist shall ensure that ponds are functioning as designed.

Species Protection During Construction

- SCE shall submit the name and credentials of a biologist qualified to act as construction monitor to USFWS for approval at least 15 days before construction work begins.
- If restoration is proposed to compensate for habitat loss, w~~W~~ith concurrence from the USFWS, a USFWS-approved biologist shall salvage soils from sites that are known to support vernal pool branchiopods at least 2 weeks before the onset of construction, or during the preceding dry season if pools are anticipated to hold water when construction begins. The salvaged soil samples will be stored and used to inoculate created pools once minimum performance standards are met at these locations.
- A USFWS-approved biologist shall be present at each active work site within 0.5-mile of potential fairy shrimp habitat until habitat disturbance has been completed. Thereafter, the contractor or SCE shall designate a person to monitor onsite compliance with all minimization measures. A USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements.

- A USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of fairy shrimp and their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve fairy shrimp as they relate to the project, and the boundaries within which the project construction shall occur.
- All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any fairy shrimp habitat.

Significance after Mitigation: Less than Significant.

Delhi sands flower-loving fly (No Impact)

Focused surveys for DSFF were conducted in 2010 and 2011 for some portions of the Project area and in 2012, 2013, and 2014 for all the Project sites and alignments, as well as the alternative sites and alignments, within potential habitat. This species was not observed during the focused surveys; therefore, construction activities associated with the Project would not impact DSFF.

Nonetheless, SCE has committed to implement APMs BIO-01 and BIO-04 within DSFF habitat. As previously described, APM BIO-01 would require general biological monitoring and APM BIO-04 would provide for avoidance and minimization of impacts to DSFF if it is identified in or near the study area. However, because this species is not known from the Project site, no impacts would occur to DSFF.

Impact 4.4-4: Construction activities would result in adverse impacts to special-status fish, if present. *Less than significant with mitigation* (Class II)

The Project design would not directly impact open water in the Prado Flood Control Basin; however, the active channel seasonally provides potentially suitable habitat for special-status fish species between the proposed hybrid H-frame pole locations on the Mira Loma-Jefferson subtransmission line. The existing H-frames that are proposed for removal are located on the river bank. There is a minimal potential for fish species to be impacted, depending on the water levels at the time of Project construction and pole removal. If water is present in the Santa Ana River and the potential exists for Santa Ana sucker or other special-status fish to be present in the work area, these species or their habitat could be subject to significant impacts related to changes in water quality.

SCE would implement APMs BIO-01, BIO-05, BIO-10, and BIO-11 to further reduce impacts to special-status fish species. As previously described, APM BIO-01 would require biological monitoring, APM BIO-05 would provide for avoidance or minimization of impacts to special-status fish species, APM BIO-10 addresses impacts to riparian/riverine habitat, and APM BIO-11 addresses impacts to jurisdictional waters. In addition, indirect impacts to water quality would be addressed by implementation of best management practices (BMPs) and adherence to the Construction General Permit and Storm Water Pollution Prevention Plan (see Section 4.10,

Hydrology and Water Quality, Impact 4.10-1, which considers water quality standards). If construction activities do not require work within open water in the Santa Ana River or occupied Santa Ana sucker habitat, the implementation of APMs described above would reduce impacts to less than significant without the need for mitigation. The Santa Ana River in the Project area is designated critical habitat for Santa Ana sucker and is within the Western Riverside County MSHCP planning area. Because the above APMs do not prohibit work in the presence of Santa Ana sucker or establish a means to fully avoid impacts to this species should SCE not opt to participate in the MSHCP, the APMs alone would not reduce potential impacts to special-status fish to less than significant.

If SCE pursues PSE status pursuant to the MSHCP, impacts on designated critical habitat would be addressed by participation in the MSHCP. If SCE participates in the MSHCP, applicable fish protection measures that would reduce impacts to less than significant may be similar to those identified in Mitigation Measure 4.4-4. If SCE does not participate in the MSHCP, additional coordination with the USFWS, as detailed in Mitigation Measure 4.4-4, would be required.

The implementation of Mitigation Measure 4.4-4, which, should there be in-water work, requires surveys for special-status fish and the implementation of appropriate avoidance measures, would reduce the potential impact to a less-than-significant level. In addition, as discussed under Impact 4.10-1, SCE would implement SWPPP BMPs at Project construction sites, including at the Santa Ana River, that would serve to reduce the amount of sediment contributed to surface waters.

Mitigation 4.4-4: This measure shall apply if SCE does not participate in the MSHCP. SCE shall coordinate with the USFWS to ensure that earthwork in the Santa Ana River corridor either: 1) does not impact the Santa Ana sucker or habitat for this species, or; 2) any Santa Ana sucker relocation or habitat modification that may affect this species is performed with advance USFWS knowledge and approval. In addition, SCE shall implement the following measures:

- A qualified biologist who holds the appropriate Section 10(a)(1)(A) permit shall survey for Santa Ana sucker following the USFWS protocol within 14 days prior to in-water work to determine the potential presence of this species. Surveys shall also include presence/absence determinations for arroyo chub and Santa Ana Speckled dace.
- A qualified biologist shall supervise the installation of barrier nets to be installed in open water upstream and downstream from the work area. The qualified biologist shall check the integrity of barrier nets daily to ensure there are no gaps that may allow fish passage into the work area.
- The relocation of Santa Ana suckers from within isolated aquatic work areas shall only be performed by a USFWS-approved biologist(s). Work shall not proceed until a qualified biologist has confirmed that special-status fish are not present within the isolated work area.

Significance after Mitigation: Less than Significant.

Impact 4.4-5: Construction activities would result in adverse impacts to least Bell's vireo, Southwestern willow flycatcher, yellow-billed cuckoo, and their habitats. *Less than significant with mitigation* (Class II)

Focused surveys for least Bell's vireo were conducted in 2010, 2011, 2012, and 2016. Least Bell's vireos have been observed during all years of focused surveys for the Project area. The highest detection occurred in 2016 with 24 individuals/pairs recorded. Least Bell's vireo was also detected in the small riparian habitat adjacent to Hellman Avenue at Mill Creek.

In 2011 and 2012, focused surveys were conducted for southwestern willow flycatcher concurrently with least Bell's vireo surveys. Southwestern willow flycatchers were not detected during these surveys nor observed during other previous surveys (2010 least Bell's vireo survey) or field visits. In 2016, three migrant southwestern willow flycatchers were observed within the Santa Ana River corridor during the migration season but were not observed subsequently during late season surveys to indicate breeding occupancy. Although breeding southwestern willow flycatchers were not detected during focused surveys, the Prado Basin provides suitable habitat for this riparian bird and there remains potential for the occasional breeding pair to occupy the area.

Focused surveys for yellow-billed cuckoo for the Project area in suitable riparian habitats occurred in spring and summer 2016. This species was not detected during focused surveys nor has it been incidentally detected during field visits or other species' surveys. Yellow-billed cuckoo detection is difficult without focused call surveys and since only one year of focused surveys have been completed, there remains potential for this species to occur within riparian habitats in the Prado Basin.

Construction of the Project would result in the permanent loss of approximately 0.28 acre, and the temporary loss of approximately 2.39 acres, of moderate- to high-quality riparian habitat for least Bell's vireo and western yellow-billed cuckoo. Any impact to least Bell's vireo or western yellow-billed cuckoo, whether directly (e.g., direct mortality) or through habitat modifications, would be considered a significant impact.

The Project area overlaps designated critical habitat for the least Bell's vireo and proposed critical habitat for western yellow-billed cuckoo in both Riverside County and San Bernardino County. Construction in San Bernardino County would occur within developed roadways along Hellman Avenue and not within suitable habitat for least Bell's vireo or western yellow-billed cuckoo. Impacts to critical habitat within San Bernardino County are unlikely since the Project alignments avoid riparian vegetation, and poles and other structures are placed within developed areas. However, if placement of structures causes the loss or modification of habitat with critical habitat features, coordination with the USFWS may be required. Construction that is either adjacent to or in critical habitat in the Prado Flood Control Basin in Riverside County would consist of new LWS poles, hybrid H-frames, and conductor pulling sites. Construction and removal of these structures would occur within the Santa Ana River corridor, in suitable habitat for least Bell's vireo and western yellow-billed cuckoo.

Should there be any encroachment into, or Project effects on critical habitat in Riverside County, SCE would implement APMs to reduce impacts. SCE would implement APMs BIO-01 and BIO-06

to ensure impacts to least Bell's vireo and yellow-billed cuckoo are less than significant and would implement of APM BIO-10 addresses the loss of riparian/riverine habitat suitable for listed riparian birds. APM BIO-06 would provide for avoidance and minimization of impacts to least Bell's vireo and western yellow-billed cuckoo through either participation in the MSHCP or obtaining take authorization from USFWS and CDFW. Conditions of take authorization may include, but not be limited to, preconstruction surveys, nest buffers, biological monitoring, and compensation.

During 2016 focused riparian bird surveys, three migrant southwestern willow flycatchers were observed within the Project area that could potentially breed in suitable riparian habitat during Project activities (Environmental Intelligence, 2016). Implementation of APMs BIO-1, BIO-06, and BIO-10 would ensure that impacts to least Bell's vireo and yellow-billed cuckoo riparian birds would be less than significant.

However, APM BIO-06 does not address southwestern willow flycatcher specifically. Due to similarity of habitat use, breeding behavior, and potential Project impacts of least Bell's vireo and western yellow-billed cuckoo, implementation of APM BIO-06, along with APMs BIO-01 and BIO-10, would also ensure impacts to southwestern willow flycatcher would be less than significant (Class II). Therefore, Mitigation Measure 4.4-5a calls for the inclusion of southwestern willow flycatcher in the implementation of APM BIO-06. Mitigation Measure 4.4-5b describes measures that would be implemented to avoid impacts to these species, and Mitigation Measure 4.4-5c addresses the restoration of affected habitat. With the implementation of these measures, potential impacts to least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo, and their habitats would be reduced to a less-than-significant level.

Mitigation Measure 4.4-5a: APM BIO-06 shall also be applied to protect southwestern willow flycatcher should this species be encountered during pre-construction surveys or Project activities.

Mitigation Measure 4.4-5b: Should SCE not opt to participate in the MSHCP, the following additional measures shall be followed to avoid, minimize, and/or mitigate impacts to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo and their habitat:

- If USFWS/CDFW protocol-level surveys document the presence of least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo within active work areas or areas within 500 feet, impacts to these species would be mitigated to less than significant if occupied riparian forest is avoided and construction within 500 feet of occupied habitat occurs only between September 15 and March 15.
- Occupied and potentially occupied habitat for least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo shall be avoided to the extent feasible. If complete avoidance of occupied or potentially occupied habitat is not feasible, additional or alternative measures to avoid or minimize adverse project effects to least Bell's vireo, southwestern willow flycatcher, and/or yellow-billed cuckoo may be required by the USFWS and CDFW. However, if the above measures cannot be implemented such that "take" of these species is fully avoided, authorization shall be obtained from the USFWS and CDFW prior to initiating work within 500 feet of occupied habitat. Such measures may include habitat restoration requirements, as described in Mitigation Measure 4.4-5c.

Mitigation Measure 4.4-5c: As identified in APMs BIO-06 and BIO-10, SCE has committed to prepare a riparian mitigation plan in the format of a Determination of Biologically Equivalent of Superior Preservation report (DBESP report) as part of the Participating Special Entity (PSE) review process under the MSHCP. SCE shall implement this plan to restore impacted habitat values for the least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo in the Santa Ana River corridor. The RCA would request USFWS and CDFW concurrence with the MSHCP "findings of consistency."

The DBESP report guidelines are highly specific regarding the magnitude of anticipated impacts and restoration requirements, some of which include:

- Quantification of unavoidable impacts to riparian/riverine areas associated with the project, including direct and indirect effects.
- Functions and values assessment focusing on how they will affect downstream values related to Conserved Species.
- Habitat assessments for least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo. If the site supports suitable habitat, focused surveys will also be required.
- A written description of project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through restoration or enhancement.
- A description of mitigation measures to ensure long-term conservation through deed restriction, conservation easement or other appropriate mechanism.
- Restoration measures shall consider:
    a) Restoration and/or enhancement of on-site habitat;
    b) Restoration and/or enhancement of off-site habitat;
    c) Habitat that is restored or enhanced will be able to provide biological, hydrological, and biogeochemical functions to a level consistent with those being lost on-site; and
    d) Upon reaching maturity and satisfying the criteria established for mitigation areas, the goals for restoration shall include:
        i. All habitat mitigation areas will be self-sustaining in perpetuity and contribute to regional biodiversity
        ii. All habitat mitigation will not require outside input for recruitment and propagation of plant species
        iii. Nutrients will be cycled within the mitigation areas through natural processes
        iv. The entire range of biological components, processes, and interactions will be present in each community; and
        v. Natural processes of ecological succession will be allowed to occur.

Significance after Mitigation: Less than Significant.

Impact 4.4-6: Construction activities would result in adverse impacts to burrowing owl. *Less than significant* (Class III)

Burrowing owls have been observed in the Project area during focused surveys and incidentally during field site visits. Suitable habitat occurs throughout the Project area. There are currently two regulatory frameworks for addressing effects on burrowing owl, including: species-specific objectives provided in the Western Riverside County MSHCP, and the CDFW's Staff Report on Burrowing Owl Mitigation. The burrowing owls observed in the study area were all located in San Bernardino County; therefore, the CDFW's guidelines are applicable.

For areas in San Bernardino County, the implementation of the WEAP, and APMs BIO-01 and BIO-08, which provide for a preconstruction non-protocol burrowing owl survey consistent with the most recent CDFW survey requirements, preparation of a Burrowing Owl Management Plan, and the implementation of buffer areas and biological monitoring if occupied burrows are found, would ensure that impacts to burrowing owl would be less than significant and no mitigation would be required.

For areas in Riverside County, should SCE opt to participate in the MSHCP, then its protective provisions would be applied to reduce burrowing owl impacts to less than significant and no mitigation would be required. If SCE does not participate in the MSHCP and burrowing owls are identified in the Riverside County project area, then the SCE shall apply the WEAP, and APMs BIO-01 and BIO-08, to minimize impacts to burrowing owl, as described for areas in San Bernardino County.

Mitigation: None required.

Impact 4.4-7: Construction activities would result in adverse impacts to nesting birds and raptors protected under MBTA, BGEPA, and Fish and Game Code. *Less than significant* (Class III)

Construction activities associated with the Project, such as grading, installation/removal of subtransmission line poles, trenching, and substation construction could disturb nesting birds and cause nest site abandonment and/or reproductive failure through an increase in noise, human presence, and/or removal of habitat. The Project alignments cross multiple habitat types that could support nesting for a variety of birds protected under state and federal regulations. Several special-status birds were observed during field visits and other species' surveys, including yellow-breasted chat, yellow warbler, Vaux's swift, and loggerhead shrike as well as numerous common bird species.

Impacts from Project activities could cause nest abandonment, death of young, or loss of reproductive potential at active nests located near the Project sites. However, implementation of APMs BIO-01 and BIO-09 would avoid potential significant impacts to protected nesting birds and raptors. APM BIO-09 stipulates that pre-construction surveys be conducted and if active

nests are found, establishment of buffers and monitoring would be required to prevent failure of nests. The impact would be less than significant.

Mitigation: None required.

Operation and Maintenance

Impact 4.4-8: Installation of power lines and poles would result in collisions and/or electrocution of birds, especially raptors. *Less than significant* (Class III)

Existing poles and power lines that would be replaced under the Project currently pose a risk to raptors as a result of electrocution and collision hazards. Several poles were designed and installed prior to understanding of power line related hazards to wildlife and requirements for reducing risks through innovative design. Electrocution and collisions with power lines are recognized sources of raptor mortality. Power line electrocution is the result of two interacting factors: raptor behavior and pole design. Raptors are opportunistically attracted to power lines because they provide perch sites for hunting, resting, feeding, territorial defense, or as nesting structures. Previous designs of electrical industry hardware place conductors and ground wires close enough together that raptors can touch them simultaneously with their wings or other body parts, causing electrocution. Raptors and other birds may also collide with power lines, which can be difficult for birds to detect for various reasons such as during night flight or during inclement weather conditions. The type and magnitude of such impacts, and strategies to avoid conflicts between birds and new transmission lines have been well described by the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC). The APLIC has produced *Reducing Avian Collisions with Power Lines: The State of the Art 2012* and *Suggested Practices for Avian Protection on Power Lines: The State of the Art in* 2006 (APLIC, 2012; 2006). SCE now designs power poles and power lines to comply with APLIC "avian-safe" standards. Replacing standard design power poles and lines with APLIC-compliant structures would reduce potential for bird electrocution and collision hazards and result in beneficial effects for bird species, including raptors, relative to existing conditions.

Mitigation: None required.

---

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS.

Impact 4.4-9: Construction activities would temporarily result in adverse impacts to sensitive natural communities, such as willow riparian forest, coastal sage scrub, and grassland. *Less than significant with mitigation* (Class II)

CDFW considers willow riparian forest a special-status vegetation type due to its ability to support special-status species and its decline in the region. Least Bell's vireo, yellow-billed

cuckoo, and southwestern willow flycatcher utilize riparian habitats for breeding. The Project may temporarily impact approximately 2.4 acres of willow riparian habitat and permanently impact approximately 0.3 acres in the Prado Basin (**Table 4.4-5**). Riparian habitat is mapped on Figures 4.4-2 through 4.4-5.

TABLE 4.4-5
IMPACTS TO SENSITIVE VEGETATION COMMUNITIES

Vegetation Communities	Approximate Impacts (acres)		
	Permanent	Temporary	Total
Disturbed Mule Fat Scrub	--	--	--
Disturbed Riversidean Sage Scrub	--	--	--
Riversidean Sage Scrub	--	0.11	0.11
Willow Riparian Forest	0.28	2.39	2.67
Total	**0.28**	**2.50**	**2.78**

SOURCE: SCE, 2015

Coastal sage scrub, of which Riversidean sage scrub is a xeric (i.e., dry) sub-association, is included in the Western Riverside County MSHCP. The sensitive upland communities identified in the Western Riverside MSHCP include chaparral, coastal sage scrub, desert scrub, grassland, and Riversidean alluvial fan sage scrub. Riversidean sage scrub and disturbed Riversidean sage scrub within the study area are depicted on Figure 4.4-5 in the southern portion of the Project area.

Construction activities could temporarily impact sensitive natural communities in the Project area through earthwork, including vegetation clearing, grading, and trenching, and could be trampled at staging areas and access roads.

Sensitive natural communities are covered in the Western Riverside MSHCP. APM BIO-07 commits SCE to address impacts to sensitive non-riparian habitat, either through participation in the MSHCP or through implementation of a restoration plan prepared in consultation with USFWS and CDFW, while APM BIO-10 commits SCE to address impacts to riparian vegetation and riverine habitat. As discussed in Mitigation Measure 4.4-5c, SCE has committed to prepare a riparian mitigation plan in the format of a DBESP document as part of the PSE review process under the MSHCP. With the application of APMs BIO-07 and BIO-10 to reduce impacts to sensitive natural communities, including riparian habitat, and implementation of Mitigation Measure 4.4-5c, impacts to riparian habitat or other sensitive natural community would be reduced to a less-than-significant level. Mitigation Measure 4.4-9a addresses potential impacts to non-riparian special-status vegetation and Mitigation Measure 4.4-9b addresses potential impacts to riparian habitat. With the implementation of these measures, impacts to riparian habitat and other sensitive natural communities would be less-than-significant. (Class II).

Mitigation: Implement Mitigation Measure 4.4-5c.

Mitigation Measure 4.4-9a: Should SCE opt to participate in the MSHCP, a~~A~~pply Restoration Planning Methodology identified in Mitigation Measure 4.4-5c to Non-riparian Special-status Vegetation that is not fully covered in the MSHCP~~, which includes Riversidean Sage Scrub~~.

Mitigation Measure 4.4-9b: To mitigate impacts to riparian habitat, SCE shall prepare a project-wide 1602 Lake and Streambed Alteration Agreement (LSAA) in accordance with CDFW requirements. SCE shall include mitigation measures that are sufficient to reduce direct and indirect impacts to willow riparian forest habitat to less than significant. The LSAA may include some or all of the following:

- Avoid impacts to riparian habitat where possible by shifting staging areas or adjusting construction timing;
- Minimize impacts;
- Remove invasive riparian species;
- Purchase off-site habitat credits;
- Create and/or restore natural communities and prepare a monitoring and maintenance plan for these areas (consistent with methodology discussed in Mitigation Measure 4.4-5b);
- Situate staging areas as far away from sensitive habitats as is feasible;
- Limit construction activity to daylight hours to minimize potential impacts related to artificial lighting; and
- Require the presence of a qualified biological monitor during all construction activities that are within or near sensitive habitats and areas that have been identified to host least Bell's vireo, southwestern willow flycatcher, or yellow-billed cuckoo.

Significance after Mitigation: Less than Significant.

---

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

Impact 4.4-10: Construction activities would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the federal CWA, and the potential loss and degradation of wetland habitats protected under state regulations. *Less than significant with mitigation* (Class II)

A wetland delineation for the Project was conducted in 2012 and updated in 2015. The 2015 delineation identified approximately 15.5 acres of potential USACE-jurisdictional waters of the U.S. and approximately 21.5 acres of CDFW-jurisdictional waters in the Project area. Of these, approximately 5.4 acres of waters of the U.S. would be impacted through Project activities with 4.9 acres being temporarily impacted. Approximately 6.1 acres of CDFW jurisdictional waters would be impacted with 5.6 acres being temporarily impacted.

If the USACE, CDFW, or RWQCB find that some or all of the features identified in the updated 2015 wetland delineation fall within their jurisdictional purview, then temporary and permanent impacts to wetlands and/or waters of the U.S. or state could result from construction and must be compensated to result in "no net loss" of wetlands. In order to reduce impacts to jurisdictional wetlands and waters, SCE is committed to implementing APM BIO-11, which requires avoidance of jurisdictional waters to the extent feasible, or compliance with federal and state permit requirements pertaining to impacts to wetlands and other waters of the state that cannot be avoided. Implementation of APM BIO-11 would reduce impacts to jurisdictional waters of the U.S. and waters of the state. Additionally, the application of APM BIO-07 would restore riparian habitat.

Because the above APMs do not establish sufficient success criteria by which to gauge the restoration of mitigation wetlands, the APMs alone would not reduce impacts to jurisdictional waters of the U.S. and waters of the state to less than significant. Mitigation Measure 4.4-5c provides these elements and would further reduce impacts to riparian habitat and adjacent waters to a less-than-significant level.

> **Mitigation:** Implement Mitigation Measure 4.4-5c, Sensitive Habitat Restoration, to the Restoration of Jurisdictional Waters of the U.S., including Wetlands.
>
> **Significance after Mitigation:** Less than Significant.

---

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impact 4.4-11: The Project could interfere with the movement of a native wildlife species or with established native resident or migratory wildlife corridors. *Less than significant* (Class III)

The Project is located in a region dominated by agricultural, commercial, and residential land uses. Terrestrial wildlife movement opportunities in the area are already constrained by development. Therefore, the Project would not interfere substantially with the movement of any terrestrial wildlife species in the developed portions of the Project area. Wildlife may be temporarily deterred from work areas by noise and human activity; however, most wildlife movement would occur at night, while construction activities near sensitive habitat (e.g., riparian habitat) would occur almost exclusively during the day. Limited night work near these locations would not have a significant impact on wildlife. Further, it is SCE's standard practice to cover holes and trenches during the night to prevent impacts to the nocturnal movement of small animals.

The Project area contains open water that is suitable for movement of arroyo chub and Santa Ana sucker. The Project design does not directly impact open water in the Prado Flood Control Basin; however, the active channel that would provide potentially suitable habitat for special-status fish species flows between the proposed hybrid H-frames. Depending on water levels and seasonal flow, there would be a potential for Project construction to impact to fish movement, a significant

impact. However, SCE would implement APMs BIO-01, BIO-05, and BIO-10, which would reduce impacts to special-status fish to less than significant. As previously described, APM BIO-01 would require biological monitoring in Project construction areas where sensitive biological resources or habitats suitable to any special-status species are located. APM BIO-05 would provide for avoidance or minimization of impacts to special-status fish species. APM BIO-10 would provide mitigation for any impacts to riparian/riverine habitat suitable for special-status fish species.

Specific to the Western Riverside County MSHCP, the Santa Ana River/Prado Flood Control Basin and Temescal Wash areas are important landscape linkages in the region. Habitat within the Prado Flood Basin includes MSHCP Existing Core A, and the Temescal Wash includes MSHCP Proposed Constrained Linkage 4. Terrestrial wildlife movement along Temescal Wash would not be substantially impacted by the Project and the Project would not conflict with the MSHCP goals for wildlife movement. With implementation of Project APMs, Project activities would have less-than-significant impacts on wildlife movement.

Mitigation: None required.

Impact 4.4-12: The Project activities would disturb special-status bats or maternity bat roosts, if present. *Less than significant with mitigation* (Class II)

Project activities could disturb or impede maternity bat roosts that may occur in the area. Maternity roosts are considered native nursery sites under CEQA and Project activities that could directly or indirectly impede the use of native wildlife nursery sites would be considered significant. A bat habitat assessment was conducted in 2011 for the proposed Circle City Substation site and did not identify any sign of roosting bats. However, the proposed subtransmission line, source lines, and Mira Loma Substation were not evaluated for potential bat roosting. There are several common and special-status bat species that occur throughout the Project area and may use trees, buildings, and bridges for roosting. Specifically, the riparian corridor along Santa Ana River could provide habitat for foliage roosting bats such as hoary bat, a species of special concern, and the River Road Bridge could provide habitat for crevice roosting bats, such as Myotis spp. Removal and construction of hybrid H-frames along River Road could disturb roosts during the maternity season in spring and summer. If roosting bats were adversely impacted during Project construction, this would result in a significant impact. Implementation of Mitigation Measure 4.4-12 would reduce such potential impacts to less than significant.

> **Mitigation Measure 4.4-12:** SCE shall ensure that a preconstruction survey for roosting bats shall be conducted by a qualified biologist prior to construction activities to characterize potential bat habitat and identify active roost sites. Surveys shall be conducted within 100 feet of construction activities. If an active bat roost being used for maternity is found within 100 feet of the construction activities, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active maternity roosts by the qualified biologist. Should potential roosting habitat or active non-maternity bat roosts be found in trees to be removed or trimmed or poles to be replaced under the Project, SCE shall implement the following measures:

1. Removal or trimming of trees and/or poles with potential bat roosting habitat or active roosts shall occur when bats are active (i.e., not in torpor or hibernation), approximately between the periods of March 1 to March 15, and September 15 to October 15; outside of bat maternity roosting season (approximately March 15 to September 15) and outside of months of winter torpor (approximately October 15 to February 28) to the extent feasible.
2. The qualified biologist shall be present during tree and pole removal if potential roosting habitat or active bat roosts are present. Trees and poles with potential roosting habitat or active roosts shall be removed only when no rain is occurring or is forecast to occur for 3 days, when daytime nighttime temperatures are at least 50 °F, and when wind speeds are less than 15 mph.
3. Removal of trees or branches with active or potentially active roost sites shall follow a two-step removal process:
    a. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost shall be cut only using chainsaws or hand tools.
    b. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or hand tools or other equipment (e.g., excavator or backhoe).
4. Removal of structures containing or suspected to contain active bat roosts shall be partially dismantled under the supervision of the qualified biologist in the evening prior to the emergence of bats. Structures shall be partially dismantled to significantly change the roost conditions, causing adult bats to abandon the roost and seek new roosting locations. Removal shall be completed the subsequent day.
5. Bat roosts that begin during construction are presumed to be unaffected, and no buffer would be necessary. Direct impacts to bat roosts or take of individual bats shall be avoided.

Significance after Mitigation: Less than Significant.

---

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact 4.4-13: Project activities could require protected tree removal and/or trimming. *Less than significant.* (Class III)

The Riverside County and San Bernardino County ordinance codes and the municipal codes for the cities of Chino, Corona, Eastvale, Norco, and Ontario provide for the protection of plant resources in their respective jurisdictions. Plants protected under these codes may be present within the Project area and potentially impacted by Project activities. SCE would implement APM BIO-12 to ensure that impacts to protected trees identified during pre-construction surveys would be avoided, and if it is determined that protected trees are required to be trimmed, relocated, removed, or their protected root zone encroached upon, a ministerial permit would be required pursuant to the applicable local jurisdiction's tree ordinance. Issuance of and compliance

with protected tree ministerial permits would ensure that the Project would not conflict with local tree preservation ordinances. The impact would be less than significant.

Mitigation: None required.

---

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact 4.4-14: The project could conflict with the Western Riverside MSHCP. *Less than significant.* (Class III)

The Project components within Riverside County would occur within the Western Riverside County MSHCP area. The Project would be consistent with the MSHCP whether or not SCE elects to act as a PSE in the MSHCP. A PSE is any regional public facility provider (e.g., a utility company, a public district, or agency) that operates and/or owns land within the MSHCP area and that applies for Take Authorization pursuant to Section 11.8 of the Implementing Agreement.

The Mira Loma-Jefferson 66 kV Subtransmission Line alignment spans a portion of MSHCP Existing Core A. However, there are no Criteria Cells or Cell Groups that present conservation goals for Existing Core A in the study area. Therefore, the Mira Loma-Jefferson 66 kV Subtransmission Line would not be expected to conflict with the Western Riverside County MSHCP goals for Existing Core A.

The proposed Circle City Substation site and the southern staging area occur within Subunit 3: Temescal Wash in Cell 1826 of the MSHCP. Conservation goals for Cell 1826 include conserving existing wetlands in Temescal Wash, conserving upland habitat adjacent to Temescal Wash, conserving habitat for least Bell's vireo and southwestern willow flycatcher, conserving clay soils and floodplain areas supporting sensitive plant species, and providing and maintaining continuous linkage of southern Temescal Wash to Santa Ana River. Conservation within this cell would range from 15 to 25 percent, focusing on the southern portion of the cell. The proposed construction and staging area would be located in the northern half and would not be in an area described for conservation action. The source line alignments that would connect with the proposed Circle City Substation would cross the concrete-lined portion of Temescal Wash, which is not considered wildlife habitat and "will remain in its existing condition with implementation of the MSHCP Plan" according to the MSHCP. Therefore, construction of the Circle City Substation and utilization of the staging area would not be expected to conflict with the MSHCP goals for Cell 1826. Project activities would be consistent with MSHCP goals and policies therefore Project impacts would be less than significant.

Mitigation: None required.

4.4.5 Alternatives

4.4.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, the construction, operation, and maintenance related impacts that would result under the Project, as discussed in Section 4.4.4, *Impacts and Mitigation Measures*, would not occur. There would be no impact under the No Project Alternative (No Impact).

4.4.5.2 Subtransmission Service Objectives Alternatives

This section analyzes the biological resources impacts associated with alternatives to the proposed Mira Loma-Jefferson subtransmission line as depicted on Figure 3-2a, *66 kV Subtransmission Line Alternatives*, in Chapter 3, *Project Alternatives*, as well as Alternative B, which is an alternative that includes only installation of the Mira Loma-Jefferson subtransmission line. The subtransmission line alternatives and associated staging yards, access roads, guard structures, and pulling sites specific to these alternatives would be expected to have similar biological conditions as the proposed subtransmission line. The general biological conditions of the alternatives would be consistent with the proposed Project, and the resulting impacts would be similar. The previously described APMs BIO-01, BIO-02, BIO-03, BIO-04, BIO-05, BIO-06, BIO-07, BIO-08, BIO-09, BIO-10, BIO-11, and BIO-12 would be applicable to Alternatives B, C1, C2, and C3. General and focused biological surveys have been conducted with a 300-foot buffer area for the subtransmission line alternatives and are expected to have similar environmental conditions as the proposed Project. It is likely that impacts associated with access roads, guard structures, and pulling sites would fall within the surveyed buffer, and additional surveys would not be necessary.

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Alternative B includes the proposed Mira Loma-Jefferson subtransmission line that was analyzed for the Project. However, this alternative would not include construction of the Circle City Substation and associated source lines and communication lines. Because this alternative is within the environmental footprint analyzed for the Project, Alternative B would have similar impacts to sensitive biological resources. As described for the Project, biological surveys identified the presence of burrowing owl and least Bell's vireo near the proposed Mira Loma-Jefferson subtransmission line alignment. In addition, seasonal aquatic features that may support Riverside fairy shrimp and vernal pool fairy shrimp were identified within the Mira Loma-Jefferson subtransmission line alignment. The need for additional focused biological surveys is not anticipated along this segment. Impacts to vegetation, special-status species, and wildlife movement would be similar to those of the Project after implementation of APMs, and mitigation measures identified for the Project would reduce significant impacts to less than significant levels (Class II). Applicable mitigation measures for Alternative B include Mitigation Measures 4.4-3a,

to conduct fairy shrimp surveys; 4.4-3b to protect fairy shrimp; Mitigation Measures 4.4-9a and 4.4-12, to protect non-riparian special-status vegetation and sensitive bats, respectively. Therefore, additional site specific mitigation for Alternative B is not required.

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it includes a half-mile-long underground conduit installation within Hellman Avenue. The underground line would transition from overhead to underground near the southwest corner of American Heroes Park at Hellman Avenue and continue south within Hellman Avenue to Pine Avenue/Schleisman Road, where it would transition to overhead at the southwest corner of Pine Avenue and Hellman Avenue. The Alternative C1 underground segment is approximately 0.4 mile in length. Due to the same environmental footprint and minimal undergrounding distance, Alternative C1 would have similar impacts to sensitive biological resources. General and focused biological surveys have been conducted for this segment and adjacent area and sensitive biological resources were not identified on this site. Additional focused biological surveys are not anticipated along this segment. Impacts to vegetation, special-status species, and wildlife movement would be similar to those of the Project after implementation of APMs, and mitigation measures identified for the Project would reduce significant impacts to less than significant (Class II). In addition to APM BIO-03, applicable mitigation measures for Alternative C1 include Mitigation Measures 4.4-3a, to conduct fairy shrimp surveys; 4.4-3b to protect fairy shrimp; and 4.4-12, to protect sensitive bats. Therefore, additional site specific mitigation for Alternative C1 is not required.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment deviates from the proposed route where SCE's existing ROW is crossed by Archibald Avenue. At this location, the line would transition to underground, then proceed south for approximately 1.2 miles within Archibald Avenue to the intersection of Smith River and Archibald Avenue. The line would transition to aboveground near the southwest corner. The line would cross the Santa Ana River in southerly direction, and continue south on the SCE ROW to River Road. The route would continue in a southeasterly direction along River Road through a predominantly residential area. Upon intersecting North Cota Street, Alternative C2 would travel underground in a southerly direction, then rise and attach at the existing Mira Loma-Corona-Jefferson 66 kV subtransmission line near the intersection of Railroad Street and North Cota Street, adjacent to Corona Substation. Alternative C2 would be approximately 9.5 miles in length (8.9 miles aboveground and 0.6 mile underground).

Alternative C2 would transect the Santa Ana River at a wider section than the proposed Project and may result in greater impacts to biological resources, specifically riparian habitats, special-status fish, and jurisdictional features. Total impacts to these resources may be higher than those of the proposed Project after implementation of APMs, but significant impacts would still be reduced to less-than-significant levels with implementation of mitigation measures identified for the Project (Class II). Mitigation measures applicable to Alternative C2 include Mitigation Measures 4.4-1a, to survey for and avoid rare plants; 4.4-1b, for rare plant restoration; 4.4-2 to

protect special-status amphibians and reptiles; 4.4-3 for fairy shrimp surveys; 4.4-3b, for fairy shrimp protection; 4.4-4, to protect special-status fish; 4.4-5a, to apply APM BIO-06 to southwestern willow flycatcher; 4.4-5b, to protect least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo; 4.4-5c, for sensitive habitat restoration; 4.4-9a, to apply restoration planning methodology identified in Mitigation Measure 4.4-5c to non-riparian special-status vegetation, which includes Riversidean Sage Scrub; 4.4-9b, to fulfill CDFW 1602 Lake and Streambed Alteration Agreement requirements; 4.4-5c for the restoration of jurisdictional waters of the U.S., including wetlands; and 4.4-12, to protect sensitive bats. Additional site specific mitigation for the Alternative C2 is not required.

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 includes three proposed subtransmission-level battery storage and substation locations, new subtransmission lines, telecommunication lines, and line reconductoring that was not included in the Project analysis. Biological surveys have not been conducted for three battery storage locations or for the new and existing lines. A review of recent and historical aerial imagery for the battery storage and substation sites shows varying degrees of habitat for plants and wildlife, and a recent history of site disturbance on each. While the history of site disturbance reduces the likelihood of encountering sensitive resources on these sites, significant impacts could occur if rare plants, fairy shrimp, burrowing owl, or sensitive bats were encountered within or on the fringes of the sites. Additional focused biological surveys would be needed for new proposed facility sites. Jurisdictional wetlands were not identified in the area during the aerial photograph review. The construction of new subtransmission lines and reconductoring of existing lines within the ENA would occur within urban street alignments where protected trees, nesting birds, or roosting bats may be encountered. Following the application of APMs to protect nesting birds and burrowing owls, impacts would remain significant. Mitigation measures applicable to Alternative C3 include Mitigation Measures 4.4-1a, to survey for and avoid rare plants; 4.4-1b, for rare plant restoration; 4.4-3 for fairy shrimp surveys; 4.4-3b, for fairy shrimp protection; and 4.4-12, to protect sensitive bats. These measures would reduce impacts of Alternative C3 to less than significant (Class II), and additional site specific mitigation for Alternative C3 is not required.

4.4.5.3 Distribution Service Objectives Alternatives

This section analyzes the biological impacts resulting from the construction of alternatives to the source line routes. Alternative source lines have been included in the study area, and associated staging yards, access roads, guard structures, and pulling sites specific to these alternatives are expected to have similar biological conditions as the proposed source line routes. Previously described APMs (specifically, APMs BIO-01, BIO-02, BIO-06, BIO-07, BIO-08, BIO-09, BIO-10, BIO-11, and BIO-12) would be applicable to these Project alternatives. Impacts to vegetation, special-status species, and wildlife movement are expected to be similar to those of the Project. Differences from the proposed Project are described in more detail in the following paragraphs.

General and focused biological surveys have been conducted for a 300-foot buffer around the alternative source line routes. It is likely that impacts associated with access roads, guard

structures, and pulling sites would fall within the surveyed buffer, and additional surveys would not be necessary.

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Under Alternative D1, the distribution-level battery storage facility would be constructed instead of the proposed Circle City Substation and source lines. The overall project would continue to require construction of the Mira Loma-Jefferson subtransmission line or one of the subtransmission level objective alternatives. The proposed battery storage location is within the project study area and has been surveyed for sensitive biological resources. In addition, a review of recent and historical aerial imagery confirms recent site grading. Site disturbance reduces the likelihood of encountering sensitive resources on these sites, but significant impacts would still occur if rare plants, fairy shrimp, or burrowing owl were encountered within or on the fringes of the site. Jurisdictional wetlands were not identified in the area during the aerial photograph review. The construction of distribution connections on Leeson Lane and the telecommunication connections along Magnolia Avenue, 2nd Street, 6th Street, etc., would occur within urban alignments where protected trees, nesting birds, or roosting bats may be encountered. Following the application of APMs to protect fairy shrimp, burrowing owl, and nesting birds (APMs BIO-03, BIO-08, and BIO-09), impacts would remain significant. Mitigation Measures applicable to Alternative D1 include Mitigation Measures 4.4-1a, to survey for and avoid rare plants; 4.4-1b, for rare plant restoration; 4.4-3 for fairy shrimp surveys; 4.4-3b, for fairy shrimp protection; and 4.4-12, to protect sensitive bats. Implementation of these mitigation measures would reduce significant impacts of Alternative D1 to less than significant (Class II), and additional site specific mitigation for Alternative D1 is not required.

Alternative D2: 66/12 kV Substation Site Alternative

This section analyzes the biological impacts resulting from construction of Alternative D2. Under Alternative D2, construction, operation, and maintenance-related impacts to biological resources that would result from construction and operations would be similar to those that would result from the proposed Project, as discussed in Section 4.4.4, *Impacts and Mitigation Measures*, and summarized below. Alternative D2 would be located on an approximately 12.5-acre, privately owned parcel just east of the proposed substation site. The parcel is currently vacant and is bounded by All American Way on the west, mixed vacant land and an asphalt production facility to the south, and vacant land to the east. A Waste Management facility, the terminus of Temescal Street, and a mobile home park border the parcel to the north. The site is generally flat, non-native grassland/ruderal vegetation similar to the proposed Circle City Substation site. Development of Alternative D2 could impact a potentially jurisdictional drainage located in the northeast portion of the alternative site. As previously described, APM BIO-01 would require biological monitoring in Project construction areas where sensitive biological resources or habitats suitable to any special-status species are located. APM BIO-11 would provide for the

mitigation of impacts to jurisdictional waters. Implementation of APMs BIO-01 and BIO-11 reduce this impact, but not to a less-than-significant level. Implementation of Mitigation Measure 4.4-9b, to fulfill CDFW 1602 Lake and Streambed Alteration Agreement requirements, and Mitigation Measure 4.4-5c, for sensitive habitat restoration, would ensure that impacts to this potentially jurisdictional resource would be less than significant (Class II). As a result, Alternative D2 would result in less-than-significant impacts to jurisdictional water resources.

General and focused biological surveys have been conducted for the Alternative D2 and adjacent areas and sensitive biological resources were not identified on this site. Additional focused biological surveys are not anticipated for this site. Biological monitoring (i.e., APM BIO-01) would be necessary throughout these areas to ensure protection of biological resources if they were to occur. Impacts to vegetation, special-status species, and wildlife movement are expected to be similar to those of the Project and would remain significant after implementation of applicable APMs. Implementation of Mitigation Measures 4.4-2, to protect special-status amphibians and reptiles; 4.4-3a, for fairy shrimp surveys; 4.4-3b, for fairy shrimp protection; 4.4-9a, to apply restoration planning methodology identified in Mitigation Measure 4.4-5c to Non-riparian special-status vegetation, which includes Riversidean Sage Scrub; 4.4-9b, to fulfill CDFW 1602 Lake and Streambed Alteration Agreement requirements; 4.4-5c to the restoration of Jurisdictional Waters of the U.S., including wetlands; and 4.4-12, to protect sensitive bats would apply to Alternative D2 and would reduce impacts to less than significant (Class II). Therefore, additional site specific mitigation for Alternative D2 would not be required.

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would deviate from the proposed Pedley Lines route just south of the intersection of Third Street and Grand Boulevard. At Quarry Street this alternative would turn east and continue underground along Quarry Street for approximately 500 feet, where it would transition to overhead. The overhead line would proceed east along Quarry Street to where Quarry Street dead-ends on the west side of the Temescal Wash flood control channel. At this location the alternative route joins the proposed Pedley Lines route. The Source Line Quarry Street Alternative segment would be approximately 2,800 feet long, and would include approximately 1,000 feet of underground line. The alternative route segment would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Lines segment that it would replace.

Quarry Street is bounded by residential development to the north and west, a city park to the south, and Temescal Wash flood control channel to the east. This urbanized area is similar to the proposed Pedley Source Line alignment, and Alternative E1 would have similar potential impacts to vegetation, special-status species, and wildlife movement to those of the proposed Project. Implementation of APMs would reduce impacts as described for the Project, but not to a less-than-significant level. Implementation of Mitigation Measures 4.4-1a, to survey for and avoid rare plants; 4.4-1b, for rare plant restoration and mitigation; 4.4-2, to protect special-status amphibians and reptiles; 4.4-3a, for fairy shrimp surveys; 4.4-3b, for fairy shrimp protection measures; 4.4-9a, to apply restoration planning methodology identified in Mitigation Measure 4.4-5c to non-riparian special-status vegetation, which includes Riversidean Sage Scrub; 4.4-9b, to fulfill CDFW 1602

Lake and Streambed Alteration Agreement requirements; 4.4-5c to the restoration of jurisdictional waters of the U.S., including wetlands; and 4.4-12, to protect sensitive bats, are applicable to Alternative E1 and would reduce significant impacts to sensitive biological resources to less than significant (Class II).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would be an underground line segment along the proposed Pedley Lines alignment from just west of Interstate 15 (I-15) to the proposed substation site. This alternative shares the same biological resources footprint as the proposed Project and would result in similar impacts to sensitive biological resources. Like the Project, therefore, implementation of APMs would reduce impacts, but not to a less-than-significant level. Implementation of mitigation measures identified for the Project would reduce significant impacts to less than significant (Class II). Mitigation Measures applicable to Alternative E2 include Mitigation Measures 4.4-1a, to survey and avoid rare plants; 4.4-1b, for rare plant restoration and Mitigation; 4.4-2 to protect special-status amphibians and reptiles; 4.4-3a, for fairy shrimp surveys; 4.4-3b for fairy shrimp protection; 4.4-9a, to apply restoration planning methodology identified in Mitigation Measure 4.4-5c to non-riparian special-status vegetation, which includes Riversidean Sage Scrub; 4.4-9b, to fulfill CDFW 1602 Lake and Streambed Alteration Agreement Requirements; 4.4-5c to the Restoration of Jurisdictional Waters of the U.S., including wetlands; and 4.4-12, to protect sensitive bats. Additional site specific mitigation for Alternative E2 is not required.

Alternative E3: Southern 66 kV Source Lines Alignment

Habitat within Temescal Wash comprises MSHCP Proposed Constrained Linkage 4 and Alternative E3 would cross Criteria Cells in this area. Conservation of this area focuses on 15 to 25 percent of the southern portion of Criteria Cell 1826, and 10 to 20 percent of the northern and eastern portion of Criteria Cell 1923. Alternative E3 occurs within these portions of the Criteria Cells that are the focus of conservation. Therefore, this alternative would impact Proposed MSHCP Constrained Linkage 4. If Alternative E3 is implemented, impacts would be addressed by implementation of best management practices and adherence to the Construction General Permit and Storm Water Pollution Prevention Plan.

The present of riparian habitat, including willow riparian forest, could support listed riparian birds such as least Bell's vireo, western yellow-billed cuckoo, and southwestern willow flycatcher. Least Bell's vireo has been observed and could breed along this source line alternative route (Bonterra, 2010d). Impacts to listed riparian birds along Alternative E3 would be similar to the impacts associated with riparian habitats along the Project alignments. Implementation of APM BIO-06 would reduce impacts, but not to a less-than-significant level. Implementation of Mitigation Measures 4.4-5a, 4.4-5b, and 4.4-5c specifically address impacts to listed riparian birds and would reduce Alternative E3's significant impacts to sensitive riparian birds to less than significant (Class II).

An additional vegetation type that is not present in the proposed Project footprint, but is present along the Alternative E3 alignment, is Riversidean sage scrub (Figure 4.4-5). This vegetation type

is not as heavily disturbed as the disturbed Riversidean sage scrub mapped along the proposed Project alignment. Impacts would be considered potentially significant due to this vegetation type's decline in the proposed Project region and its ability to support special-status species. SCE would implement APM BIO-07; however, implementation of Mitigation Measure 4.4-9a would be necessary to ensure that significant impacts to special-status vegetation communities would be reduced to less than significant (Class II). Should SCE opt to request PSE status pursuant to the MSHCP, impacts to this vegetation type would be reduced to less than significant through compliance with the MSHCP and no further actions would be required.

Due to additional riparian/riverine resources and jurisdictional resources along Alternative E3, total impacts to these resources would be greater than those of the proposed Databank Source Lines and would be significant even with implementation of APMs, but would still be reduced to less-than-significant levels with implementation of mitigation measures identified for the Project (Class II). Mitigation measures applicable to Alternative E3 include Mitigation Measures 4.4-1a, to survey for and avoid rare plants; 4.4-1b, for rare plant restoration; 4.4-2; to protect special-status amphibians and reptiles; 4.4-3a, fairy shrimp surveys; 4.4-3b, for fairy shrimp protection ; 4.4-5a, to apply APM BIO-06 to Southwestern Willow Flycatcher; 4.4-5b, to protect least Bell's vireo, Southwestern willow flycatcher, and yellow-billed cuckoo; 4.4-5c, for sensitive habitat restoration; 4.4-9a to apply restoration planning methodology identified in Mitigation Measure 4.4-5c to non-riparian special-status vegetation, which includes Riversidean Sage Scrub; 4.4-9b, to fulfill CDFW 1602 Lake and Streambed Alteration Agreement requirements; 4.4-5c for restoration of jurisdictional waters of the U.S., including wetlands; and 4.4-12, to protect sensitive bats. Additional site specific mitigation for Alternative E3 is not required.

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 includes many components that were analyzed for the Project, but would eliminate the Pedley Source Lines component and add the Circle City to Corona fiber line. Elements of Alternative E4 that are common to the Project include construction of the Circle City Substation, Databank Source Lines, and the Mira Loma-Jefferson subtransmission line. Because this alternative is within the environmental footprint of the Project, Alternative E4 would have similar impacts to sensitive biological resources. As described for the Project, biological surveys identified the presence of burrowing owl and least Bell's vireo near the proposed Mira Loma-Jefferson subtransmission line alignment. In addition, seasonal aquatic features that may support Riverside fairy shrimp and vernal pool fairy shrimp were identified within the Mira Loma-Jefferson subtransmission line alignment. The need for additional focused biological surveys is not anticipated along this segment. Impacts to vegetation, special-status species, and wildlife movement would be similar to those of the Project and would be significant even after application of APMs. However, like the Project, implementation of mitigation measures identified for the Project would reduce significant impacts to less than significant (Class II). Applicable mitigation measures for Alternative E4 include Mitigation Measures 4.4-3a, to conduct fairy shrimp surveys; 4.4-3b to protect fairy shrimp; Mitigation Measures 4.4-9a and 4.4-12 to protect non-riparian special-status vegetation and sensitive bats, respectively. Therefore, additional site specific mitigation for Alternative E4 is not required.

References – Biological Resources

Avian Power Line Interaction Committee (APLIC), 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Available online at: http://nmavianprotection.org/wp-content/uploads/2012/02/Mitigating-Bird-Collisions-with-Power-Lines-The-State-of-the-art-1994.pdf.

APLIC, 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Available online at: http://www.aplic.org/uploads/files/2643/SuggestedPractices2006%28LR-2%29.pdf.

APLIC, 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Available online at: http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf.

Baldwin, B.G., D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (Eds.), 2012. The Jepson Manual: Vascular Plants of California (2nd ed.). Berkeley, CA: University of California Press, 2012.

Barbour, M.G., T. Keeler-Wolf, and A. Schoenherr. 2007. Terrestrial Vegetation of California (3rd ed.). Berkeley, CA: University of California Press, 2007.

BonTerra, 2010a. Results of Focused Plant Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, CA. Nov. 2010. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2010b. Results of Delhi Sands Flower-loving Fly Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Oct. 2010. Letter to Mr. Keller, Southern California Edison.

BonTerra, 2010c. Results of Focused Presence/Absence Surveys for Western Burrowing Owl on the Circle City Substation and Mire Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Oct. 2010. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2010d. Results of Focused Presence/Absence Surveys for Least Bell's Vireo on a Portion of Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Letter to Mr. Muñoz, Southern California Edison. Oct. 2010.

BonTerra, 2011a. Results of Focused Plant Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, CA. Oct. 2011. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2011b. Results of Delhi Sands Flower-loving Fly Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Nov. 2011. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2011c. Results of a Fairy Shrimp Habitat Assessment for Substation Site 34S on the Circle City Substation Project Site in the City of Corona, Riverside County, California. May 2011. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2011d. 90-Day Report for the Wet Season Presence/Absence Survey for Vernal Pool Branchiopods conducted on the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, California. Aug. 2011. Letter to Ms. McCarthy, Carlsbad Fish and Wildlife Office.

BonTerra, 2011e. Results of Focused Presence/Absence Surveys for Western Burrowing Owl on the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Oct. 2011. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2011f. Results of the Least Bell's Vireo and Southwestern Willow Flycatcher Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Letter to Ms. Muñoz, Southern California Edison. Nov. 2011.

BonTerra, 2011g. Results of a Habitat Assessment Survey for Bat Species on a Portion of the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside County, CA. Letter to Ms. Muñoz, Southern California Edison. October 27, 2011

BonTerra, 2012a. Results of Focused Plant Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, CA. Aug. 2012. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2012b. 90-Day Report for the Wet Season Presence/Absence Survey for Vernal Pool Branchiopods conducted on the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, California. Aug. 2012. Letter to Ms. Tharratt, Carlsbad Fish and Wildlife Office.

BonTerra, 2012c. Results of Focused Presence/Absence Surveys for Western Burrowing Owl on the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, San Bernardino and Riverside Counties, CA. Aug. 2012. Letter to Ms. Muñoz, Southern California Edison.

BonTerra, 2012d. Results of the 2012 Least Bell's Vireo and Southwestern Willow Flycatcher Surveys for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project in San Bernardino and Riverside Counties, CA. Letter to Ms. Muñoz, Southern California Edison. Aug. 2012.

Busby Biological Services, Inc., 2015. Final 2014/2015 Focused, Protocol-level Wet Season Fairy Shrimp Survey Report for the Proposed Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California. Prepared for the U.S. Fish and Wildlife Service and Southern California Edison. August 20, 2015.

California Department of Fish and Game (CDFG), 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento. Available online at: https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf.

CDFG, 2012. Staff Report on Burrowing Owl Mitigation. Available online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true.

California Department of Fish and Wildlife (CDFW), 2016. California Natural Diversity Database (CNDDB). Commercial Version. Accessed on: May 23, 2016.

California Native Plant Society (CNPS), Rare Plant Program, 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org Accessed on: 23 May 2016.

California Public Utilities Commission (CPUC). 2016. Circle City Substation and Mira Loma-Jefferson 66 kV Line Project Scoping Report. Prepared by ESA for the California Public Utilities Commission, March 2016.

CNPS, 2015. A Manual of California Vegetation Online Edition. http://www.cnps.org/cnps/vegetation/; searched on May 23, 2016. California Native Plant Society, Sacramento, CA.

Chambers Group Inc., 2013. Final Results of the Focused Plant Surveys Conducted for the Southern Edison Circle City Transmission Line Route in the Cities of Ontario, Eastvale, Norco, and Corona in San Bernardino and Riverside Counties, California. Letter to Ms. Munoz, Southern California Edison, Dec. 2013.

City of Chino, 2010. City of Chino General Plan. Prepared by Design, Community & Environment, July, 2010.

City of Corona, 2004. City of Corona General Plan. Prepared by EIP Associates, Adopted March 17, 2004.

City of Ontario, 2016. City of Ontario Policy Plan, Section ER5 Biological, Mineral & Agricultural Resources. Available online at: http://www.ontarioplan.org/policy-plan/environmental-resources-element/er5-biological-mineral-agricultural-resources/.

Crother, B.I. (Ed.), 2012. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding (Seventh Edition). Available online at: http://ssarherps.org/wp-content/uploads/2014/07/HC_39_7thEd.pdf.

Dicus Biological, 2012. Delhi Sands Flower-Loving Fly (*Rhapiomidas terminates abdominalis*) Focused Survey and Technical Report Circle City Project. Oct. 2012.

Dicus Biological, 2014a. Final Delhi Sands Flower-Loving Fly 2013 Presence/Absence Survey Circle City Substation and Transmission Line Project Riverside and San Bernardino Counties California. Jan. 2014.

Dicus Biological, 2014b. Delhi Sands Flower-Loving Fly (*Rhapiomidas terminates abdominalis*) Focused Survey and Technical Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project. Oct. 2014.

Environmental Intelligence, Inc., 2015. Methods, Results, and Conclusions of the 2015 Delhi Sands Flower-loving Fly (*Rhaphiomidas terminates abdominalis*) Focused Survey for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project. Letter to Zsolt Kahancza, Southern California Edison, October 29, 2015.

Environmental Intelligence, Inc., 2016. Letter report entitled, "Results of 2016 Riparian Bird Surveys for the Least Bell's Vireo (*Vireo bellii pusillus*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) for the Proposed Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Located in Riverside and San Bernardino Counties, California. Submitted to Zsolt Kahancza, Southern California Edison, September 13, 2016.

Halterman, M., M.J. Johnson, J.A. Holmes, and S.A. Laymon, 2015. A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo. Final Draft April 22, 2015.

Jennings, M.R. and M.P. Hayes, 1994. Amphibian and reptile species of special concern in California. Final Report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. pp. 225, 1994.

Mayer, K.E. and W.F. Laudenslayer (eds.), 1988. A guide to wildlife habitats of California, California Department of Fish and Game, Sacramento, CA, 166 pp., 1988.

Moyle, P.B., R.M. Quiñones, J.V. Katz, and J. Weaver, 2015. Fish Species of Special Concern in California; Santa Ana Speckled Dance Rhinichthys osculus ssp. Sacramento: California Department of Fish and Wildlife. www.wildlife.ca.gov

Noss, R.F., and R.L. Peters, 1995. Endangered Ecosystems; A Status Report on America's Vanishing Habitat and Wildlife. Defenders of Wildlife. December, 1995.

Riverside County, 2006. Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area. Available online at: http://rctlma.org/Portals/1/EPD/consultant/burrowing_owl_survey_instructions.pdf.

Sawyer, J.O. and T. Keeler-Wolf, 1995. A Manual of California Vegetation, California Native Plant Society, Sacramento, 471 pp., 1995.

SMJ Biological Consultants, 2010. Results of a habitat assessment for the federally endangered Stephens' kangaroo rat (Dipodomys stephensi; SKR) and San Bernardino kangaroo rat (Dipodomys merriami parvus; SBKR), and the California State Species of Special Concern Los Angeles pocket mouse (Perognathus longimembris brevinasus; LAPM), along 30-35 miles of alignments for the proposed Circle City Sub-station Project, located in Riverside and San Bernardino Counties. Letter to Ms. Tennant, BonTerra Consulting. Sept. 2010.

SMJ Biological Consultants, 2012. Results of a 2012 Habitat Assessment for Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, and Los Angeles Pocket Mouse for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino counties, California Letter to Ms. Tennant, BonTerra Consulting. Aug. 2012.

Sogge, M.K., D. Ahlers, and S.J. Sferra, 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher. Reston, VA: U.S. Geological Survey, 2010.

Southern California Edison (SCE), 2015. Proponent's Environmental Assessment Circle City Substation and Mira Loma-Jefferson 66 KV Subtransmission Line Project. December.

Stebbins, R. C., 2003 A Field Guide to Western Reptiles and Amphibians. Third Edition. Houghton Mifflin Company, Boston. 2003.

U.S. Army Corps of Engineers (USACE), 1987. Corps of Engineers Wetland Delineation Manual: Arid West Supplement Vicksburg, MS.

USACE, 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) Vicksburg, MS.

U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS), 1974. Soil Survey Geographic (SSURGO) Database for Western Riverside Area, California.

USDA NRCS, 1980. Soil Survey Geographic (SSURGO) Database for San Bernardino County, Southwestern Part, California. Fort Worth, TX: USDA, NRCS.

U.S. Fish and Wildlife Service (USFWS), 1994. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo. Federal Register 59(22): 4845–4867.

USFWS, 1996a. Interim General Survey Guidelines for the Delhi Sands Flower-loving Fly. Carlsbad, CA: USFWS.

USFWS, 1996b. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. Washington, D.C.: USFWS.

USFWS, 2001. Least Bell's Vireo Survey Guidelines. Carlsbad, CA: USFWS. January 19, 2001.

USFWS, 2010. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for Santa Ana Sucker; Final Rule. Federal Register 75(239): 77961–78027. Washington, D.C.: USFWS. December 14, 2010.

USFWS, 2015. Survey Guidelines for the Listed Large Branchiopods, 2015.

USFWS, 2016. IPaC Trust Resources Report (informal) for Circle City Substation and Mira Loma-Jefferson 66kv Line Project. Version 3.0.7. Generated May 23, 2016.

Western Riverside County Regional Conservation Authority (RCA), 2010. Western Riverside County Multiple Species Habitat Conservation Plan, as amended. http://rctlma.org/Portals/0/mshcp/volume1/sec3.html#table3.1.47

This page intentionally left blank

4.5 Cultural Resources

This section examines the impacts of the Project and alternatives on cultural resources. Due to the different methods involved in paleontological and cultural resources analyses, these issue areas are discussed separately. For the purposes of this analysis, the term *cultural resources* consists of historical resources, archaeological resources, tribal cultural resources, and human remains. These classifications are based on definitions and other criteria set forth in the CEQA Guidelines and are not all mutually exclusive; for instance, an archaeological resource may also be an historical resource, and a tribal cultural resource may also be an archaeological resource and historical resource.

In this EIR, historical resources are divided into historic architectural resources (hereafter "architectural resources") and archaeological resources. When applicable, the distinction between architectural resources and archaeological resources hinges on the condition of the resource—if a resource is considered a ruin (e.g., building lacking structural elements or structure lacking historic configuration), it is classified as an archaeological resource. Architectural resources include historic buildings, structures (e.g., bridges, canals, roads, utility lines, railroads), objects (e.g., monuments, boundary markers), and districts. Archaeological resources include historical and prehistoric remnants of past cultures, typically recorded as sites or districts. Historical archaeological resources are those archaeological resources that date to the period after Euroamerican settlement of an area and may include foundations, landscaping, refuse scatters, mining features, and railroad grades. Prehistoric archaeological resources are those archaeological resources that date to the period prior to Euroamerican settlement of an area and may include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps, ceremonial sites, and trails. A tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object of cultural value to a California Native American tribe.

A paleontological resource is a locality containing vertebrate, invertebrate, or plant fossils (e.g., fossil location, fossil-bearing formation, or a formation with the potential to bear fossils). Paleontological resources are considered a fragile and non-renewable scientific record of the history of life on Earth.

4.5.1 Project Area

For the analysis described in this section, the term Project Area is defined as the area where direct impacts could occur as a result of the Project and consists of subtransmission line alignments with 100-foot buffers from the centerlines, the proposed substation footprint, pull sites, material storage yards, staging areas, and access roads. In this document, the term Architectural Study Area is defined as the area where direct impacts could occur to architectural resources; this includes the Project Area and the entirety of parcels encompassed to any degree by the Project Area.

4.5.2 Setting

4.5.2.1 Geographical Setting

The northern portion of the Project Area is in the Chino Basin, while the southern portion is in the Prado Basin. These two basins were formed over the past 2.6 million years as the Santa Ana Mountains were slowly uplifted due to regional tectonic forces. The Chino Basin is a geologic feature comprised of a large, flat bowl between the Santa Ana River and Chino Creek, to its north. The fertile basin encompasses the cities of Corona and Norco and is bound on the south by the Santa Ana Mountains, on the west by the Chino Hills, on the north by low hills south of the San Gabriel Mountains, and on the east by the Jurupa Hills. The Prado Basin is a lowland area formed by the confluences of Mill Creek, Temescal Wash, and the Santa Ana River. The adjacent mountains are within the Peninsular Range zone, characterized by elongated mountain ranges and intervening basins and valleys oriented northwest-southeast. The mountains are part of the Whittier-Elsinore fault system; the Elsinore Fault is located just west of the Project Area.

The southeastern portion of the Project Area is in the Temescal Wash, composed of Holocene and late Pleistocene alluvial channel deposits, while the remaining portion of the Project Area is generally situated in Holocene and late Pleistocene fan and/or channel deposits associated with nearby hills and mountains. The sediments in the Project Area are characterized as silty, sandy, and gravelly loams. Several small stream channels as well as the larger Santa Ana River cross through the Project Area. Elevations in the Project Area range from 525 to 820 feet above mean sea level and annual precipitation averages approximately 12 inches. The majority of the Project Area has been heavily disturbed by historical and modern activities, notably road construction, urban and industrial development, dairy farming, crop cultivation, and railroad activities.

Though not in the Project Area specifically, the general region contains abundant sources of usable tool stone that could easily have been obtained in prehistory, such as a diverse array of igneous, sedimentary, and metamorphic rocks that are exposed both as bedrock and in alluvial fan deposits. In the nearby Santa Ana Mountains, the Triassic Santa Ana Formation forms a broad band of bedrock 2 to 3 miles wide that includes metavolcanic rocks such as meta-andesite intrusions, meta-sedimentary rocks (e.g., shales, slates, phyllites, poorly metamorphosed sandstone), conglomerates, and limestone lenses.

4.5.2.2 Cultural Resources Setting

The following cultural resources setting section is a condensed version of that presented in the 2012 cultural resources technical report completed for the Project (Hoffman et al., 2012). This report is included as Appendix E, Cultural Resources Technical Reports.

Prehistoric Context

It appears likely that humans first arrived in southern California approximately 12,000 years before present (BP). Based on dates derived from excavations at sites near Lake Perris (Perris Reservoir), approximately 20 miles east of the Project Area, and Diamond Valley Lake (Eastside Reservoir), approximately 20 miles southeast of Project Area, human occupation of the Project

Area and vicinity appears to have begun approximately 9,000 BP. The prehistoric cultural chronology of inland coastal southern California is composed of the following five periods:

- Paleoindian Period (circa [ca.] 12,000 - 7,000 BP);
- Pinto Period (ca. 7,000 - 4,000 BP);
- Gypsum Period (ca. 4,000 - 1,500 BP);
- Saratoga Springs Period (ca. 1,500 - 650 BP [Anno Domini (A.D.) 500 - A.D. 1200]); and
- Proto-Historic or Shoshonean Period (ca. 650 - 150 BP [ca. A.D. 1200 to the 1800s]).

These periods represent a general trend of change over time in climatic conditions (from wetter to drier conditions), settlement patterns (from small mobile groups to larger, more sedentary groups), technology (from fewer tools focused on hunting to a variety of tools focused on plant use), and cultural elaboration (increasingly specialized tools, ornamental items, and the development of trade networks). Distinct ethnographic groups appear to have developed during the Proto-Historic Period, when Patayan populations appear to have entered inland coastal California from the Lake Cahuilla area. Subsequently, Spanish exploration and the establishment of the mission system during the late 1700s marked the end of the prehistoric way of life.

The current theory amongst the majority of archaeologists is that the earliest humans to occupy California were highly mobile hunters and gatherers, people termed Paleoindians. It has been suggested that assemblages of the Paleoindian Period (ca. 12,000-7,000 BP) be divided into a Fluted Point tradition (12,000-10,000 BP) and, following Bedwell (1970), a Western Pluvial Lakes Tradition (10,000-7,000 BP). Although several fluted points have been recovered on the shoreline of Lake Mojave, northeast of the Project Area, none have been documented in the vicinity of the Project Area.

The Pinto Period (ca. 7,000-4,000 BP) is marked by a gradual transition from wet pluvial conditions to arid conditions in the deserts during the terminal Pleistocene and Early Holocene. Several sites are known from the Pinto Period in southern California, including in Death Valley, Salt Springs, the Stahl Site in Owens Valley, sites in the Pinto Basin in Joshua Tree National Park, and two sites in Diamond Valley Lake. Pinto Period sites are associated with the margins of pluvial lakes and now-extinct springs. Pinto- series projectile points are crudely made stemmed- or basally-notched dart points and represent the most distinctive artifact type of the Period. Other artifacts found at Pinto Period sites include large leaf-shaped knives; thick, split cobble choppers and scrapers; scraper-planes; and small milling slabs and manos. With the exception of the Stahl Site, most known Pinto Period sites are small surface lithic deposits, suggestive of temporary and perhaps seasonal occupation by small groups of people.

The Gypsum Period (ca. 4,000-1,500 BP) is one of cultural intensification in southern California. The beginning of the Gypsum Period coincides with the Little Pluvial, a period of increased moisture in the region; this ameliorated climate allowed for more extensive occupation of the desert regions. In addition, periods of drought during this time seem to have resulted in human adaptations to more arid conditions, rather than a retreat from the deserts. Large occupation sites were usually adjacent to permanent water sources, such as perennial springs or larger streams. During the subsequent arid periods, human populations gradually adapted to the increasingly arid

environment in a variety of socioeconomic ways. Technologically, the artifact assemblage of this period is similar to that of the preceding Pinto Period, as new tools were added either as innovations or as "borrowed" cultural items. Diagnostic projectile points of the period include Humboldt, Gypsum, and Elko-series dart points. Late in the Gypsum Period, Rose Spring arrow points appear in the archaeological record, reflecting the spread of bow and arrow technology from the Great Basin and Colorado River region. Other artifact types characteristic of this period include leaf-shaped arrow points, rectangular-based knives, flake scrapers, T-shaped drills, milling slabs and manos, as well as core/cobble tools assemblages such as scraper planes, large choppers, and hammerstones. Shaft smoothers, incised slate and sandstone tablets and pendants, bone awls, *Olivella* shell beads, and *Haliotis* beads and ornaments are also found from this period. In addition to the introduction of the bow and arrow, the mortar and pestle was also introduced for use in processing hard seeds, such as from the mesquite pod.

The Saratoga Springs Period (ca. 1,500-650 BP) is, in large part, a continuation of the developments from the Gypsum Period, such as continued adaptation to the arid environment in the deserts and expanding trade relations. During this period, variations in regional cultural adaptations become more apparent. Trade with the Pacific and Gulf coastal populations appears to have been extensive, and was one driving force that led to the gradual expansion of Patayan cultural traits farther west into the deserts, and later into the mountains of the Peninsular Range as well as into the inland valleys and coastal regions of southern California. Lake Cahuilla is believed to have re-filled the Coachella Valley around 1,500 BP, and was the focus of cultural activities such as exploitation of fish, waterfowl, and wetland resources during the period. Desert people, speaking Shoshonean languages, may have moved into southern California at this time, the so-called "Shoshonean Intrusion."

During the Shoshonean Period (ca. 650-150 BP) there appears to have been a continuation of the technological developments from the earlier Saratoga Springs Period. However, regional developments that indicate the formation of distinct ethnographic groups become clearer. As in all of southern California prehistory, heavily used sites are located adjacent to dependable sources of water. During the period, Lake Cahuilla began to dry, and the large Patayan populations occupying its shores began moving westward into areas such as Anza-Borrego, Coyote Canyon, Upper Coachella Valley, Little San Bernardino Mountains, San Jacinto Valley, and San Jacinto Plains. The final desiccation of Lake Cahuilla, which had occurred by approximately 360 BP, resulted in a population shift away from the lakebed into the Peninsular Ranges to the west and the Colorado River regions to the east. Spanish exploration and establishment of the Mission system during the late 1700s marked the end of the prehistoric way of life.

Ethnographic Context

The Project Area was traditionally occupied by the Gabrielino Indians (also known as the Tongva) after the establishment of Mission San Gabriel Arcángel in 1771, but may also have been occupied by the Luiseño/Juaneño people as a result of population shifts over time. Both are considered Shoshonean peoples with similar languages. Their settlement patterns included seasonally based, permanent base camps with associated task-oriented sites. Acorns from a variety of oak species were one of the most heavily used plant foods, while a variety of waterfowl, fish, mollusks, and mammals were also exploited.

Technology was based on flaked stone projectile points, scrapers, choppers, and drills, as well as bedrock mortars, groundstone milling stones, handstones, mortars, and pestles. Other major tools included the bow and arrow, wooden throwing sticks, traps, nets, burden baskets, carrying nets, and a small number of ceramic forms that were mostly undecorated. The Gabrielino/Tongva also manufactured and traded soapstone items. Houses were mainly conical, partially subterranean, and thatched with reeds, bark, or various other forms of local vegetation. Near such dwellings usually stood brush-covered ramadas under which domestic chores were done and each village had several granaries. Round, partially subterranean, earth-covered sweat lodges were also a common structure in settlements, as were various other ceremonial structures.

Though no fixed sexual division of labor existed among the Gabrielino and Luiseño/Juaneño, women performed the majority of the food gathering activities while men did most of the hunting and fishing. Many of the subsistence activities were undertaken using a combination of both male and female input. Almost exclusively, men were involved in ritual and politics. A wide variety of social roles were present in Gabrielino and Luiseño/Juaneño life, most inherited patrilineally, including leadership/chief and religious positions. Society was organized into sanguinal clans and families. War was conducted almost solely in retaliation, with several villages often forming an alliance.

Though not the first, the principal god of the Gabrielino and Luiseño/Juaneño was Chingichnich, who was attributed with the creation and dispersal of humans throughout the world, and was associated with the coyote. Chingichnich's initial appearance corresponded to a flood event that covered the world except for one peak. Datura initiation rites were conducted under this god's inspiration, as were mourning rituals.

At the time of prolonged contact with Euroamericans in the late 1700s, the Luiseño/Juaneño population may have been as large as 10,000. Population estimates for the Gabrielino during this period are scant, though upwards of 5,000 Gabrielino may have been present immediately prior to Spanish contact. Initial contacts with Europeans, however, quickly led to the deterioration of traditional ways of life. This process began with the introduction of diseases to which the natives had no immunity, resulting in severe population reductions. The introduction of Christianity into their culture also represented a substantial change in the native social fabric. While natives affiliated with the Missions were encouraged to maintain their own settlements and subsistence practices, agriculture was introduced, including the raising of certain European grain staples like wheat, oats, and barley.

When the missions were secularized in 1834 by the Mexican government, many of the natives were forced to work on Mexican ranchos, although those living further from the ranchos maintained their traditional life styles longer. After California became a part of the U.S., homesteading increased and many of the areas traditionally used by Native Americans for hunting and gathering were fenced for ranches and farms. Federal Indian reservations were established in the 1870s to offset this encroachment, but instead it forced many natives to adopt a more sedentary life style based on Anglo economics as an alternative to moving to reservations.

Historic Context

Spanish missionaries settled Riverside and San Bernardino counties in the early 19th century and colonized local native populations. In 1776, and again in 1778, Spanish army Captain Juan Bautista de Anza led an overland expedition through the region on an approximately 1,200-mile route from Nogales, Arizona, to San Francisco, California. He traversed the area along the historic route now designated as the Juan Bautista de Anza Historic Trail. During the late 18th century, the Spanish mission fathers of the San Gabriel Arcángel, San Juan Capistrano, and San Luis Rey missions began colonizing the lands of the Native Americans, utilizing the interior valley of western Riverside County for growing grain and raising cattle. Mission San Gabriel Arcángel claimed lands in the present-day cities of Jurupa Valley, Riverside, and San Jacinto, and the San Gorgonio Pass; meanwhile, Mission San Luis Rey claimed land around present-day Lake Elsinore and the cities of Temecula and Murrieta. These lands were used for grazing large herds of mission-owned cattle and transporting sheep to market along mission trails.

After California joined the U.S., agriculture expanded as a growing number of Americans settled in the region. Introduced to the area in the late 19th century, the citrus industry grew dramatically during the late 19th and early 20th centuries and became the area's most important agricultural product. Other area industries of the late 19th and early 20th centuries included cattle ranching, sugar beet cultivation, and viticulture and enology. Historically, dairy farming has been integral to the culture and economy of the region, and the area's dairy industry began in Chino in 1895 with the establishment of a dairy and creamery by cattle ranchers Vail and Bates. Access to the plentiful beet pulp from the area's incipient sugar beet industry, along with readily available grazing lands, provided ideal conditions for raising dairy cattle. The local dairy industry expanded and flourished during the 20th century, particularly around the northern portion of the Project Area in eastern Chino and southern Ontario.

Around the turn of the century, Robert B. Taylor and Adolph Rimpau launched the development of Corona in the southern portion of the Project Area. Named for the circular Grand Boulevard, which outlines the city's original core, Corona became known for citrus and other food processing. Industrial, commercial, and residential investment and development markedly increased in the region after World War II. The former agricultural area west and southwest of the famed Norconian Club Resort and Hotel, which was built in 1929, was developed after World War II into an equestrian-friendly suburbia named Norco. Improved transportation networks have linked the area and its residents to the economies of the Los Angeles Basin and southern California as a whole.

Studies and Investigations

Four cultural resources studies have been conducted in connection with the Project, consisting of three cultural resources surveys and inventories (Hoffman et al., 2012; ICF, 2015a; ICF, 2015b) and one supplementary cultural resources records search (Williams, 2015). Additionally, outreach to potentially interested parties, including Native American representatives in compliance with AB 52, was conducted for the Project beginning in 2010, and continuing through 2016. The non-confidential portions of the reports from these investigations are presented in Appendix E.

Archival Research

Records searches of the California Historical Resources Information System (CHRIS) were conducted for the Project on six separate occasions, including four in 2010, and updates in 2015 and 2018. The records searches were conducted at applicable CHRIS repositories, including the Eastern Information Center (EIC) at the University of California, Riverside; the San Bernardino Archaeological Information Center (SBAIC) at the San Bernardino County Museum; and the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. The records searches included an examination of previous cultural resources survey coverage, reports, and known cultural resources within a half-mile radius of the Project Area. Documentation that was reviewed included survey and evaluation reports, archaeological site records, historic maps, National Register, California Office of Historic Preservation (OHP) Archaeological Determinations of Eligibility, California Register, California Historical Landmarks, California Points of Historical Interest, OHP Historic Properties Directory, and California Inventory of Historical Resources.

The records searches indicated that 209 cultural resources have been previously recorded within one-half mile of the Project Area, nine of which are prehistoric and 200 of which date to the historical period. Thirteen of these previously recorded resources (four archaeological and nine architectural) were documented in the Project Area. **Table 4.5-1** summarizes the previously recorded cultural resources in the Project Area.

TABLE 4.5-1
PREVIOUSLY RECORDED CULTURAL RESOURCES IN PROJECT AREA

Primary (P-)	Trinomial (CA-)	Resource Type	Description	Recorded by	Previous California Register-Eligibility
30-179857; 33-016681; 36-013627	SBR-12613H	Archaeological (historic-era)	Southern Sierra O Line (power transmission line)	Dice (2007)	Not eligible
33-000675	RIV-675	Archaeological (prehistoric)	Prehistoric Isolate-debitage	Smith (1952); Schwartz (1980)	Not eligible
33-003832	RIV-3832H	Archaeological (historic-era)	Atchison, Topeka, and Santa Fe segment	[many]	Unevaluated
33-006444	[none]	Architectural	Grand Boulevard Historic District	Mermilliod (2011)	Eligible
33-006525	[none]	Architectural	Single family residence	Eldridge (1983)	Eligible
33-006544	[none]	Architectural	Sunkist Plant	Hemma (1983)	Eligible
33-013347	[none]	Architectural	Single family residence	Van Horn (2004)	Not eligible
33-013348	[none]	Architectural	Single family residence	Van Horn (2004)	Not eligible
36-013412	RIV-16681H; SBR-12573H	Archaeological (historic-era)	Fuqua Ditch	Dice (2007)	Unevaluated
36-025440	[none]	Architectural	Chino Mira Loma No. 1 220kV Transmission Line	Tinsley (2010)	Not eligible
P871-4H	[none]	Architectural	Farm complex	Hatheway (1987)	Not applicable
P871-15H	[none]	Architectural	Dairy complex	Hatheway (1987)	Not applicable
P871-18H	[none]	Architectural	Dairy complex	Hatheway (1987)	Not applicable

SOURCES: Hoffman et al., 2012; ICF, 2015a; ICF, 2015b

The records searches also indicated that approximately 120 previous cultural resources studies have been conducted within one-half mile of the Project Area, 99 of which included a portion of the Project Area. Between 2012 and 2015, research on historical themes relevant to the Project Area was conducted at local libraries, online sources, and other sources of Southern California history. Research on specific architectural resources in the Project Area included use of historic aerial photographs, historic topographic maps, Sanborn maps, local inventories of historical resources, and parcel inquiry websites of the Riverside County and San Bernardino assessors.

Consultation

Native American Consultation under AB 52

AB 52 defines requirements for consultation between the CEQA lead agency and Native American tribes. Recognizing that "California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources" (PRC §21080.3.1(a)), AB 52 requires CEQA lead agencies to provide notice to tribes of a proposed project if the tribe has requested notice by the lead agency for projects proposed in that geographic area.

In October 2015, the CPUC contacted the NAHC to request a list of Native American representatives who may have interest in the Project. The list was received later the same month. In January 2016, the CPUC sent letters via certified mail to 52 Native American contacts identified in correspondence with the NAHC or otherwise known to have potential interest in the vicinity of the Project. As a result of the letters, the following three tribes have requested formal consultation with the CPUC, under PRC Section 21080.3.1: Soboba Band of Luiseño Indians (Soboba), Pechanga Band of Luiseño Indians (Pechanga), and the Gabrieleno Band of Mission Indians (Gabrieleno). In May 2016, the CPUC had separate teleconferences with representatives from the Gabrieleno and Pechanga. In May and June 2016, cultural resources technical reports prepared for the Project were provided to representatives from the Gabrieleno and Pechanga. No additional correspondence with Native American representatives has been conducted for the Project. During the CPUC's consultation efforts for the Project, no tribal cultural resources that potentially could be impacted by the Project were identified by any California Native American tribe (CPUC, 2016). Documentation of the CPUC's consultation with Native American representatives for AB 52 purposes is included in Appendix F, except for the map of village locations provided by the Gabrieleno; this map is confidential.

Field Surveys

SCE conducted cultural resources surveys of the Project Area in 2011, 2012, and 2015 (Hoffman et al., 2012; ICF, 2015a; ICF, 2015b). The surveys consisted of archaeological pedestrian surveys of the Project Area and architectural reconnaissance surveys of the Architectural Study Area.

The pedestrian surveys, carried out in 2011, 2012, and 2015, were conducted by walking parallel transects no more than 15-meters apart, where possible, and inspecting the surface for evidence of cultural resources; paved, developed, and landscaped areas were not surveyed in 15-meter transects due to their disturbed nature but were visually inspected for cultural resources. The reconnaissance surveys were conducted in 2011 and 2012, and included recording architectural

resources known to be or suspected of being 45 years old or older. All accessible portions of the Project Area were surveyed. Note, the following areas were not surveyed because they were not accessible: 1) Alternative C3 42 MW and 50 MW battery storage and substation sites and associated subtransmission line routes; 2) Alternative E1 overhead 66 kV line route along Quarry Street; and 3) Alternative E4 telecommunication line alignment from Railroad Street south to 3rd Street and east to Grand Boulevard.

Archaeological Sensitivity

The underlying geology of the Project Area consists of Holocene and late Pleistocene alluvial fan or channel deposits. Several small stream channels as well as the larger Santa Ana River cross the Project Area. Given the relatively recent age of the Project Area's underlying geological formations and its proximity to permanent and seasonal drainages, the potential for buried prehistoric archaeological deposits in undisturbed portions of the Project Area is moderate. However, the majority of the Project Area has been heavily disturbed by historical and modern activities, notably road construction, urban and industrial development, dairy farming, crop cultivation, and railroad activities.

Summary of Results

Architectural Resources

A total of 109 architectural resources 45 years of age or older were identified and documented in the Architectural Study Area during the architectural survey, two of which had been previously recorded in the Project Area (P-33-006444 and P-36-025440). Seven of the architectural resources previously recorded in the Project Area no longer remain (P-33-006525, P-33-006544, P-33-013347, P-33-013348, P871-4H, P-871-15H, and P871-18H). A newly recorded architectural resource (two commercial buildings) was identified in the Project Area at 1620 Magnolia Avenue, the proposed location of the Circle City Substation, and evaluated as not eligible for the California Register. Historic aerials show one additional property, Riverside County assessor's parcel number (APN) 119-190-011 (688 North Cota Street), has at least one building over 45 years old in the Architectural Study Area, but it is outside the Project Area. Access to the property was prevented during the survey and the building was not recorded, though the building is outside the Project Area and would not be impacted by the Project.

A portion of the previously recorded Grand Boulevard Historic District (P-33-006444) was identified in the vicinity of the proposed Pedley Source Lines alignment. The portion in the Project Area consists of the Grand Boulevard (Boulevard) streetscape from the intersection of the Boulevard and North Joy Street to the south, crossing underneath the State Route 91 overcrossing, and extending approximately 100 feet south of the intersection of the Boulevard and East 3rd Street. The District's National Register nomination form is lacking in detail with respect to specific features associated with the District and whether the features contribute to the District's significance; such features are considered "contributors." Within the Project Area, features that are clearly contributors to the District are limited to 10 concrete streetlights and luminaries, the Boulevard's roadway width and alignment, and the alignments of the Boulevard's intersections with East 2nd Street and East 3rd Street. There are 12 Mexican palm, Peruvian pepper, eucalyptus, and carob trees that match the species types of trees considered contributors

in the District's National Register nomination form; therefore, these are considered likely contributors to the District. Potential contributors to the District in the Project Area also include sidewalk segments along the inner-circle side of the Boulevard from the south corner of East 2nd Street and the Boulevard to approximately 100 feet south of the intersection of the Boulevard and East 3rd Street, and along the outer-circle side of the Boulevard from the southeast corner of East 3rd Street and the Boulevard to approximately 100 feet south of the same intersection. The resource is National Register-listed and a locally designated City of Corona Historic Landmark, with a period of significance of 1886 to 1928. Because it is National Register-listed, the resource is considered automatically eligible for the California Register. The District and surrounding area has undergone considerable development and visual change since its period of significance; these changes include new building development, associated streetscape features, and installation of subtransmission lines.

Previously recorded resource P-36-025440, the Chino-Mira Loma No. 1 220 kV Transmission Line, was not identified during the records searches conducted prior to the field surveys. However, the resource was identified during the supplemental records search conducted for the Project in 2015 (Williams, 2015). The resource is at the northernmost portion of the Project Area adjacent to the proposed Mira Loma-Jefferson 66 kV line alignment, and was previously determined not eligible for listing in the California Register.

During the surveys, a newly recorded architectural resource was identified in the Project Area, at 1620 Magnolia Avenue, the location of the proposed Circle City Substation site. The resource encompassed two Riverside County APNs (107-060-008 and 107-060-009) and consisted of two commercial buildings developed in the mid-1960s by the San Vallé Tile Kilns, Inc. SCE evaluated the resource as not eligible for the California Register (ICF, 2012). Since its documentation, both buildings have been demolished and removed from the site.

An additional 106 architectural resources were documented in the Architectural Study Area; however, they were not evaluated for California Register-eligibility because the resources themselves, as opposed to the parcels on which they are located, are all outside the Project Area and would not be directly impacted by the Project. In summary, one architectural resource within the Project Area, the Grand Boulevard Historic District (P-33-006444), qualifies as a historical resource under CEQA.

Archaeological Resources

Archaeologists attempted to locate the four archaeological resources previously recorded in the Project Area (i.e., P-33-000675, P-33-003832, P-36-013412, and P-33-016681/P-36-013627/ P-30-179857). Prehistoric isolate P-33-000675 was confirmed destroyed by paving, building construction, and landscaping associated with modern urban development in the area. No evidence of the portion of historic-era site P-33-003832 (Atchison, Topeka, and Santa Fe Railroad) recorded in the Project Area was observed during the field survey. Modern railroad and adjacent construction activities have apparently destroyed this portion of the alignment beyond recognition. The portion of historic-era site P-36-013412 (Fuqua Ditch) recorded in the Project Area has been destroyed by off-road vehicle use. The segment of P-33-016681/P-36-013627/P-

30-179857 (historic-era Southern Sierra O Line) previously recorded in the Project Area was visited and determined to no longer exist.

One archaeological resource, P-33-024245, was newly recorded in the Project Area as a result of the cultural resources surveys for the Project. The resource is a historic-era archaeological site between Quarry and East 3rd Streets. It consists of structural remains and associated refuse. Structural remnants are from a building and a well pad/house, while the refuse consists of cinderblock fragments, mortared brick, milled wood, green-painted concrete wall and stair fragments, metal strapping, and terracotta pipe fragments. The resource was evaluated and found to be not eligible for listing in the California Register and so does not qualify as a historical resource or as a unique archaeological resource. In summary, no archaeological resources considered historical resources or unique archaeological resources under CEQA were identified in the Project Area.

Tribal Cultural Resources

Outreach to Native American representatives, including that conducted by SCE and formal consultation conducted by CPUC, has not resulted in the identification of any tribal cultural resources, pursuant to PRC Section 21074(a) and 21080.3.1, in or near the Project Area. Additionally, no tribal cultural resources were identified in or in the vicinity of the Project Area through outreach to the NAHC, CHRIS records searches, or archaeological field surveys. Therefore, no tribal cultural resources are present in or in the vicinity of the Project Area.

4.5.2.3 Paleontological Setting

The following paleontological setting discussion is a condensed version of that presented in the 2015 paleontological resources technical report for the Project (SWCA, 2015). The paleontological resources technical report relied upon data from published maps, local museums with paleontology collections, and field surveys, which are considered standard and effective methods for determining the paleontological sensitivity of an area.

Geologic Context

The geology of the northern Santa Ana valley is highly varied, but in general terms consists of more recent unconsolidated sediments eroded from the surrounding mountains since the Late Pleistocene (12,000-2.6 million years ago [Mya]) overlaying older consolidated sedimentary deposits from the Pliocene to Early Pleistocene (5.3-2.6 Mya), which in turn overlay pre-Cenozoic (more than 66.4 Mya) crystalline bedrock. Because of the areal extent of the Project Area, a variety of these types of sediments and rocks can be encountered in the Project Area, as listed in **Table 4.5-2**. Of these geologic formations, Younger and Older alluvium (12,000 years to 2.6 million years), Quaternary Continental Deposits (781,000 years to 3.6 million years), and Tertiary Continental Deposits (2.6 to 23.7 million years) have produced fossil finds and so should be considered sensitive for paleontological resources.

TABLE 4.5-2
GEOLOGIC FORMATIONS OCCURRING WITHIN OR BENEATH THE PROJECT AREA

Geologic Formation	Map Symbol(s)	Description	Age	Fossil Presence
Modern river deposits	Qw	Recently deposited unconsolidated sediments along river channels	Recent	None due to age
Younger alluvium	Qya, Qyw, Qye, Qf, Qyf	Unconsolidated channel deposits, overbank wash deposits, eolian deposits, and alluvial fans	Holocene to Late Pleistocene (0-12,600 years old)	Older sediments have the potential to yield fossils
Older alluvium	Qof, Qvof, Qow, Qoa, Qvoa	Moderately consolidated fans containing gravels and cobbles; alluvial channels containing sand, gravel, and silt	Late to Early Pleistocene (12,000 years-2.6 million years old)	Similar deposits have yielded important fossils
Quaternary Continental Deposits	Qss	Moderately indurated sandstone, conglomeratic sandstone, and conglomerate	Early Pleistocene to Late Pliocene (781,000 years-3.6 million years old)	Older sediments have the potential to yield fossils
Tertiary Continental Deposits	Tss, Tsh	Moderately dissected sedimentary rocks deposited in marine and shallow-water marine environments	Pliocene to Miocene (2.6-23.7 million years old)	Bivalves, gastropods, crustaceans, and vertebrates have been recovered from Tsh unit
Basement Complex	Kv	Metamorphic and intrusive igneous rocks	Cretaceous (66-144 million years ago)	Very low likelihood, due to lithology

SOURCE: SWCA, 2015.

Paleontological Potential

To identify paleontological resources within the Project boundaries and to determine the paleontological sensitivity of formations within the Project Area, two records searches were conducted for the Project at the Natural History Museum of Los Angeles County and the San Bernardino County Museum. In addition, a field survey of the Project Area was conducted in July 2015 (SWCA, 2015). Note, these records searches and survey did not cover the following areas: 1) Alternative C3 42 MW and 50 MW battery storage and substation sites and associated subtransmission line alignments; 2) Alternative E1 overhead 66 kV line route along Quarry Street; and 3) Alternative E4 telecommunication line alignment from Railroad Street south to 3rd Street and east to Grand Boulevard.

While no previously recorded vertebrate fossil localities occur within the Project Area, the same or similar sedimentary deposits as found in the Project Area have yielded diverse vertebrate fossils nearby. The following formations or subunits have a high potential to yield vertebrate fossils: fine-grained regions of Pleistocene alluvial deposits, older Pleistocene and Pliocene sandstones, the Norco formation, and early Pleistocene fan deposits. Both locally and regionally, these deposits have yielded vertebrate fossils. This includes *Mammut americanum* (mastodon), *Camelops* (extinct large camel), and *Bison* (bison) from Pleistocene alluvial deposits within one-quarter mile of the Project Area. In addition, numerous scientifically important fossil localities

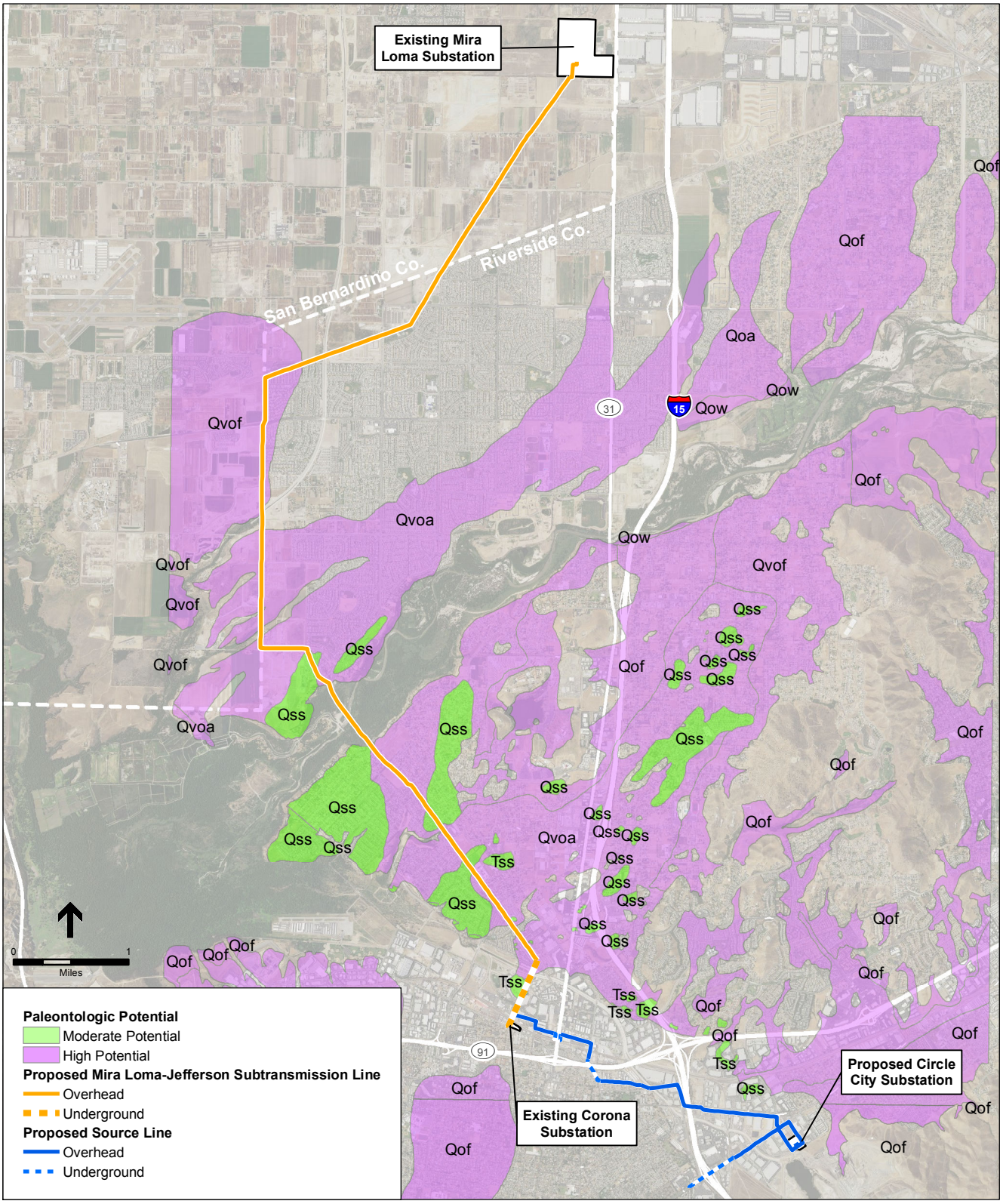
have been identified within Quaternary older alluvial fan deposits and alluvial sediments of similar age and lithology throughout Riverside and San Bernardino counties and elsewhere in southern California.

The paleontological potential of geologic formations within the Project Area and vicinity are summarized in **Table 4.5-3**, *Paleontological Potential of Geological Formations.* For this EIR, modified designations of the Bureau of Land Management Potential Fossil Yield Classification (PFYC) have been used to more clearly distinguish the fossil value of the formations. The PFYC system is based on the "relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts." Specific to this EIR, designations are limited to "No Potential" for units that are not likely to contain significant fossils due to their young ages (Late Holocene) or crystalline nature (e.g., metamorphic rocks). "Moderate Potential" is designated for units that are known to have yielded significant fossils in other regions but fossils are generally not common. Units that are deemed "High Potential" are known to yield significant fossils in the region and are of the correct geologic age, paleoenvironment, and grain size that it is very likely that fossils may be encountered in the Project Area. This designation provides more control then the "High," "Unknown," and "No" potential designations of the Society of Vertebrate Paleontology. The proposed Mira Loma-Jefferson 66 kV subtransmission line alignment traverses geologic formations of moderate or high paleontological potential for approximately half of its length, from northeast of Hellman Avenue to just north of the Corona Substation. Refer to **Figure 4.5-1**, *Paleontological Potential of Geologic Formations*, for a map that depicts the paleontological potential in the Project Area.

TABLE 4.5-3
PALEONTOLOGICAL POTENTIAL OF GEOLOGIC FORMATIONS

Geologic Formation	Map Symbol(s)	Paleontological Potential
Artificial fill	Not mapped	No potential
Modern river deposits	Qw	No potential
Channel deposits	Qya	No potential
Young alluvial wash deposits	Qyw	No potential
Eolian deposits	Qye	No potential
Young fans	Qf	No potential
Alluvial fans	Qyf	No potential
Older fans (but younger than Qvof)	Qof	High potential
Older fans	Qvof	High potential
Old alluvial wash deposits	Qow	High potential
Older alluvium (but younger than Qvoa)	Qoa	High potential
Older alluvium	Qvoa	High potential
Older sandstone	Qss	Moderate potential
Coarser Tertiary units	Tss	Moderate potential
Finer Tertiary units	Tsh	High potential
Various metamorphic and igneous basement rocks	Kv	No potential

SOURCE: SWCA, 2015.



SOURCE: SCE, 2015; Gray, C. H., Jr., Morton, Douglas M., Weber, F. Harold, Jr., Bovard, Kelly R., O'Brien, Timothy, 2002; Morton, Douglas M., Gray, C. H., Jr., Bovard, Kelly R., Dawson, Michael, 2001

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.5-1

Paleontological Potential of Geologic Formations

Despite the sensitivity of formation within the Project Area, the field survey did not result in the discovery of any new fossil localities. The two nearest previously documented fossil localities are located east of the northern portion of the proposed Mira Loma-Jefferson 66 kV line alignment in the Chico Basin, and west of the alignment in the Temescal Wash.

4.5.2.4 Regulatory Setting

State

California Environmental Quality Act

The State implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, oversees adherence to CEQA regulations. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdiction. Typically, a resource must be more than 50 years old to be considered as a potential historic resource. The OHP advises recordation of any resource 45 years or older, since there is commonly a 5-year lag between resource identification and the date that planning decisions are made.

CEQA (*codified at Public Resources Code [PRC] §21000 et seq.)* is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a project would have a significant effect on historical resources, unique archaeological resources, or tribal cultural resources.

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on the environment if it will "…disrupt or adversely affect a paleontologic resource or site or unique geologic feature, except as part of a scientific study."

Historical Resources

CEQA's provisions governing analysis of historical resources are set forth in PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)-(b). CEQA includes objects of historical significance in its definition of "environment" (PRC §21060.5). Per CEQA Guidelines Section 15064.5, the term "historical resource" is defined as:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (California Register).
2. A resource included in a local register of historical resources or identified as significant in a historical resources survey shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site area, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific,

economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a cultural resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register, including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Archaeological Resources

CEQA includes detailed standards governing the analysis of impacts on archaeological resources (PRC §21083.2; CEQA Guidelines §15064.5[c]-[f]). If the lead agency determines that a project may have a significant effect on unique archaeological resources, the analysis must address those archaeological resources (PRC §21083.2[a]). An environmental document need not address effects on archaeological resources that are not unique (PRC §21083.2[a], [h]). The term "unique archaeological resource" under PRC Section 21083.2(g) refers to an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

Assembly Bill (AB) 52, enacted in September 2014, recognizes that California Native American tribes have expertise with regards to their tribal history and practices. The bill established a new category of cultural resources known as tribal cultural resources to consider tribal cultural values when determining impacts on cultural resources. PRC Section 21074(a) defines a tribal cultural resource as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - included or determined to be eligible for inclusion in the California Register; or
  - included in a local register of historical resources, as defined in PRC Section 5020.1(k).

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.
- A cultural landscape that meets the criteria of PRC Section 21074(a) is also a tribal cultural resource if the landscape is geographically defined in terms of the size and scope.
- An historical resource as described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2, or a non-unique archaeological resource as defined in PRC Section 21083.2 may also be a tribal cultural resource if it meets the criteria of PRC Section 21074(a).

AB 52 requires lead agencies to analyze project impacts on "tribal cultural resources," separately from archaeological resources (PRC §§21074 and 21083.09), in recognition that archaeological resources have cultural values beyond their ability to yield data important to prehistory or history. AB 52 also defines "tribal cultural resources" in a new section of the PRC Section 21074 (see above), and requires lead agencies to engage in additional consultation procedures with California Native American tribes (PRC §§21080.3.1, 21080.3.2, 21082.3). The provisions of AB 52 apply to projects that have a notice of preparation or notice of negative declaration/mitigated negative declaration filed on or after July 1, 2015. As such, AB 52's tribal consultation requirements apply to the Project.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC §5024.1[a]). The criteria for eligibility for the California Register are based upon National Register of Historic Places (National Register) criteria (PRC §5024.1[b]), as defined above. Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age, and retain enough of its historic character or appearance (integrity) to convey the reason for its significance. Additionally, the California Register consists of resources that are listed automatically and those that must be

nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historic resources;
- Historic resources contributing to historic districts; and
- Historic resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Public Resources Section 5097

California PRC Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any such artifacts or human remains is guilty of a felony, which is punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell of dissect or with malice or wantonness is also guilty of a felony which is punishable by imprisonment. PRC Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor.

California Native American Historic Resource Protection Act

The California Native American Historic Resources Protection Act of 2002 imposes civil penalties, including imprisonment and fines up to $50,000 per violation, for persons who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register.

California Health and Safety Code Section 7050.5

Section 7050.5 of the HSC protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery. PRC Section 5097.98 (and reiterated in *CEQA Guidelines* Section 15064.59 [e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

California Penal Code Section 622.5

The California Penal Code *Section* 622.5 sets the penalties for the damage or removal of paleontological resources.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order (G.O.) 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project. Accordingly, the following discussion of local regulations is provided for informational purposes only.

The general plans and municipal codes were reviewed for relevant local policies pertaining to cultural resources for the cities of Chino, Corona, Eastvale, Norco, and Ontario; for all specific plan areas that would be crossed by the Project; and for Riverside County and San Bernardino County. Policies related to paleontological resources, but not cultural resources, are present in the San Bernardino County General Plan. The following local policies regarding cultural and paleontological resources may apply to the Project.

Riverside County General Plan

The Riverside County General Plan Multipurpose Open Space Element contains the following policies pertaining to cultural resources and paleontological resources:

> *Policy OS 19.2:* Review all proposed development for the possibility of archaeological sensitivity.
>
> *Policy OS 19.4:* Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources.
>
> *Policy OS 19.6:* Whenever existing information indicated that a site proposed for development has high paleontological sensitivity as shown [in the Riverside County Paleontological Sensitivity map], a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.
>
> *Policy OS 19.7:* When[e]ver existing information indicates that a site proposed for development has low paleontological sensitivity as shown in [the Riverside County Paleontological Sensitivity map], no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
>
> *Policy OS 19.8:* Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown [in the Riverside County

Paleontological Sensitivity map], a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources.

City of Chino General Plan

The City of Chino General Plan Open Space and Conservation Element contains the following policies that pertain to cultural and paleontological resources:

Policy P1: The City shall ensure that identified cultural and historic landmarks and buildings are preserved, unless the City finds that such preservation is economically infeasible.

Policy P3: In the event that unknown archaeological or paleontological resources are discovered during construction, the Planning Division shall be notified immediately. All construction shall stop and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology should be retained to evaluate the discovered resources and recommend appropriate action.

Policy P4: If Native American artifacts are discovered on a site, the City shall consult representatives of the Native American community to ensure the respectful treatment of Native American sacred places.

Policy P5: Where applicable, any human remains discovered during implementation of public and private projects within the Planning Area should be treated with respect and dignity and should fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws.

City of Corona General Plan

The City of Corona General Plan Historic Resources Element contains the following policies that pertain to cultural and paleontological resources:

Policy 4.3.3: Archaeological resources found prior to or during construction shall be evaluated by a qualified archaeologist, and appropriate mitigation measures applied, pursuant to Section 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the appropriate CHRIS information center.

Policy 4.3.4: Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive, shall require evaluation of the site by a qualified archaeologist retained by the project applicant. The applicant shall implement the recommendations of the archaeologist, subject to the approval of the City Planning Department.

Policy 4.3.5: Any project that involves earth-disturbing activities in previously undisturbed soils that have been determined to be archaeologically or culturally sensitive shall require consultation by the applicant with interested federally recognized American Indian Tribe(s) that have a traditional cultural affiliation with the Project Area and/or the resources affected by the project, for the purposes of determining archaeological and cultural resources impacts and creating appropriate mitigation to address such impacts. The applicant shall also arrange for monitoring of earth-disturbing activities by interested federally recognized American

Indian Tribe(s) that have a traditional cultural affiliation with the Project Area and/or the resources affected by the project, if requested.

Policy 4.3.6: Any project that involves earth-disturbing activities in soil or rock units known or reasonably suspected to be fossil-bearing shall require monitoring by a qualified paleontologist retained by the project applicant for the duration of excavation or trenching.

Policy 4.3.7: Paleontological resources found prior to or during construction shall be evaluated by a qualified paleontologist, and appropriate mitigation measures applied, pursuant to Section 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the Riverside County Museum of Natural History.

Policy 4.3.8: In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the project applicant immediately shall notify the Riverside County Coroner of the find and comply with the provisions of the California Health and Safety Code Section 7050.5, including P.R.C. Section 5097.98, if applicable. In the event that human remains are determined to be Native American human remains the applicant shall consult with the Most Likely Descendent (MLD) to determine the appropriate treatment for the Native American human remains.

City of Corona Downtown Revitalization Specific Plan

The City of Corona Downtown Revitalization Specific Plan contains the following policy that pertains to cultural resources:

Policy 3.B.3: Preserve historic buildings and structures in the Specific Plan area.

City of Norco General Plan

The Land Use Element of the City of Norco General Plan contains the following policies that pertain to cultural resources:

Policy 2.7.1a: Sites of significant historical, archaeological, and cultural value shall be preserved and/or incorporated into proposed new development with mitigation measures established through the environmental review process.

Policy 2.7.2b: New development requiring discretionary approval from the Planning Commission shall be approved with a condition that requires any construction activity to stop upon discovery of archaeological resources until such time as a qualified archaeologist, retained by the property owner or developer, has investigated the site and made recommendations regarding the disposition of any items. Human remains shall not be moved until the Riverside County's Coroner's Office has been notified.

City of Norco Municipal Code

Chapter 2.26 Historic Preservation Commission of the City of Norco Municipal Code defines the Historic Preservation Commission, which consists of five members. The municipal code describes the Historic Preservation Commission's responsibilities, such as the responsibility to make recommendations to the City Council about the designation of cultural resources.

Paleontological Professional Standards

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources. Practicing paleontologists in the nation adhere to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists. The SVP has helped define the value of paleontological resources and in particular, states the following:

- Vertebrate fossils and fossiliferous deposits are considered significant nonrenewable paleontological resources, and are afforded protection by federal, state, and local environmental laws and guidelines.
- A paleontological resource is considered to be older than recorded history or 5,000 years before present and should not be confused with archaeological resource sites.
- Invertebrate fossils are not significant paleontological resources, unless they are present with an assemblage of vertebrate fossils or they provide undiscovered information on the origin and character of the plant species, past climatic conditions, or the age of the rock unit itself.
- Certain plant or invertebrate fossils may be designated as significant by a project paleontologist, special interest group, lead agency, or local government.

With these principles, the SVP (1995) has outlined criteria for screening the paleontological potential[1] of rock units and established assessment and mitigation procedures tailored to such potential. **Table 4.5-4** lists the criteria for high-potential, undetermined, and low-potential rock units.

TABLE 4.5-4
PALEONTOLOGICAL POTENTIAL CRITERIA

Paleontological Potential	Description
High	Geologic units from which vertebrate or significant invertebrate or plant fossils have been recovered in the past, or rock formations that would be lithologically and temporally suitable for the preservation of fossils. Only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant.
Undetermined	Geologic units for which little to no information is available.
Low	Geologic units that are not known to have produced a substantial body of significant paleontological material, as demonstrated by paleontological literature and prior field surveys, and which are poorly represented in institutional collections.

SOURCE: SVP, 1995.

It is important to note that while paleontological potential as defined above can provide a rough idea of whether subsurface fossils may exist, it prescribes a very low threshold for identifying a rock unit as high potential. It would include most sedimentary rock units older than recent, and any other rock type (i.e., igneous or metamorphic) that have yielded

[1] Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource.

a vertebrate or significant invertebrate or plant fossils anywhere within their geographic extents. This low threshold is reasonable; however, because as largely buried resources, the uniqueness or significance of a fossil locality is unknown until it is identified to a reasonably precise level. As such, any fossil discovery should be treated as potentially unique or significant until determined otherwise by a professional paleontologist.

4.5.3 Significance Criteria

According to Appendix G of the CEQA Guidelines, project would result in significant cultural resources effects on the environment if it would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or,

d) Disturb any human remains, including those interred outside of formal cemeteries.

e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

4.5.4 Applicant Proposed Measures

SCE has proposed the following applicant proposed measure (APM) to minimize impacts on paleontological resources from the Project. The impact analysis assumes that the APM would be implemented (i.e., part of the Project) to reduce impacts to paleontological resources as discussed below.

> **APM PAL-01: Paleontological Resources Management Plan.** A Paleontological Resources Management Plan would be developed for construction within areas that have been identified as having a moderate and high sensitivity for paleontological resources, and would identify monitoring and treatment requirements for sensitive paleontological resources of significance. The Paleontological Resources Management Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology.

4.5.5 Impacts and Mitigation Measures

4.5.5.1 Approach for Cultural Resources Analysis

Historical Resources

Impacts to historical resources are assessed by identifying any activities such as new construction, demolition, or substantial alteration that would affect resources that have been identified as historical. Individual properties and districts identified as historical resources under CEQA include those that are significant because of their association with important events, people, or

architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4) and that retain sufficient historic integrity to convey their significance. Criterion 4 is typically applied to the evaluation of archaeological resources and not to architectural resources. Note, historical resources may include architectural resources, archaeological resources, and tribal cultural resources.

Once a resource has been identified as significant, it must be determined whether the impacts of the project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines §15064.5[b]). A substantial adverse change in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (CEQA Guidelines §15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines §15064.5[b][2]). Therefore, material impairment of historical resources constitutes a significant impact.

Archaeological Resources

The significance of most prehistoric and historical archaeological sites is typically assessed under California Register Criterion 4. This criterion stresses the importance of the information potential contained within a site, rather than its significance as a surviving example of a type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in CEQA Guidelines Section 15064.5[a], or they may be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC §21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources; that is, if the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings occurs such that the significance of [the] historical resource would be materially impaired (CEQA Guidelines §15064.5[b][1]). As previously stated, a historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines §15064.5[b][2]). Therefore, material impairment of archaeological resources considered historical resources or unique archaeological resources constitutes a significant impact.

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and HSC Section 7050.5. These laws are identified above in State Regulations. For the purposes of this analysis, intentional disturbance, mutilation, or removal of interred human remains constitutes a significant impact.

Tribal Cultural Resources

Effective for projects for which a notice of preparation or notice of negative declaration/mitigated negative declaration was filed on or after July 1, 2015, CEQA requires that a project's impacts on tribal cultural resources be considered as part of the overall analysis of project impacts (PRC §§21080.3.1, 21084.2, 21084.3). The significance of a tribal cultural resource is assessed by evaluating: 1) its eligibility for listing on the California Register; 2) its eligibility as a unique archaeological resource pursuant to PRC Section 21083.2; and, 3) its listing status on the NAHC's SLF. Additionally, a lead agency can independently determine a resource to be a tribal cultural resource. Because California Native American tribes are considered experts with respect to tribal cultural resources, the analysis of whether project impacts may result in a substantial adverse change to the significance of a tribal cultural resource is heavily dependent on consultation efforts conducted between the lead agency and relevant California Native American tribes during the CEQA process.

4.5.5.2 Approach for Paleontological Resources Analysis

As discussed in Section 4.5.1, geologic units with paleontological potentials of high and moderate are traversed by the Project. This analysis considers impacts to potential nonrenewable paleontological resources during Project construction and operation, including damage or destruction. Based on the significance definitions of the SVP, all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and its distribution. Any fossil discovery is therefore treated as potentially unique or significant until determined otherwise by a professional paleontologist. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. A geologic unit known to contain significant fossils is considered to be "sensitive" and vulnerable to adverse impacts if there is a high probability that ground-disturbing activities in that unit would either disturb or destroy fossil remains directly or indirectly. An impact would be considered significant if the information potential contained within a site is lost due to destruction or disturbance of fossil remains without proper protection and documentation.

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5

Impact 4.5-1: Implementation of the Project could cause a substantial adverse change in the significance of the Grand Boulevard Historic District. *Less than significant with mitigation* (Class II)

A portion of one historical resource, the Grand Boulevard Historic District (P-33-006444), is present in the Project Area and would be impacted by construction of the proposed Pedley Source Lines. The portion of the District that would be affected by the Project is the Boulevard streetscape from the intersection of the Boulevard and North Joy Street to the south, crossing underneath the State Route 91 overcrossing, and extending approximately 100 feet south of the

intersection of the Boulevard and East 3rd Street. Contributing features to this part of the District are limited to 10 concrete streetlights and luminaries, the Boulevard's roadway width and alignment, and the alignments of the Boulevard's intersections with East 2nd Street and East 3rd Street. There are 12 trees (Mexican palm, Peruvian pepper, eucalyptus, and carob) in the Project Area that are likely contributing elements to the District. Other potential contributors to the District in the Project Area include sidewalk segments along the inner-circle side of the Boulevard from the south corner of East 2nd Street and the Boulevard to approximately 100 feet south of the intersection of the Boulevard and East 3rd Street, and along the outer-circle side of the Boulevard from the southeast corner of East 3rd Street and the Boulevard to approximately 100 feet south of the same intersection. The resource is National Register-listed and a locally designated City of Corona Historic Landmark, with a period of significance of 1886 to 1928. Because it is National Register-listed, the resource is automatically eligible for the California Register.

The District and surrounding area has undergone considerable development and visual change since its period of significance. These changes include new building development, associated streetscape features, and installation of power lines. Project activities that would occur in the District include installation of underground subtransmission line duct banks and vaults associated with the Pedley Source Lines within the Boulevard. As such, the Project would not result in any major alterations to the existing setting of the District. Therefore, the Project would not result in a significant indirect impact (e.g., change in character of setting or use; neglect; introduction of visual, atmospheric, or audible elements) to the District.

Construction and operation activities associated with the proposed Pedley Source Lines would avoid direct physical impacts resulting in physical demolition, destruction, relocation, or alteration of features that are contributors, likely contributors, or potential contributors to the Grand Boulevard Historic District. The majority of sidewalk segments, curbs, and gutters are not considered contributors to the District, as they post-date its period of significance. This includes the portions of the sidewalk in the immediate vicinity of the proposed underground subtransmission alignment along 3rd Street, constructed post-1959. The existing distribution lines within the Project Area are not considered contributors to the District, and their replacement would not result in a direct impact to the District. Direct impact resulting from the Project in the vicinity of the District would all occur within the existing roadway and away from contributing elements to the District. As such, the Project is not anticipated to result in physical demolition, destruction, relocation, or alteration of features that are contributors, likely contributors, or potential contributors to the Grand Boulevard Historic District.

Though the Project is not anticipated to result in any significant impacts to the Grand Boulevard Historic District, this conclusion is based on early, general, design. As noted above, there are several contributing elements to the District in the Project Area near the area where the proposed Pedley Source Line construction would occur. If the Project were to damage these elements, it could constitute a substantial adverse change in the significance of the District; this would be a significant impact. Such a significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 4.5-1, which would require that the contributing elements of the District be identified on Project construction plans and avoided during all phases of the Project.

Mitigation Measure 4.5-1: ~~Prior to commencing Project-related construction activities associated with the Pedley Source Lines or the Alternative E4 telecommunication line, an architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History shall assist Project engineers in identifying and labeling for avoidance on construction plans all contributing elements of the Grand Boulevard Historic District (P-33-006444) located in or adjacent to the Project Area – these contributing elements to the District shall subsequently be avoided during Project implementation.~~

SCE shall prepare a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources shall follow the State standards and guidelines established in Public Resources Code (PRC) Sections 21083.2 and 21084.1 through 21084.3, as well as CEQA Guidelines Section 15064.5 and Appendix G. The CRMP shall be submitted to the CPUC for review and approval at least 30 days prior to the start of construction. The CRMP shall require, but not be limited to, the following:

1. *Construction Plan Review/Markup*: An architectural historian meeting the Secretary of the Interior's Professional Qualifications Standards for Architectural History shall assist project engineers in identifying and labeling for avoidance on construction plans all contributing elements of the Grand Boulevard Historic District (P-33-006444) located in or adjacent to the project construction area.

2. *Cultural Resource Monitoring and Field Reporting*: Detailed procedures shall be followed for archaeological monitoring and reporting, and for determining when monitoring is no longer necessary. Such procedures shall include, but not necessarily be limited to: archaeological monitoring – the monitor shall meet the Secretary of the Interior's Professional Qualifications for Archeology, mapping of areas to be monitored (i.e., areas of moderate potential for archaeological resources that are in previously undisturbed sediment), and implementation of Unanticipated Discovery Protocol in the event of any identified archaeological deposits, including human remains and potential tribal cultural resources (see below); determining when monitoring is no longer necessary – confirmation that ground-disturbing work is complete in areas of moderate potential for archaeological resources that are in previously undisturbed sediment before the determination is made that monitoring is complete; reporting – submission of an archaeological monitoring report to the CPUC upon completion of construction monitoring and subsequent submission to the California Historical Resources Information System (CHRIS) upon approval by the CPUC.

3. *Unanticipated Discovery Protocol*: Detailed procedures for halting construction, defining work stoppage zones, notifying stakeholders (e.g. agencies, Native American tribes, utilities), and assessing California Register-eligibility of cultural resources, including human remains and potential tribal cultural resources in the event that any such resources are encountered during construction. Such procedures shall include, but not necessarily be limited to the following:

    a. If prehistoric or historic-era archaeological resources are encountered during construction, SCE and/or its contractors shall immediately cease all construction activity within 100 feet of the find and flag off the area for avoidance.

    b. The CPUC shall be immediately informed of the discovery.

c. A qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment.

d. If human remains are uncovered during construction, SCE and/or its contractors shall immediately halt all work within 100 feet of the discovery, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, the county coroner shall contact the NAHC within 24 hours, in accordance with California Health and Safety Code Section 7050.5(c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further construction activities until SCE and the CPUC have discussed and conferred, as prescribed in PRC Section 5097.98, with the most likely descendants regarding their recommendations for treatment of the human remains, including, if applicable, taking into account the possibility of multiple human remains.

e. If the CPUC determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.

4. *Treatment Measures*: If avoidance of a resource that may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC § 21074), is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4(b). Treatment shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the resource. The CRMP shall detail methods for data recovery, including analysis in a regional context, reporting of results within 1 year of completion of field studies, curation of artifacts and data (e.g., maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by the CPUC, and dissemination of reports to appropriate repositories, including the CHRIS.

Significance after Mitigation: Less than Significant.

Impact 4.5-2: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered historical resources. ***Less than significant with mitigation*** **(Class II)**

The Project Area's potential for surficial archaeological deposits, prehistoric or historic-era, is very low. The Project Area's potential for subsurface prehistoric archaeological deposits is moderate in areas not having undergone substantial ground disturbance in the past and at depths below limits of previous ground disturbance, while the Project Area's potential for subsurface prehistoric archaeological deposits is very low in other areas. The Project Area's potential for subsurface historic-era archaeological deposits is low to moderate. Since the nature of the Project would involve ground-disturbing activities that may extend into undisturbed soil, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that were not identified on the surface. If previously undiscovered archaeological deposits are present in the Project Area, and if they are found to qualify as historical resources, impacts to the resources resulting from the Project would be significant. Such significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource. The potential impact to previously undiscovered historical resources, and the associated Mitigation Measure 4.5-~~2~~1, applies to all components of the proposed Project.

> **Mitigation:** Implement Mitigation Measure 4.5-1 (see above).
>
> ~~**Mitigation Measure 4.5-2:** If prehistoric or historic-era archaeological resources are encountered during Project implementation, SCE and/or its contractors shall immediately cease all construction activity within 100 feet of the find and flag off the area for avoidance. The CPUC and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.~~
>
> ~~If the CPUC determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines §15064.5), or a tribal cultural resource (as defined in PRC §21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.~~

~~If avoidance is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4(b). This shall include documentation of the resource and may include data recovery or other measures. Any treatment other than preservation in place must be approved by the CPUC and the appropriate tribe if applicable. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.~~

Significance after Mitigation: Less than Significant.

---

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

Impact 4.5-3: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered archaeological resources. *Less than significant with mitigation* (Class II)

No archaeological resources considered historical resources or unique archaeological resources under CEQA were identified in the Project Area. Therefore, the Project would not result in a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

The Project Area's potential for surficial archaeological deposits, prehistoric or historic-era, is very low. The Project Area's potential for subsurface prehistoric archaeological deposits is moderate in areas not having undergone substantial ground disturbance in the past and at depths below limits of previous ground disturbance, while the Project Area's potential for subsurface prehistoric archaeological deposits is very low in other areas. The Project Area's potential for subsurface historical archaeological deposits is low to moderate. Since the nature of the Project would involve ground-disturbing activities that may extend into undisturbed soil, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that were not immediately observable on the surface. If any previously undiscovered archaeological deposits are in the Project Area and found to qualify as a historical resource or unique archaeological resource, impacts would be significant.

Implementation of Mitigation Measure 4.5-~~2~~1, which would require a qualified archaeologist to enact recovery measures in the event of an inadvertent discovery of archaeological resources, would reduce the impact to archaeological resources to less than significant.

Mitigation: Implement Mitigation Measure 4.5-~~2~~1 (see above).

Significance after Mitigation: Less than Significant.

---

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact 4.5-4: Project implementation could directly destroy a unique paleontological resource. *Less than Significant with mitigation* (Class II)

Construction-associated grading or excavation for Project components along the alignments could directly or indirectly destroy paleontological resources. Approximately half of the Mira Loma-Jefferson subtransmission line alignment is located in areas mapped with moderate to high paleontological potential (as shown on Figure 4.5-1). The proposed Circle City Substation site and the source line alignments are not in areas mapped with moderate or high paleontological potential. Geologic formations or units with moderate and high paleontological sensitivity are buried by younger, low sensitivity units in some portions of the Project Area, while in other areas these moderate- to high-sensitivity units outcrop at the ground surface. Based on the results of the records review and the field survey, there are no known fossils on the ground surface within the Project Area. In areas of low paleontological potential (mapped as artificial fill, recent wash, fan alluvium, and alluvial wash deposits), the likelihood that excavations shallower than 10 feet would encounter fossils in the shallow subsurface is low. For this reason, shallow excavations in these geologic units are not expected to destroy paleontological resources. However, excavations below 10 feet in these areas are likely to encounter older deposits that may host significant fossils, particularly in the finer grained deposits.

Project implementation would have much greater potential to directly or indirectly destroy significant nonrenewable paleontological resources during excavation in areas mapped as having moderate or high paleontological potential, such as those along the Mira Loma-Jefferson subtransmission line alignment. Impacts to such resources would constitute a significant impact.

The Project would include implementation of APM PAL-01, which requires the development of a Paleontological Resources Management Plan for construction within areas that have been identified as having a moderate and high potential for paleontological resources. APM PAL-01 also stipulates monitoring and treatment requirements for significant paleontological resources. This Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology. However, APM PAL-01 lacks specific detail and performance standards required to ensure that the impact would not be significant. With the addition of performance standards identified in **Mitigation Measure 4.5-4**, the Paleontological Resources Management Plan would be required to include measures applicable to moderate and highly sensitive geologic units, and the impact of the Project on paleontological resources in these areas would be reduced to less than significant.

The Paleontological Resources Management Plan required by APM PAL-01 does not include any measures for Project areas not mapped as having moderate or high potential, such as the proposed Circle City Substation site and along the source line alignments. However, excavations deeper than

10 feet, even in areas mapped as low potential, could encounter subsurface geologic formations or units with higher potential. Project-related excavations that would exceed 10 feet would be required for light-weight steel pole and tubular steel pole foundation installations, vault installations, and horizontal bore pits. While the review conducted for this analysis provides sufficient detail to identify Project impacts on paleontological resources, pre-construction activities, and particularly geotechnical investigations, would provide additional data that could be used to better identify the paleontological sensitivity of the subsurface rocks or sediments affected by the Project. With implementation of Mitigation Measure 4.5-4**,** impacts on unique paleontological resources or unique geological features would be reduced to a less-than-significant level.

Mitigation Measure 4.5-4: The Paleontological Resources Management Plan, required by APM PAL-01, shall include the following monitoring and treatment requirements.

***Monitoring Requirements*.** Before and during Project-related ground disturbing activities, Project work shall be conducted such that any fossil remains encountered are recovered in their entirety. The monitoring measures in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following:

- Geotechnical borings collected during geotechnical investigations, as available, shall be reviewed by a professional paleontologist for subsurface paleontological potential prior to construction. If the professional paleontologist identifies units with high or moderate paleontological potential in the geotechnical borings, the professional paleontologist shall incorporate any additional monitoring recommendations needed to conduct work such that any unique paleontological resources are not destroyed.
- Qualified personnel shall monitor excavations in areas identified as having moderate to high sensitivity for paleontological resources, and in areas mapped as Qaf, Qw, Qf, Qyw, Qyf, Qya, or Qye but which include excavations greater than 10 feet deep.
- Qualified personnel shall be equipped to salvage and recover fossils and take sediment samples, and shall be empowered to temporarily halt or divert construction equipment to allow removal of abundant/large specimens.
- Should the ongoing monitoring results indicate that the paleontological sensitivity of the subsurface sediments within the project area is lower or higher than anticipated, the monitoring level of effort shall be adjusted (increased, decreased, or suspended) accordingly.
- If subsurface fossils are encountered during construction and monitor is not present, qualified paleontologist should be notified immediately and work in the immediate area (50 feet) of the discovery should cease until discovery can be evaluated.

Treatment requirements. Any fossils collected during Project activities must be placed in an accredited scientific institution for the benefit of current and future generations. The treatment requirements in the Paleontological Resources Management Plan shall be conducted in accordance with Society of Vertebrate Paleontology standards and include, but not be limited to, the following:

- Preparation of specimens by qualified professionals to a point of identification and permanent preservation.

- Preparation by qualified professionals of a report of findings and inventory of resources recovered.
- Placement of any collected fossils in an accredited museum repository with permanent retrievable paleontologic storage.
- Documentation of curation into an established museum repository (prior to which treatment shall not be considered complete).

Significance after Mitigation: Less than significant.

---

d) Disturb any human remains, including those interred outside of formal cemeteries.

Impact 4.5-5: Project construction could result in damage to previously unidentified human remains. *Less than Significant with mitigation* (Class II)

The Project would not disturb known human remains. The land use designations for the Project component sites and alignments do not include cemetery uses, and no known human remains exist within the Project Area. However, since the nature of the Project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. In the event that human remains were discovered during Project construction activities, impacts to the human remains resulting from the Project would be significant if those remains were disturbed or damaged. Such impacts would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered.

Mitigation ~~Measure 4.5-5~~: ~~If human remains are uncovered during Project construction, SCE and/or its contractors shall immediately halt all work, contact the appropriate county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5 (e)(1). If the county coroner determines that the remains are Native American, SCE and/or its contractors shall contact the NAHC, in accordance with HSC Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). Per PRC Section 5097.98, SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until SCE and/or its contractor has discussed and conferred, as prescribed in this section (PRC §5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.~~ Implement Mitigation Measure 4.5-1 (see above).

Significance after Mitigation: Less than Significant.

---

e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

Impact 4.5-6: Implementation of the Project could cause a substantial adverse change in the significance of previously unknown tribal cultural resources. *Less than significant with mitigation* (Class II)

Through the records searches, background research, field surveys, and Native American consultation, it has been determined that no tribal cultural resources, as defined in PRC Section 21074, have been identified in the Project Area. However, as discussed above, previously undiscovered archaeological resources and/or human remains may be present in the Project Area. If such resources were identified during Project construction and found to be a tribal cultural resource, any impacts to the resource resulting from the Project would be significant. Impacts would be reduced to less-than-significant levels with implementation of Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~ (see discussions for Impacts 4.5-2 and 4.5-5, above).

Mitigation: Implement Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~.

Significance after Mitigation: Less than Significant.

4.5.6 Alternatives

4.5.6.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts that would result under the Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, would not occur. Therefore, no impact to cultural or paleontological resources would occur under the No Project Alternative (No Impact).

4.5.6.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, only the Mira Loma-Jefferson Subtransmission Line and associated facilities would be constructed and the proposed substation and associated facilities, including source lines, would not be constructed. Under Alternative B, construction, operation, and maintenance-related impacts to archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Under Alternative B, impacts to historical resources would be reduced when compared to the proposed Project, as discussed below.

In contrast to the proposed Project, Alternative B would not impact the Grand Boulevard Historic District (P-33-006444), an historical resource (Impact 4.5-1). Alternative B does not include any construction, operation, or maintenance-related activities in or in the immediate vicinity of the District. Therefore, under Alternative B, Impact 4.5-1 would be less than significant, and no mitigation would be required.

Because this alternative would include less underground trenching when compared to the proposed Project, the potential for encountering previously undiscovered archaeological resources is slightly lower, and the overall potential remains low. However, if any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

Alternative B would require less excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential compared to the proposed Project, thereby reducing the potential to encounter paleontological resources. Regardless, there is still the potential to encounter such resource under Alternative B, impacts could be significant, and any associated significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

There would be a lower potential to encounter human remains under Alternative B compared to the proposed Project due to the reduced amount of ground disturbance that would occur. In the event that human remains were discovered during construction activities associated with Alternative B, impacts to human remains would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative B, which has a lower potential to affect tribal cultural resources than the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant

impacts would be reduced to a less-than-significant levels with implementation of Mitigation Measure~~s~~ 4.5-~~2~~1~~ and 4.5-5~~ (Impact 4.5-6; Class II).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 differs from the proposed Mira Loma-Jefferson 66 kV line in that it would include a half-mile-long underground conduit installation within Hellman Avenue from American Heroes Park to Pine Avenue/Schleisman Road. The proposed line would be overhead along this segment. Under Alternative C1, construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Since Alternative C1 may include construction of the proposed Pedley Source Lines, it could result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

Because this alternative would include an additional underground alignment compared to the proposed subtransmission line, the potential for encountering previously undiscovered archaeological resources is slightly higher, though the overall potential remains low. However, if any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

The additional underground trenching and vault installation activities that would be associated with Alternative C1 would include more extensive excavation in geologic formations or units with high paleontological potential along Hellman Avenue compared to the proposed Project's overhead installation, a significant impact. Such significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

Alternative C1 would result in a higher potential to encounter human remains compared to the proposed subtransmission line due to the greater amount of ground disturbance that would occur. In the event that human remains were discovered during construction activities associated with Alternative C1, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation

Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative C1, which would have a higher potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to a less-than-significant level with implementation of Mitigation Measure~~s~~ 4.5-2 and 4.5-~~5~~1 (Impact 4.5-6; Class II).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Under Alternative C2, instead of continuing west-southwest as proposed for the Mira Loma-Jefferson 66 kV line, the line would transition to underground at Archibald Avenue, and would continue underground to the intersection of Smith River Road and Archibald Avenue, where it would transition to overhead and would continue south along the west side of Archibald Avenue resulting in the replacement of existing single-circuit LWS poles with double-circuit LWS poles, eventually crossing the Santa Ana River, then continuing south to the intersection of Corydon Avenue and River Road where it would join the proposed alignment. Under Alternative C2, construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Since Alternative C2 may include construction of the proposed Pedley Source Lines, it could result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

Alternative C2 would be approximately 1.5 miles shorter than the proposed Project's subtransmission line; however, it would include an additional 1.2-mile-long underground alignment, which would increase the potential for encountering previously undiscovered archaeological resources, though the overall potential remains low. If any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

While Alternative C2 would result in less disturbance to mapped geologic units of high paleontological potential compared to the proposed subtransmission line along Hellman Avenue, it would include an additional 1.2 miles of trenching and excavation construction activities in an

area that could have subsurface high and moderate paleontological potential. The impact would continue to be significant. Such significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

Alternative C2 would result in a higher potential to encounter human remains compared to the proposed subtransmission line due to the greater amount of ground disturbance that would occur. In the event that human remains were discovered during construction activities associated with Alternative C2, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative C2, which would have a higher potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to less-than-significant levels with implementation of Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~ (Impact 4.5-6; Class II).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 varies from the proposed Project in that it would involve constructing up to three subtransmission-level (66 kV) battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project. The three Alternative C3 sites would include battery facilities that would range in size from 40 MW to 50 MW and would require at least 3 to 4 acres for development. Additionally, two of the sites would connect to the electrical grid with new double-circuit 66 kV lines, while the third would replace an existing single circuit line with a double circuit line. Under Alternative C3, construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, Impacts and Mitigation Measures, and summarized below.

Archival review indicates that no previously documented architectural resources are located within or adjacent to the footprint of the Alternative C3 sites. Due to the developed and urban nature of the Alternative C3 surroundings, the addition of the proposed substations, ~~and~~ transmission lines, and telecommunication lines would not result in any direct or indirect impacts to architectural resources. The telecommunication lines for the Alternative C3 40 MW facility would ~~does not~~ include ~~any~~ construction, operation, or maintenance-related activities in ~~or in the immediate vicinity of~~ the Grand Boulevard Historic District (P-33-006444); and ~~however~~, since Alternative C3 may include construction of the proposed Pedley Source Lines, it could result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

Alternative C3 would include less ground-disturbing activity than the proposed subtransmission line from development of the battery storage and substation facility sites, decreasing the potential for encountering previously undiscovered archaeological resources; the overall potential for such discoveries remains low. Though a cultural resources records search has been conducted for the footprint of the Alternative C3 sites, indicating that no previously recorded cultural resources are present, an archaeological field survey has not been conducted for the Alternative C3 sites due to access restrictions. If any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measures 4.5-2a and 4.5-~~2~~1 (Impacts 4.5-2 and 4.5-3; Class II). New Mitigation Measure 4.5-2a, see below, would require that an archaeological field survey be conducted for the alternative's footprint, that any identified cultural resources be evaluated to see if they qualify as an historical resource or a unique archaeological resource and, if any do qualify as an historical resource or unique archaeological resource, they be avoided, if feasible. Mitigation Measure 4.5-~~2~~1 would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource.

Alternative C3 would include more ground-disturbing activity than the proposed subtransmission line from development of the battery storage and substation facility sites in areas mapped as young alluvial fan deposits (Qyf) and old alluvial fan deposits (Qof). As noted in Table 4.5-3, the young alluvial fan deposits have low paleontological potential and the old alluvial fan deposits have high paleontologic potential. At the battery storage and substation facility sites, the old alluvial fan deposits are likely buried by the low sensitivity young alluvial fan deposits. Shallow excavations in these geologic units are not expected to destroy paleontological resources. However, excavations below 10 feet in these areas are likely to encounter older deposits that may host significant fossils, particularly in the finer grained deposits, which is considered a significant impact. Such significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

Alternative C3 would result in a lower potential to encounter human remains compared to the proposed subtransmission line due to the reduced amount of temporary ground disturbance that would occur from development of the battery storage and substation facility sites compared to the proposed Mira Loma-Jefferson subtransmission line. In the event that human remains were discovered during construction activities associated with Alternative C3, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measures 4.5-2a and 4.5-~~5~~1 (Impact 4.5-5; Class II). Mitigation Measure 4.5-2a would require that an archaeological field survey be conducted for the

alternative's footprint, that any identified cultural resources be evaluated to see if they qualify as an historical resource or a unique archaeological resource and, if any do qualify as an historical resource or unique archaeological resource, they be avoided, if possible. Mitigation Measure 4.5-~~5~~1 would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered.

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative C3, which would have a lower potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to less-than-significant levels with implementation of Mitigation Measures 4.5-2a~~,~~ and 4.5-1 ~~4.5-2, and 4.5-5~~ (Impact 4.5-6; Class II).

> **Mitigation Measure 4.5-2a:** Should Alternative C3 be included in the approved project, prior to the start of ground-disturbing construction activities, SCE and/or its contractors shall conduct an archaeological pedestrian survey of the Alternative C3 site footprints. The survey shall be directed by a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology. If cultural resources are identified in the footprint(s) during the survey, the qualified archaeologist shall assess the resources to see if they potentially qualify as an historical resource or unique archaeological resource. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If the resource is Native American in origin, CPUC shall consult with appropriate Native American tribes to assist in determining its potential significance. If CPUC, in consultation with the qualified archaeologist, determines that additional fieldwork is necessary to assess whether the resource qualifies as an historical resource or unique archaeological resource, the qualified archaeologist shall develop an Archaeological Testing Plan (ATP) to guide such additional archaeological investigations.
>
> The qualified archaeologist shall prepare and submit to CPUC for review and approval an ATP, which shall discuss the cultural resources identified during the pedestrian survey, the testing method(s) to be used, and the locations recommended for testing. The purpose of the ATP shall be to evaluate whether the archaeological resources identified during the archaeological pedestrian survey constitute an historical resource or unique archaeological resource under CEQA. After CPUC approval, the qualified archaeologist shall implement the ATP, after which the qualified archaeologist shall submit a written report of the findings to the CPUC. The written report shall be a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). If the CPUC determines, based on recommendations from the qualified archaeologist, that the resources qualify as historical resources or unique archaeological resources (as defined in CEQA Guidelines §15064.5), or tribal cultural resources (as defined in PRC §21074), the resources shall be avoided. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.

If avoidance is not feasible, the CPUC shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. Any treatment other than preservation in place must be approved by the CPUC and the appropriate tribe if applicable. The resource and treatment method shall be documented in a professional-level technical report to be filed with the CHRIS. Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.

Significance after mitigation: Less than significant.

4.5.6.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would involve construction of a distribution-level (12 kV) battery storage facility instead of the proposed Circle City Substation and the associated 66 kV source lines. Under Alternative D1, construction, operation, and maintenance-related impacts to archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below. Under Alternative D1, impacts to historical resources would be reduced when compared to the proposed Project, as discussed below.

~~In contrast to the proposed Project, Alternative D1 would not impact the Grand Boulevard Historic District (P-33-006444), an historical resource. Alternative D1 does not include any construction, operation, or maintenance-related activities in or in the immediate vicinity of the District. Therefore, under Alterative D1, Impact 4.5-1 would be less than significant, and no mitigation would be required.~~ Alternative D1 has the potential to impact the Grand Boulevard Historic District (P-33-006644), an historical resource, as defined in CEQA Guidelines Section 15064.5. This potential impact would result from the Alternative D1 telecommunications line, which would include the addition of overhead telecommunication lines on 39 existing wood distribution poles primarily along East 3rd Street, Quarry Street, West 2nd Street, and W Grand Boulevard. The telecommunications line would not result in the addition of a new visual change to the historic setting of the District; therefore, no resulting indirect visual impacts to the District

would occur. However, the majority of the underground construction component of the telecommunications line would involve installation within an existing underground duct bank system in Grand Boulevard and West 3rd Street, including 1,300 feet of new underground duct bank required within the District. This underground component of the Alternative D1 telecommunications line would result in similar potential impacts to sidewalks, curbs and gutters, and historic period landscaping and trees associated with the District as those for the proposed Project. These potential impacts could still result in a substantial adverse change to the significance of the District, a significant impact that would be reduced to a less-than significant level through implementation of Mitigation Measure 4.5-1 (Impact 4.5-1; Class II).

Because this alternative would include substantially less underground trenching, and overall ground-disturbance, when compared to the proposed Project, the potential for encountering previously undiscovered archaeological resources is lower, and the overall potential remains low. However, if any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

Alternative D1 would require substantially less excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential compared to the proposed Project, thereby reducing the potential to encounter paleontological resources. Regardless, there is still the potential to encounter such resource under Alternative D1, and any associated significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

There would be a lower potential to encounter human remains under Alternative D1 compared to the proposed Project due to reduced amount of ground disturbance that would occur. In the event that human remains were discovered during construction activities associated with Alternative D1, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative D1, which would have a lower potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified

during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to a less-than-significant level with implementation of Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~ (Impacts 4.5-2 and 4.5-3; Class II).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would result in locating the Circle City Substation at a parcel just east of the proposed substation site. Because the alternative would include approximately the same ground disturbance as would occur at the proposed substation site, the potential to impact archaeological resources and paleontological resources would be approximately the same as would occur at the proposed substation site, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Since Alternative D2 may include construction of the proposed Pedley Source Lines, it could result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

Because this alternative would include the same ground disturbance as the proposed substation site, the potential for encountering previously undiscovered archaeological resources is slightly lower. However, if any previously undiscovered archaeological deposits were identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

As described for the proposed substation site, Alternative D2 would include excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential, a significant impact. The impact would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

In the event that human remains were discovered during construction activities associated with Alternative D2, impacts to human remains would be significant if they were damaged. Significant impacts would be the same as under the Project, reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative D2, which would have the same potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant (Impact 4.5-6). Significant impacts would be reduced to a less-than-significant level with implementation of Mitigation Measures 4.5-~~2~~1~~ and 4.5-5~~ (Class II).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would differ from the proposed Pedley Source Lines by continuing south underground in Grand Boulevard to Quarry Street, where it would turn east and proceed to a location approximately 500 feet of Grand Boulevard where it would transition overhead, then continue along Quarry Street, parallel to and south of the proposed alignment on 3rd Street, until it rejoins the proposed alignment, just west of the Temescal Wash flood control channel. Construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would result from Alternative E1 would be similar to those that would result under the Proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

A portion of one historical resource, Grand Boulevard Historic District (P-33-006444), as defined in CEQA Guidelines Section 15064.5, could be impacted by Alternative E1. This alternative would include a longer underground alignment within Grand Boulevard compared to the proposed Pedley Source Lines, and as with the proposed Project, it could result in a substantial adverse change in the significance of the Grand Boulevard Historic District. Due to its longer underground alignment within the District when compared to the proposed Pedley Source Lines, Alternative E1 would result in a higher potential to impact the District. As such, Alternative E1 could result in a substantial adverse change in the significance of known historical resources, as defined in CEQA Guidelines Section 15064.5, and the associated impact would be less than significant with implementation of Mitigation Measure 4.5-1 (Impact 4.5-1; Class II).

One archaeological resource, P-33-024245, could be impacted by Alternative E1. The resource is a historic-era archaeological site between Quarry and East 3rd Streets consisting of structural remains and associated refuse. However, the resource was evaluated and found to be not eligible for listing in the California Register; therefore, the resource does not qualify as a historical resource or as a unique archaeological resource, pursuant to CEQA Guidelines Section 15064.5.

Because this alternative would include a longer underground alignment compared to the proposed Pedley Source Lines, the potential for encountering previously undiscovered archaeological resources is slightly higher than under the proposed Project, though the overall potential remains low. However, if any previously undiscovered archaeological deposits were identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if

avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

Alternative E1 would include excavation that, compared to the proposed Project, would have a higher potential to encounter subsurface geologic formations or units with moderate or high paleontological potential, a significant impact. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

Alternative E1 would result in a higher potential to encounter human remains compared to the proposed Pedley Source Lines due to the greater amount of ground disturbance that would occur. In the event that human remains were discovered during construction along the Alternative E1 alignment, resulting impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to less than significant by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by construction of Alternative E1, which would have a higher potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to less than significant with implementation of Mitigation Measures 4.5-~~2~~1 ~~and 4.5-5~~ (Impact 4.5-6; Class II).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

The Alternative E2 alignment would be the same as the proposed Pedley Source Lines; however, the lines would be constructed underground from just west of I-15 to the Circle City Substation site. Under Alternative E2, construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Since Alternative E2 would include the other segment of the proposed Pedley Source Lines, it would result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

Because this alternative would include a longer underground alignment compared to the proposed Pedley Source Lines, the potential for encountering previously undiscovered archaeological resources is slightly higher, though the overall potential remains low. However, if any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would

be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impact 4.5-2 and 4.5-3; Class II).

The underground trenching and vault installation activities that would be associated with Alternative E2 would require substantially more excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential compared to the proposed overhead installation. This significant impact would be reduced to less than significant by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

This alternative would result in a higher potential to encounter human remains compared to the proposed Pedley Source Lines due to the greater amount of ground disturbance that would occur. In the event that human remains are discovered during construction activities associated with Alternative E2, resulting impacts would be significant if they were damaged. Significant impacts would be reduced to less than significant with implementation of Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

No tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative E2, which would have a higher potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, the impact would be significant (Impact 4.5-6). The significant impact would be reduced to less-than-significant levels by implementing Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~ (Impact 4.5-6; Class II).

Alternative E3: Southern 66 kV Source Lines Alignment

Under Alternative E3, construction, operation, and maintenance-related impacts to historical resources, archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Databank Source Lines, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Since Alternative E3 may include construction of the proposed Pedley Source Lines, it could result in the same impact to the Grand Boulevard Historic District (P-33-006444), an historical resource, as the proposed Project (Impact 4.5-1; Class II).

This alternative would be longer than the proposed Databank Source Lines (1.3 miles compared to 1.2 miles), but since it would be completely an overhead alignment, which decreases the potential for encountering previously undiscovered archaeological resources compared to the proposed underground trenching, the overall potential would be decreased, and would remain low. However, if any previously undiscovered archaeological deposits would be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

Alternative E3 would require substantially less excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential compared to the proposed Databank Source Lines. This significant impact would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

There would be a lower potential to encounter human remains under Alternative E3 compared to the proposed Databank Source Lines due to less ground disturbance that would occur. In the event that human remains were discovered during construction activities associated with Alternative E3, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative E3, which would have a lower potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to a less-than-significant level with implementation of Mitigation Measures 4.5-~~2~~1 ~~and 4.5-5~~ (Impact 4.5-6; Class II).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 consists of only the Databank Source Lines and a telecommunication line to connect to the Circle City Substation. Under this alternative, construction, operation, and maintenance-related impacts to archaeological resources, tribal cultural resources, and paleontological resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.5.4, *Impacts and Mitigation Measures*, and summarized below.

Although the impact on the Grand Boulevard Historic District (P-33-006444) would be avoided under this alternative due to the removal of the Pedley Source Lines, a portion of the Grand Boulevard Historic District (P-33-006444), as defined in CEQA Guidelines Section 15064.5, could be impacted to a lesser extent by the Alternative E4 telecommunications line, which would include the addition of overhead telecommunication lines on 39 existing wood distribution poles primarily along East 3rd Street, Quarry Street, West 2nd Street, and W Grand Boulevard. This would not result in the addition of a new visual change to the historic setting of the District, and no resultant indirect visual impacts to cultural resources would occur. The majority of the underground construction component of the telecommunications line would include installation within an existing underground duct bank system in Grand Boulevard and West 3rd Street, with only approximately 1,300 feet of new underground duct bank required within the District. Alternative E4 would result in similar potential impacts to sidewalks, curbs and gutters, and historic period landscaping and trees. However, it could still result in a substantial adverse change to the significance of the District, a significant impact that would be reduced to a less-than-significant level through implementation of Mitigation Measure 4.5-1 (Impact 4.5-1; Class II).

This alternative would include reduced amounts of overall ground-disturbance, when compared to the proposed Project, so the potential for encountering previously undiscovered archaeological resources is similar to that for the proposed Project. However, if any previously undiscovered archaeological deposits were to be identified during construction and found to qualify as a historical resource or unique archaeological resource, impacts to the resource would be significant. Significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-~~2~~1, which would require, in the event of an inadvertent discovery of archaeological resources, a qualified archaeologist to assess any previously undiscovered archaeological resources and, if determined to potentially be an historical resource or unique archaeological resource, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource (Impacts 4.5-2 and 4.5-3; Class II).

Alternative E4 would require reduced amounts of excavation that could encounter subsurface geologic formations or units with moderate or high paleontological potential compared to the proposed Project. Therefore, the potential to encounter paleontological resources from implementation of Alternative E4 is reduced compared to that of the proposed Project. Regardless, there is still the potential to encounter such resources under Alternative E4, and any associated significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measure 4.5-4, which would require pre-construction activities, and particularly review of data from geotechnical investigations, to provide additional data that could be used to better identify the paleontological sensitivity of the affected subsurface rocks or sediments (Impact 4.5-4; Class II).

There would be a reduced potential to encounter human remains under Alternative E4 compared to the proposed Project. In the event that human remains were discovered during construction activities associated with Alternative E4, impacts to human remains would be significant if they were damaged. Significant impacts would be reduced to less-than-significant levels by

implementing Mitigation Measure 4.5-~~5~~1, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered (Impact 4.5-5; Class II).

In addition, no tribal cultural resources, as defined in PRC Section 21074, have been identified in areas that would be impacted by Alternative E4, which would have a lower potential to affect tribal cultural resources compared to the proposed Project. However, if any resources were identified during construction and found to be a tribal cultural resource, resulting impacts would be significant. Significant impacts would be reduced to a less-than-significant level with implementation of Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~ (Impact 4.5-6; Class II).

References – Cultural Resources

Aron, Geraldine, 2010a. *RE: Paleontological Review, Proposed Horsetown Substation Project, Riverside County, California (CWA 1: IO # 307041)*, letter report, prepared by Paleo Solutions, prepared for Natasha Tabares, CEH&S, Biological and Archaeological Resources Group, January 8, 2010.

Aron, Geraldine, 2010b. *RE: Paleontological Mitigation Recommendations Addendum: Proposed Horsetown Substation Project*, letter report, prepared by Paleo Solutions, prepared for Natasha Tabares, CEH & S, Biological and Archaeological Resources Group, January 29, 2010.

California Public Utilities Commission (CPUC), 2016. Native American Consultation Documentation for the Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project, 2016.

Gray, C. H., Jr., Douglas M. Morton, F. Harold Weber, Jr., Kelly R. Bovard, and Timothy O'Brien, 2002. Geologic Map of the Corona South 7.5'Quadrangle, Riverside and Orange Counties, California: U.S. Geological Survey Open-File Report 2002-21. Available online at: http://pubs.usgs.gov/of/2002/0021/.

Hoffman, Robin, Timothy Yates, and Karen Crawford, 2012. *Cultural Resources Inventory Report for the Proposed Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500436812)*, prepared by ICF, prepared for Southern California Edison, 2012.

ICF, 2015a. *Addendum 1 Cultural Resources Inventory Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500436812)*, prepared for Southern California Edison, 2015.

ICF, 2015b. *Addendum 2 Cultural Resources Inventory Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500700244)*, prepared for Southern California Edison, 2015.

Morton, Douglas M., C. H. Gray, Jr., Kelly R. Bovard, and Michael Dawson, 2001. Geologic Map of the Corona North 7.5' Quadrangle, Riverside and San Bernardino Counties,

California: U.S. Geological Survey Open-File Report 02-022. Available online at: http://pubs.usgs.gov/of/2002/0022/.

Society of Vertebrate Paleontology (SVP), 1995. *Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines*. January.

SWCA Environmental Consultants, 2015. *Paleontological Survey Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside & San Bernardino Counties, California*, prepared for Southern California Edison, 2015.

Williams, Brian, 2015. *Cultural Resources Supplemental Record Search Review of the Southern California Edison Company's Circle City Substation and Mira Loma-Jefferson Subtransmission Project, Riverside and San Bernardino Counties, California*, prepared by ASM Affiliates, prepared for Southern California Edison, 2015.

4.6 Energy Conservation

This section identifies and evaluates issues related to energy conservation in the context of the Project and alternatives. Discussed are the physical and regulatory setting; the criteria used for determining the significance of environmental impacts; impacts associated with construction, operation, and maintenance of the Project; and feasible mitigation measures to reduce or avoid significant effects.

4.6.1 Setting

4.6.1.1 Regional and Local Setting

California's energy system includes electricity, natural gas, and petroleum. According to the California Energy Commission (CEC), California's energy system generates 66 percent of the electricity, 10 percent of the natural gas, and 36 percent of the petroleum consumed or used in the state. The rest of the state's energy and energy sources are imported, and include electricity from the Pacific Northwest and the Southwest; natural gas purchases from Canada, the Rocky Mountain states, and the southwest; and petroleum imported from Alaska and foreign sources (CEC, 2016a; 2016b; and 2016c; EIA, 2017).

Electricity

The production of electricity requires the consumption or conversion of energy resources including natural gas, coal, water, nuclear, and renewable sources such as wind, solar, and geothermal. Of the electricity generated in California, 59.9 percent is generated by natural gas-fired power plants, 0.3 percent is generated by coal-fired power plants, 5.9 percent comes from large hydroelectric dams, and 9.4 percent comes from nuclear power plants. The remaining 24.5 percent in-state total electricity production is supplied by renewable sources including solar, biomass, geothermal, small hydro, and wind power (CEC, 2016a). Electricity is distributed via a network of high-voltage transmission lines commonly referred to as the power grid.

Southern California Edison (SCE) is the local public utility and energy supplier in the proposed Project area, and produces and purchases electricity from both renewable and nonrenewable resources. SCE serves approximately 14 million people in a 50,000-square-mile area of central, coastal, and Southern California (including Fresno, Imperial, Inyo, Kern, Kings, Los Angeles, Madera, Mono, Orange, Riverside, Santa Barbara, San Bernardino, Tulare, Tuolumne, and Ventura counties) (SCE, 2016).

Gasoline

Gasoline is by far the largest transportation fuel by volume used in California. Nearly all of the gasoline used in California is obtained through the retail market. In 2016, approximately 15.5 billion gallons of gasoline were sold in California's retail market (California Department of Tax and Fee Administration, 2017). The total 2015 sales of gasoline in Riverside and San Bernardino counties were 1,039 million and 909 million gallons, respectively (CEC, 2017a).

Diesel

Diesel fuel is the second largest transportation fuel by volume used in California behind gasoline. It is estimated that approximately 53 percent of total diesel sales in California are associated with retail sales. In 2015, 4.2 billion gallons of diesel were sold in California (CEC, 2017b). According to the U.S. Department of Energy's Energy Information Administration, nearly all semi-trucks, delivery vehicles, buses, trains, ships, boats and barges, and farm, construction, and military vehicles and equipment have diesel engines. In 2015, retail sales of diesel fuel in Riverside and San Bernardino counties were 146 million and 241 million gallons, respectively (CEC, 2017a).

4.6.1.2 Regulatory Setting

Federal

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under this act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State

State of California Integrated Energy Policy

In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The CEC has adopted the 2015 Integrated Energy Policy Report, which assesses major energy trends and issues facing the state’s electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state’s economy, and protect public health and safety. The 2015 Integrated Energy Policy Report covers a broad range of topics, including energy efficiency, building energy efficiency standards, achieving 50 percent renewables by 2030, and the California Energy Demand Forecast (CEC, 2016d).

Title 24 Building Energy Efficiency Standards

Title 24, Part 6, of the California Code of Regulations (CCR) is the California Building Code governing all aspects of building construction. Included in Part 6 of the Code are standards mandating energy efficiency measures in new construction. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances) have contributed to a reduction in electricity and natural gas usage and costs in California. The standards are updated every 3 years to incorporate new energy efficiency technologies. The latest update to the Title 24 standards became effective July 2014. The standards regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting. Title 24 is implemented through the local planning and permits processes (CEC, 2013).

Renewable Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, the Governor signed Executive Order S-14-08, which expanded the State's Renewable (Energy) Portfolio Standard (RPS) to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-09 requiring the California Air Resources Board (CARB), under its AB 32 authority, to adopt regulations to meet a 33 percent RPS target by 2020. The CARB regulations use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an 8-year period that began in 2012. CARB adopted the regulations in September 2010.

In March 2011, the Legislature passed SB X1-2, which was signed into law by the Governor the following Month. SB X1-2 requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020, and also established interim targets: 20 percent by December 31, 2013, and 25 percent by December 31, 2016. Senate Bill 350 (SB 350) of 2015 (Chapter 547, Statutes of 2015) increased the RPS to 50 percent by the year 2030.

SB 350

SB 350 of 2015 (Chapter 547, Statutes of 2015) revises the state's RPS Program by requiring utilities to procure at least 50 percent of the retail electricity from renewable sources by 2030. The law also requires the California Energy Commission to establish annual energy efficiency standards designed to double the electricity and natural gas savings for existing buildings by 2030.

Construction Equipment Idling

CARB has also adopted a regulation (13 Cal. Code Regs. Section 2449 et seq.) for in-use off-road diesel vehicles that is designed to reduce emissions from diesel-powered construction and mining vehicles by imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to no more than 5 minutes.

Local

California Public Utilities Commission (CPUC) General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the policies of local general plans and other planning documents pertaining to energy conservation that otherwise may be relevant to the Project and alternatives are described below.

City of Chino

The following Open Space and Conservation Element policy of the City of Chino General Plan regarding energy conservation may be applicable to Project activities that take place within Chino (City of Chino, 2010).

> *Policy P2*: The City shall collaborate with local energy suppliers and distributors to establish energy conservation programs, Energy Star® appliance change-out programs, rebates, vouchers, and other incentives to install energy-efficient technology and products.

City of Corona

The following Infrastructure and Public Services Element policies of the City of Corona General Plan regarding energy conservation may be applicable to Project activities that take place within Corona (City of Corona, 2004).

> *Policy 7.11.3*: Coordinate with the Southern California Gas Company to ensure that their newly developed facilities are designed and sited to be compatible with adjacent land uses in the City of Corona.
>
> *Policy 7.12.2*: Work with the SOCAL Gas, SCE, and the City Department of Power and Water to ensure that adequate electrical facilities are available to meet the demand of existing and future developments.
>
> *Policy 7.12.3*: Continue to provide for the undergrounding of new and existing electrical distribution lines unless it is determined not to be economically or practically feasible as a result of significant environmental or other constraints.

City of Eastvale

The following Circulation and Infrastructure Element and the Air Quality and Conservation Element policies of the City of Eastvale General Plan regarding energy conservation may be applicable to Project activities that take place within Eastvale (City of Eastvale, 2012).

> *Policy C-28*: Promote and encourage efficient provisions of utilities such as water, wastewater, natural gas, and electricity that support the [General Plan] Land Use Map.
>
> *Policy C-29*: Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.
>
> *Policy AQ-36*: The City shall support the inclusion of energy-efficient design and renewable energy technologies in public and private projects.

City of Ontario

The following Environmental Resources Element policy of the City of Ontario General Plan pertains to energy conservation (City of Ontario, 2010).

> *Policy ER3-1*: Conservation Strategy. We require conservation as the first strategy to be employed to meet applicable energy-saving standards.

4.6.2 Significance Criteria

Appendix F of the CEQA *Guidelines* provides guidance for assessing energy impacts of projects. The appendix provides three goals:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on natural gas and oil; and
- Increasing reliance on renewable energy sources.

Consistent with Appendix F, the Project would have a significant impact if it would:

a) Result in the inefficient use of energy during Project construction, operation, or maintenance;

b) Affect local and regional energy supplies to the point that additional capacity of those energy supplies would be required;

c) Adversely affect peak and base period demands for electricity and other forms of energy;

d) Conflict with existing energy standards;

e) Adversely affect energy resources; and/or

f) Result in substantial transportation energy use requirements with no efficient transportation alternatives.

4.6.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce project impacts related to energy conservation.

4.6.4 Impacts and Mitigation Measures

4.6.4.1 Approach to Analysis

This analysis is based, in part, on basic assumptions regarding construction-related diesel and gasoline consumption for the proposed Project, and estimates of the operational energy requirements of the proposed Project. The analysis focuses on the anticipated energy demand and energy efficiency of the proposed Project as a whole, including during construction, operation, and maintenance, and decommissioning of the proposed facilities. In addressing the impact types listed in Section 4.6.2, the analysis also addresses whether the Project would result in the wasteful, inefficient, and unnecessary consumption of energy during construction or operation.

Off-road equipment inventories and construction and operation activity assumptions identified in SCE's air emission estimates were used by the CPUC's consultant (Environmental Science Associates [ESA]) to estimate fuel amounts that would consumed by off-road equipment during construction and operation of the Project. Fuel consumption factors for off-road equipment were derived from equipment inventory data using CARB's off-road emissions inventory database. Fuel use estimates for worker commuting and truck hauling during Project construction and operation were also estimated using trip data projected for the Project (see **Appendix D.4** for all fuel consumption factors and assumptions).

a) Result in the inefficient use of energy during Project construction, operation, or maintenance.

f) Result in substantial transportation energy use requirements with no efficient transportation alternatives.

Impact 4.6-1: Construction, operation, and maintenance would result in the consumption of energy. *Less than significant with mitigation* (Class II)

Construction-related energy expenditures would include both direct and indirect uses of energy, primarily in the form of diesel and gasoline fuel. Direct energy use would include the consumption of petroleum for operation of construction vehicles and equipment and the use of electricity as a temporary power source at the proposed construction staging yards. Indirect energy use includes the energy required to make the materials and components used during construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

Regarding construction-related direct energy consumption, it is estimated that off-road construction equipment would operate for a total of approximately 40,000 hours and would consume a total of approximately 172,000 gallons of diesel fuel at an average rate of 4.5 gallons per hour. With regard to vehicle use during construction, workers' vehicles would travel over 1,013,000 miles and would consume approximately 46,067 gallons of gasoline (assuming an average fuel economy of 22 miles per gallon) and heavy haul trucks would travel approximately 310,000 miles and consume approximately 52,000 gallons of diesel fuel (assuming an average consumption rate of 6.0 miles per gallon) (see Appendix D.4 for all assumptions and fuel use factors). When averaged over the 1.5-year construction period, the maximum annual fuel use for off-road construction equipment would be approximately 115,000 gallons of diesel fuel per year, construction workers' personal vehicles would consume approximately 31,000 gallons of gasoline per year, and heavy haul trucks would consume approximately 34,000 gallons of diesel fuel per year. The total average annual fuel use during the 1.5-year construction period would be approximately 31,000 gallons per year of gasoline and approximately 149,000 gallons per year of diesel fuel.

These annual average gasoline use amounts are equivalent to less than 0.01 percent of the total gasoline fuel sold in Riverside or San Bernardino County, and the annual average diesel use amounts are equivalent to 0.10 percent and 0.06 percent diesel fuel sold in Riverside and San Bernardino counties, respectively (see Section 4.6.1, *Setting*).

The amount of electricity that would be consumed during Project construction is likely to be minor, but cannot be estimated as it would be too speculative given existing data.

While the overall transportation energy use requirements would not be significant relative to the overall sales of transportation fuels in the Project area counties, construction activities could result in wasteful or inefficient use of energy if, for example, construction equipment is not well maintained, or if haul trips are not planned efficiently. (See Impact 4.6-2 for a further discussion of construction energy impacts.) For all Project components, the potential for construction activities to use large amounts of fuel or energy in a wasteful or inefficient manner is considered a significant impact. However, with implementation of **Mitigation Measures 4.6-1 (Construction Equipment Efficiency Plan)**, which would ensure construction activities are conducted in a fuel-efficient manner, the impact would be reduced to a less-than-significant level.

During Project operation and maintenance, energy use would be minor and would be limited to the requirement of up to 10 maintenance trips per day. Operation and maintenance activities would originate from the local area because current local SCE personnel would perform this work. The operational impact would be less than significant.

> **Mitigation Measure 4.6-1:** SCE shall contract a qualified professional (i.e., construction planner/energy efficiency expert) to prepare a Construction Equipment Efficiency Plan that identifies the specific measures that SCE (and its construction contractors) will implement as part of Project construction to increase the efficient use of construction equipment to the maximum extent feasible. Such measures shall include, but not necessarily be limited to: procedures to ensure that all construction equipment is properly tuned and maintained at all times; a commitment to utilize existing electricity sources where feasible rather than portable diesel-powered generators; and identification of procedures (including the routing of haul trips) that shall be followed to ensure that all materials and debris hauling is conducted in a fuel-efficient manner. The plan shall be submitted to CPUC for review and approval at least 30 days prior to the beginning of construction activities.
>
> **Significance after Mitigation:** Less than Significant.

---

b) Affect local and regional energy supplies to the point that additional capacity of those energy supplies would be required. (Beneficial Impact)

The Project would be located within SCE's service territory and would transmit energy to the regional power grid. The Project would contribute to meeting projected local peak demand electricity needs. Consequently, the Project would have a beneficial impact on local and regional energy supplies because it would ensure that current energy needs are met and that there is capacity and infrastructure to meet projected future energy needs in the electrical needs area. No adverse impact on local or regional energy supplies or capacity would result (Class IV).

---

c) Adversely affect peak and base period demands for electricity and other forms of energy. (No Impact)

The Project would transmit electrical energy to the grid during peak and base periods. Impacts to peak or base electricity demands would occur if significant amounts of electricity were required for construction, operation, or maintenance of the Project such that SCE would be required to increase its available supply or production capacity. There may be a limited temporary increase in use of electricity resources during construction, and periodic energy requirements during operation and maintenance, as discussed under Impact 4.6-1. However, given the negligible amount of electricity required for the Project, neither construction nor operation and maintenance would impact peak or base power demands. Additionally, the Project would not impact electricity generation facilities' ability to provide and maintain existing levels of service during peak and base period demands. Consequently, the Project would cause no adverse impact related to the demand for electricity or other forms of energy (No Impact).

---

d) Conflict with existing energy standards. (No Impact)

As described in Section 4.6.1, above, Part 6 of the California Building Standards Code contains the California Energy Code (CCR Title 24, Part 6). The local government building permit application review process would ensure that the proposed Project is compliant with all applicable state and local energy conservation standards. Therefore, no impact related to compliance with applicable energy and energy conservation standards would result, and this criterion is not discussed further in this section (No Impact).

e) Adversely affect existing energy resources.

As discussed above, the Project would increase the reliability of the local electrical subtransmission grid and distribution supply during peak demand times, reducing the likelihood of interruptions in electrical distribution due to demand on the system. Consequently, operation of the Project would not result in adverse impacts on existing energy resources (Class IV).

Impact 4.6-2: Construction could adversely affect existing energy resources. *Less than significant* (Class III)

Construction-related energy consumption would represent irreversible consumption of finite natural energy resources during the 18 months of construction activity. The total average annual fuel use during the 1.5-year construction period would be approximately 31,000 gallons per year of gasoline and approximately 149,000 gallons per year of diesel fuel. The annual average gasoline use amounts are equivalent to less than 0.01 percent of the total gasoline fuel sold in Riverside or San Bernardino County, and the annual average diesel use amount is equivalent to 0.10 percent and 0.06 percent diesel fuel sold in Riverside and San Bernardino counties, respectively (see Section 4.6.1, *Setting*). Construction activities would not result in long-term depletion of non-renewable energy resources and would not permanently increase reliance on energy resources that are not renewable. Construction activities would not reduce or interrupt existing electrical or

natural gas services due to insufficient supply, nor would they interrupt existing local SCE service. Project-specific construction-related fuel demands would not be expected to have a significant adverse effect on energy resources given the low level of the fuel amounts relative to the amounts sold each year in Riverside and San Bernardino counties. In addition, compliance with the state's regulation for in-use off-road diesel vehicles that requires idling limitations to no more than 5 minutes, unless idling is required for safety purposes, would further ensure that fuel energy consumed in the construction phase would not be wasted through unnecessary idling. Therefore, energy consumption by construction activities would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources.

Mitigation: None required.

4.6.5 Alternatives

4.6.5.1 Alternative A: No Project Alternative

The No Project Alternative would have no energy impacts because no energy would be consumed by construction activities, or during operations and maintenance (No Impact). However, if the project is not built, SCE forecast indicates that long-term peak electrical demand requirements in the electrical needs area (ENA) will not be met. Although the No Project Alternative would consume no energy during construction, operation, and maintenance, it could result in a long-term loss of reliability in the local electrical distribution system. This impact is considered less than significant, as another project would likely be constructed to address this deficiency. Therefore, this alternative would result in no impact to energy conservation regarding criteria a), c), d), and f) (No Impact), and a less-than-significant impact regarding criteria b) and e) (adverse impact on local or regional energy supplies and existing energy resources; Class III).

4.6.5.2 Subtransmission Service Objective Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be constructed and the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed. Since Alternative B would involve a substantially reduced construction effort, it would be less energy intensive than the proposed Project and there would be less of a potential for it to result in inefficient or wasteful consumption of energy and increased consumption of energy although the potential would still exist. The potential for construction activities to use large amounts of fuel or energy in a wasteful or inefficient manner is considered a significant impact. However, with implementation of

Mitigation Measure 4.6-1 (Construction Equipment Efficiency Plan), which would ensure construction activities are conducted in a fuel-efficient manner, the impact would be reduced to a less-than-significant level (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative B would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would include an additional 0.4 mile of underground line construction compared to the proposed Mira Loma-Jefferson subtransmission line. Since underground subtransmission line construction activities are more energy intensive than above ground construction activities due to higher intensity of equipment use, there would be a higher potential for Alternative C1 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Mira Loma-Jefferson subtransmission line. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative C1 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 would be approximately 1.5 miles shorter, but would include an additional 1.2 miles of underground line construction compared to the proposed Mira Loma-Jefferson subtransmission line. Even though this alternative alignment is shorter, since underground subtransmission line construction activities are more energy intensive than above ground construction activities due to higher intensity of equipment use, there would be a higher potential for Alternative C2 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Mira Loma-Jefferson subtransmission line. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative C2 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Under Alternative C3, up to three subtransmission-level (66 kV) battery storage and substation facilities, associated subtransmission and telecommunication lines, and upgrades to existing Jefferson Substation, would be constructed and operated instead of the Mira Loma-Jefferson 66 kV line component of the Project. Given the similarities of the infrastructure and site areas that would be required for the subtransmission-level battery storage and substation facilities under Alternative C3 and the proposed Circle City Substation, it is assumed that energy consumption associated with each of the three subtransmission-level battery storage and substation facilities would be similar to the energy consumption due to construction of the proposed Circle City

Substation and that overall, and overall energy use under Alternative C3 would be greater than under the proposed Project. The electricity required to power the air conditioning units would be obtained internally and each individual unit would be directly connected to the energy storage system's discharge and would not require additional electrical input. There would be a higher potential for Alternative C3 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Mira Loma-Jefferson subtransmission line. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative C3 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

4.6.5.3 Distribution Service Objective Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1:12 kV Distribution-Level Battery Storage

Under Alternative D1, a distribution-level (12 kV) battery storage facility would be constructed and operated instead of the Circle City Substation and associated sources lines components of the Project. Given the reduced scope of the infrastructure and site area that would be required for the distribution-level battery storage facility under Alternative D1 compared to the proposed Circle City Substation, it is assumed that energy use under Alternative D1 would be reduced compared to the proposed Project. The electricity required to power the air conditioning units would be obtained internally and each individual unit would be directly connected to the energy storage system's discharge and would not require additional electrical input. There would be less of a potential for Alternative D1 to result in inefficient or wasteful consumption of energy and decreased consumption of energy compared to the proposed Mira Loma-Jefferson subtransmission line although the potential would still exist. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative D1 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative D2:66/12 kV Substation Site Alternative

Alternative D2 would result in the same energy conservation-related impacts as the proposed Circle City Substation. Impacts would be less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class III). Similar to the proposed Project, energy consumption by construction activities under Alternative D2 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would be approximately 300 feet longer and would include an additional 800 feet of underground line construction compared to the proposed Pedley Source Lines. Since underground subtransmission line construction activities are more energy intensive than above ground construction activities, there would be a higher potential for Alternative E1 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Pedley Source Lines. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative E1 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would include an additional 1.5 miles of underground line construction compared to the proposed Pedley Source Lines. Since underground subtransmission line construction activities are more energy intensive than above ground construction activities, there would be a higher potential for Alternative E2 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Pedley Source Lines. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative E2 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative E3: Southern Route 66 kV Source Lines Alignment

Alternative E3 would be approximately 0.1 mile longer than the proposed Databank Source Lines, but unlike the proposed source lines, it would not include underground subtransmission line construction activities. Since underground subtransmission line construction activities are more energy intensive than above ground construction activities, there would likely be a lower potential for Alternative E3 to result in inefficient or wasteful consumption of energy and increased consumption of energy compared to the proposed Databank Source Lines. The impact conclusion would be the same as for the proposed Project, less than significant with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative E3 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

Alternative E4: Databank 66 kV Source Lines Only

Under Alternative E4, only the Databank Source Lines would be constructed to connect to Circle City Substation and the Pedley Source Lines would not be constructed. Since Alternative E4 would involve a substantially reduced construction effort, it would be less energy intensive than the proposed Project and there would be less of a potential for it to result in inefficient or wasteful

consumption of energy and increased consumption of energy although the potential would still exist. The potential for construction activities to use large amounts of fuel or energy in a wasteful or inefficient manner is considered a significant impact. However, with implementation of Mitigation Measures 4.6-1, the impact would be reduced to a less-than-significant level (Impact 4.6-1; Class II). Similar to the proposed Project, energy consumption by construction activities under Alternative E4 would result in less-than-significant impacts pertaining to the potential to adversely affect existing energy resources (Impact 4.6-2; Class II).

References – Energy Conservation

24/7 Wall Street, 2017. Average Fuel Economy for 264 Million U.S. Light Vehicles: 22 Miles per Gallon, by Paul Ausick, March 2, 2017.

California Department of Tax and Fee Administration, 2017. Net Taxable Gasoline Gallons (Including Aviation Gasoline). Available online at: http://www.cdtfa.ca.gov/taxes-and-fees/MVF_10_Year_Report.pdf.

California Energy Commission (CEC), 2016a. Total Electricity System Power, 2015 Total System Power in Gigawatt Hours. Available online at: http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html, accessed November 14, 2016.

CEC, 2016b. Supply and Demand of Natural Gas in California. Available at: http://www.energy.ca.gov/almanac/naturalgas_data/overview.html, accessed November 14, 2016.

CEC, 2016c. Oil Supply Sources to California Refineries. Available at: http://www.energy.ca.gov/almanac/petroleum_data/statistics/crude_oil_receipts.html, accessed November 14, 2016.

CEC, 2016d. 2015 Integrated Energy Policy Report, CEC-100-2015-001-CMF. Available at: http://www.energy.ca.gov/2015_energypolicy/. Accessed on November 1, 2016.

CEC, 2017a. California Annual Retail Fuel Outlet Report Results and Analysis (CEC-A15). Available online at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/2016_A15_Results.xlsx. Accessed May 5, 2017.

CEC, 2017b. Diesel Fuel Data, Facts, and Statistics. Available online at: http://www.energy.ca.gov/almanac/transportation_data/diesel.html. Accessed April 7, 2017.

CEC, 2013. Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Available at: http://www.energy.ca.gov/title24/2013standards/index.html/, accessed November 1, 2016.

City of Chino, 2010. *Envision Chino: City of Chino General Plan 2025*, *Safety Element.* July.

City of Corona, 2004. *City of Corona General Plan.* Adopted March 17.

City of Eastvale, 2012. *City of Eastvale General Plan*. Adopted June 13, 2012.

City of Ontario, 2010. City of Environmental Resources Element. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 13, 2016.

Southern California Edison (SCE, 2016). Southern California Edison- Our Service Territory. Available at: https://www.sce.com/wps/portal/home/about-us/who-we-are/leadership/our-service-territory/our%20service%20territory/!ut/p/b0/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINLdwdPTyDDTz9g4xdDDyDjEIsHU28DUycDfULsh0VAc4afN0!/, accessed November 14, 2016.

Union of Concerned Scientists, 2017. Engines for Change (2015). Accessed webpage (http://www.ucsusa.org/clean-vehicles/fuel-efficiency/heavy-duty-truck-standards#.WO0i-Sj2aUl) April 11, 2017.

U.S. Energy Information Administration (EIA), 2017. California State Profile and Energy Estimates. Accessed webpage (https://www.eia.gov/state/analysis.php?sid=CA) May 4, 2017.

4.7 Geology and Soils

This section evaluates whether construction, operation, and maintenance of the Project and alternatives would result in significant impacts related to local geology, existing soil conditions, or seismicity. The evaluation and analysis of geology, soils, faulting, and seismicity are based, in part, on review of various geologic maps and reports. The primary sources include available resources from the United States Geological Survey (USGS) and the California Geological Survey (CGS). Both short-term and long-term Project effects are analyzed to determine their significance under CEQA. When Project impacts are determined to be significant, mitigation measures to avoid or reduce those impacts are identified. Also described here are the existing conditions in the Project area and the regulations relevant to the Project.

4.7.1 Setting

4.7.1.1 Regional Geology

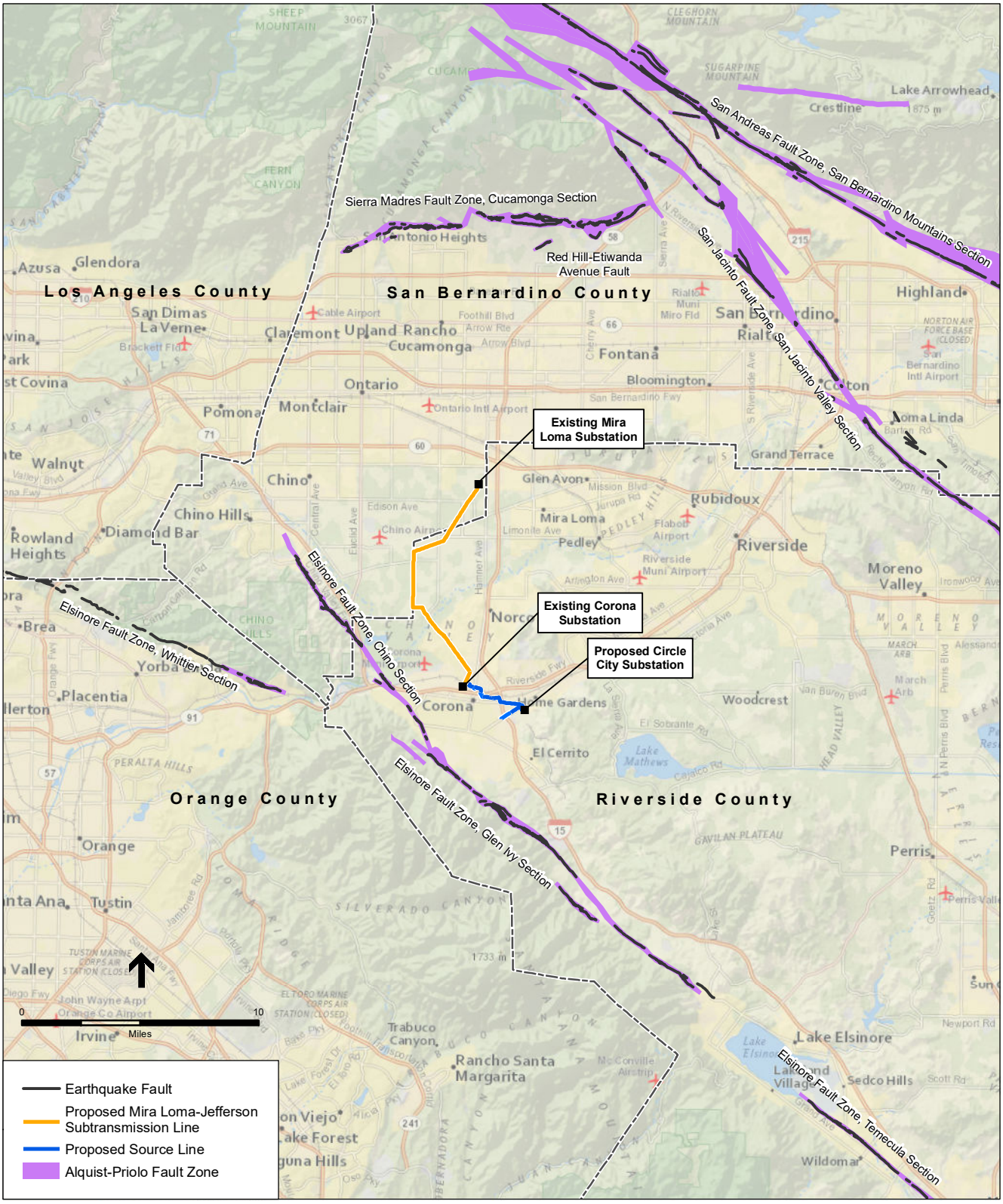
The proposed Project would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco, and in portions of San Bernardino County, including the cities of Chino and Ontario. The Project is located within the Peninsular Ranges geomorphic province (CGS, 2002). The Peninsular Ranges province is characterized by northwest trending mountains and intervening basins parallel to the major faults and folds in the region. Topography along the Project alignments vary, from around 525 feet above mean sea level (amsl) when crossing the Santa Ana River to approximately 750 feet amsl at the Mira Loma Substation.

The Project sites and alignments generally traverse a series of alluvial plains[1] and washes associated with drainage to the current or ancestral Santa Ana River, the Temescal Wash, and the Mill Creek Wash. The Project sites and alignments are within the Corona North and Corona South USGS 7.5' quadrangles. The Circle City Substation site is underlain by a thin mantle of un-compacted fill overlying young alluvial channel deposits of the Temescal Wash, which range from fine grained mixtures of silt, sand, and some gravel, to coarse granular alluvium containing sand, gravel, cobbles and boulder~~s~~ mixtures (TDBU, 2012). Within the vicinity of Norco, the proposed Mira Loma-Jefferson subtransmission line alignment intersects the late Cenozoic Norco sandstone in select locations. The hills to the east consist of older (Cretaceous) plutonic rocks that cooled over 100 million years ago. The project alignment traverses young eolian (windblown sand) deposits from the northwestern border of Eastvale to the Mira Loma Substation (Morton and Gray, 2002).

4.7.1.2 Faults

The Project area is located within a seismically-active region of California that contains many active and potentially active faults. **Figure 4.7-1** provides an illustration of the major mapped earthquake faults in the area of the proposed Project. The Proposed area is located in a large block bordered by the Elsinore Fault Zone to the southwest, the Sierra Madre Fault Zone to the north,

[1] A broad, flat plain of unconsolidated earth materials (clay, silt, sand, gravel) deposited by a stream or body of running water.



SOURCE: SCE, 2015; USGS, 2006

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.7-1

Earthquake Faults and Hazard Zones in the Project Vicinity

and the San Bernardino and San Jacinto Valley sections of the San Jacinto Fault Zone to the east. These fault zones all demonstrate activity within the past 15,000 years (USGS and CGS, 2006).

The Chino Section of the Elsinore Fault zone borders the eastern side of the Chino Hills, approximately 2.5 miles southwest of the proposed Mira Loma-Jefferson subtransmission line and source line alignments. The Elsinore fault zone is part of the same right-lateral crustal plate strain system as the San Jacinto and San Andreas fault zones. South of the Santa Ana River, the Elsinore fault has sustained vertical displacement along the eastern edge of the Santa Ana Mountains. North of the Santa Ana River, the Elsinore fault branches into the Whittier and Chino faults.

USGS, CGS, and the Southern California Earthquake Center formed the Working Group on California Earthquake Probabilities to develop an earthquake forecast model for California, which provides estimates of the magnitude, location, and likelihood of earthquake fault rupture throughout the State. The model output summarizes the probability of one or more earthquakes of moment magnitude 6.7 or higher occurring in California over the next 30 years. Accounting for the wide range of possible earthquake sources and for multi-fault ruptures, it is estimated that the Los Angeles region as a whole has a 60 percent chance of experiencing an earthquake of magnitude 6.7 or higher before 2045 (Field et al., 2015). According to the Working Group, the individual faults posing the greatest threat to the Los Angeles region are the Southern San Andreas, San Jacinto, and Elsinore faults. **Table 4.7-1** identifies the distances of the closest active faults to the proposed Project as well as the maximum estimated magnitude events that could occur along the faults. Based on a review of earthquake fault zone maps, the proposed Project would not be located within an Alquist-Priolo Fault Zone, which are areas delineated to identify potential for ground surface rupture. The Elsinore Fault Zone, Chino Section, is located approximately 2.5 miles west of the proposed Project area and is the nearest mapped Alquist-Priolo Fault Zone (CGS, 2003).

TABLE 4.7-1
ACTIVE FAULTS WITHIN 20 MILES OF THE PROJECT

Fault	Distance to the Proposed Project (miles)	Fault Length (miles)	Maximum Magnitude Events	
			Earthquake Moment Magnitude (M_w)	Slip Rate (mm/yr)
Elsinore Fault Zone, Chino Section	2.5	48.0	6.7	2.0-7.0
Elsinore Fault Zone, Glen Ivy Section	3.1	22.4	6.8	3.0-7.0
Elsinore Fault Zone, Temecula Section	20.0	26.7	6.8	3.0-7.0
Elsinore Fault Zone, Whittier Section	7.1	23.6	6.8	1.5-3.5
San Andreas Fault Zone, San Bernardino Mountains Section	19.0	92.4	7.5	6.0-30.0
San Jacinto Fault Zone, San Bernardino Section	16.8	31.9	6.7	6.0-18.0
San Jacinto Fault Zone, San Jacinto Valley Section	14.7	48.3	6.9	6.0-18.0

SOURCE: Cao et al., 2003.

4.7.1.3 Soils

Soils overlie ~~Overlying~~ the geologic units described in Section 4.7.1.1, *Regional Geology*, within the Project area ~~above is a layer of soil~~. In general, soil characteristics are strongly governed by slope, relief, climate, vegetation, and the rock type upon which they form. Soil types are important in describing engineering constraints such as erosion and runoff potential, corrosion risks, and various behaviors that affect structures, such as expansion and settlement.

Soils data in the Project Area were collected by the United State Department of Agriculture, and were accessed using Web Soil Survey (NRCS, 2016). These data include information about soil suitability for various land uses, soil chemical and physical properties, and descriptions of soil types. Soil map units within the Project area and soil properties relevant to the impact analysis of the Project are summarized in **Table 4.7-2**, *Project Area Soils*. The soil types are mapped relative to the proposed Project alignments and sites in **Figure 4.7-2a**, *Soil Types in the Northern Project Area*, and **Figure 4.7-2b**, *Soil Types in the Southern Project Area*.

Based on the general information collected in soil surveys, soils along the Project alignments and sites are derived from sedimentary, metasedimentary, and granitic rocks, and from the mixed alluvium eroded from these source rocks. The drainage characteristics and runoff classification of these soils vary. Generally, the soils along the Project have low shrink-swell potential. Erosion hazard and wind erodibility also vary along the Project alignments and sites, from very low susceptibility to high susceptibility depending on the content of the soil (see *Erosion and Runoff* discussion below).

Detailed soil information was collected at the Circle City Substation site during a geotechnical investigation conducted for the Project. It was determined that the Circle City Substation site is in an area underlain by a thin mantle of un-compacted fill overlying young alluvial channel deposits of the Temescal Wash, which range from fine grained mixtures of silt, sand, and some gravel, to coarse granular alluvium containing sand, gravel, cobbles and boulders mixtures. Uncompacted fill was encountered to a depth of about 2 feet, under which lay approximately 4 feet of generally fine grained, silt, sand, and gravel mixtures. Coarsely granular alluvium consisting of sand, gravel, cobble, and boulder mixtures to a depth of 28 feet were encountered below the top 6 feet (TDBU, 2012).

Erosion and Runoff

Erosion is a natural process whereby soil and highly weathered rock materials are worn away and transported, most commonly by wind or water. Soil erosion can become problematic when human intervention causes rapid soil loss and the development of erosional features (such as incised channels, rills, and gullies) that undermine roads, buildings, or utilities. Vegetation clearing and earth moving reduces soil structure and cohesion, resulting in abnormally high rates of erosion, referred to as accelerated erosion. This typically occurs during construction activity involving grading and soil moving activities (i.e., presence of soil stockpiles, earthen berms, etc.) that loosen soils and makes them more susceptible to wind and water erosion. Further, the operation of associated heavy machinery and vehicles over access roads, staging areas, and work areas can compact soils and decrease their capacity to absorb runoff, resulting in rills, gullies, and excessive sediment transport.

TABLE 4.7-2
PROJECT AREA SOILS

Soil Map Unit	Soil Series	Parent Material	Runoff Classification[a]	Shrink/Swell Potential[b]	Drainage	Erosion Hazard[c]	Wind Erodibility Group[d]
AlC	Arbuckle gravelly loam, 2- to 8-percent slopes	Metasedimentary rock	Medium	Moderate (5.9)	Well drained	Low	6
BhA	Buchenau loam, slightly saline-alkali, up to 2-percent slopes	Mixed	Low	Moderate (5.9)	Moderately well drained	Moderate	6
BhC	Buchenau loam, slightly saline-alkali, 2 to 8 percent slopes	Mixed	Medium	Moderate (5.9)	Moderately well drained	Moderate	6
CaF2 [e]	Cajalco fine sandy loam, 15 to 35 percent slopes, eroded	Igneous rock	High	Moderate (5.9)	Well drained	Moderate	3
Cb	Chino silt loam	Mixed	Medium	Moderate (5.9)	Somewhat poorly drained	Moderate	4L
Ce	Chino silt loam, drained	Granite	Medium	Moderate (5.9)	Somewhat poorly drained	High	6
CkA	Chualar clay loam, up to 2-percent slopes	Mixed	Medium	Moderate (5.9)	Well drained	Moderate	6
CkC	Chualar clay loam, 2 to 9 percent slopes	Alluvium	Medium	Moderate (5.9)	Well drained	Moderate	6
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded	Igneous rock	Medium	Low (2.9)	Somewhat excessively drained	Moderate	3
CoA	Cortina sandy loam, up to 2-percent slopes	Metasedimentary rock	Very low	Low (2.9)	Somewhat excessively drained	Low	5
CpA	Cortina gravelly sandy loam, up to 2-percent slopes	Metasedimentary rock	Very low	Low (2.9)	Somewhat excessively drained	Low	5
DaD2	Delhi fine sand, 2 to 15 percent slopes, wind-eroded	Granite alluvium	Very low	Low (2.9)	Somewhat excessively drained	Moderate	1
Db	Delhi fine sand	Granite	Negligible	Low (2.9)	Somewhat excessively drained	Low	1
DmA	Dello loamy sand, poorly drained, up to 2-percent slopes	Granite	Negligible	Low (2.9)	Poorly drained	Low	2
DrA	Dello loamy fine sand, gravelly substratum, up to 2-percent slopes	Granite	Negligible	Low (2.9)	Somewhat poorly drained	Moderate	2
Du	Domino silt loam	Granite alluvium	High	Moderate (5.9)	Moderately well drained	High	4L
FkD2	Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded	Igneous rock	Medium	Moderate (5.9)	Well drained	Moderate	3

TABLE 4.7-2 (CONTINUED)
PROJECT AREA SOILS

Soil Map Unit	Soil Series	Parent Material	Runoff Classification[a]	Shrink/Swell Potential[b]	Drainage	Erosion Hazard[c]	Wind Erodibility Group[d]
GaA	Garretson very fine sandy loam, 0 to 2 percent slopes	Metasedimentary rock	Low	Low (2.9)	Well drained	Moderate	3
GdA	Garretson gravelly, very fine sandy loam, up to 2-percent slopes	Metasedimentary rock	Low	Low (2.9)	Well drained	Moderate	5
GdC	Garretson gravelly, very fine sandy loam, 2- to 8-percent slopes	Metasedimentary rock	Medium	Low (2.9)	Well drained	Moderate	5
GoB	Grangeville loamy fine sand, drained, up to 5-percent slopes	Granite	Very low	Low (2.9)	Moderately well drained	Low	5
GP	Gravel pits		Negligible	Low (2.9)	Excessively drained	--	
Gr	Grangeville fine sandy loam	Granite	Very low	Low (2.9)	Somewhat poorly drained	Low	3
GsB	Grangeville sandy loam, sandy substratum, drained, saline-alkali, up to 5-percent slopes	Granite	Very low	Low (2.9)	Moderately well drained	Low	3
GuB	Grangeville fine sandy loam, poorly drained, saline-alkali, up to 5-percent slopes	Granite	Low	Low (2.9)	Poorly drained	Moderate	3
GyA	Greenfield sandy loam, 0 to 2 percent slopes	Granite alluvium	Very Low	Low (2.9)	Well drained	Moderate	3
GyC2	Greenfield sandy loam, 2- to 8-percent slopes, eroded	Granite	Low	Low (2.9)	Well drained	Moderate	3
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	Granite alluvium	Low	Low (2.9)	Well drained	Moderate	3
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	Granite alluvium	Very Low	Low (2.9)	Well drained	Moderate	3
HhA2	Hilmar loamy sand, up to 2-percent slopes, eroded	Granite	High	Low (2.9)	Moderately well drained	High	2
HlA	Hilmar loamy very fine sand, up to 2-percent slopes	Granite	Negligible	Low (2.9)	Moderately well drained	Moderate	2
HlC	Hilmar loamy very fine sand, 2 to 8 percent slopes	Granite alluvium	Negligible	Low (2.9)	Moderately well drained	Moderate	2
Hr	Hilmar loamy fine sand	Granite	Medium	Low (2.9)	Somewhat poorly drained	Low	2

TABLE 4.7-2 (CONTINUED)
PROJECT AREA SOILS

Soil Map Unit	Soil Series	Parent Material	Runoff Classification[a]	Shrink/Swell Potential[b]	Drainage	Erosion Hazard[c]	Wind Erodibility Group[d]
MgB	Metz loamy fine sand, gravelly sand substratum, up to 5-percent slopes	Sedimentary rock	Very low	Low (2.9)	Somewhat excessively drained	Moderate	2
PaA	Pachappa fine sandy loam, 0 to 2 percent slopes	Granite alluvium	Low	Moderate (5.9)	Well drained	Moderate	3
PlB	Placentia fine sandy loam, up to 5-percent slopes	Granite	Very high	High (8.9)	Moderately well drained	Moderate	3
PlD	Placentia fine sandy loam, 5- to 15-percent slopes	Granite	Very high	High (8.9)	Moderately well drained	Moderate	3
RaA	Ramona sandy loam, up to 2-percent slopes	Granite	Low	Low (2.9)	Well drained	Moderate	3
RaB2	Ramona sandy loam, 2- to 5-percent slopes, eroded	Granite	Low	Low (2.9)	Well drained	Moderate	3
RaB3	Ramona sandy loam, up to 5-percent slopes, severely eroded	Granite	Medium	Low (2.9)	Well drained	Moderate	3
RaC2	Ramona sandy loam, 5 to 8 percent slopes, eroded	Granite alluvium	Medium	Low (2.9)	Well drained	Moderate	3
RaC3	Ramona sandy loam, 5- to 8-percent slopes, severely eroded	Granite	High	Low (2.9)	Well drained	Moderate	3
RaD3	Ramona sandy loam, 8- to 15-percent slopes, severely eroded	Granite	High	Low (2.9)	Well drained	Moderate	3
RaE3	Ramona sandy loam, 15- to 25-percent slopes, severely eroded	Granite	Very high	Low (2.9)	Well drained	Moderate	3
ReC2	Ramona very fine sandy loam, up to 8-percent slopes, eroded	Granite	Low	Low (2.9)	Well drained	High	3
RmC	Ramona sandy loam, 2- to 9-percent slopes	Granite	Medium	Low (2.9)	Well drained	N/A	N/A
RsC	Riverwash	Mixed	Very low	0	Excessively drained	Low	1
RuF[e]	Rough broken land		Very high	--	--	--	--
SeA	San Emigdio fine sandy loam, up to 2-percent slopes	Sedimentary rock	Very low	Low (2.9)	Well drained	High	3

TABLE 4.7-2 (CONTINUED)
PROJECT AREA SOILS

Soil Map Unit	Soil Series	Parent Material	Runoff Classification[a]	Shrink/Swell Potential[b]	Drainage	Erosion Hazard[c]	Wind Erodibility Group[d]
SfA	San Emigdio fine sandy loam, deep, 0 to 2 percent slopes	Sedimentary rock	Very low	Low (2.9)	Well drained	Moderate	3
SgA	San Emigdio loam, up to 2-percent slopes	Sedimentary rock	Very low	Low (2.9)	Well drained	High	5
TbF2[e]	Temescal rocky loam, 15 to 50 percent slopes, eroded	Igneous rock	High	Low (2.9)	Well drained	High	5
TeG	Terrace escarpments	Not Applicable (N/A)	Very high	0	N/A	N/A	N/A
Wb	Waukena fine sandy loam, saline-alkali	Granite alluvium	High	Moderate (5.9)	Moderately well drained	Moderate	3

NOTES:

[a] Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

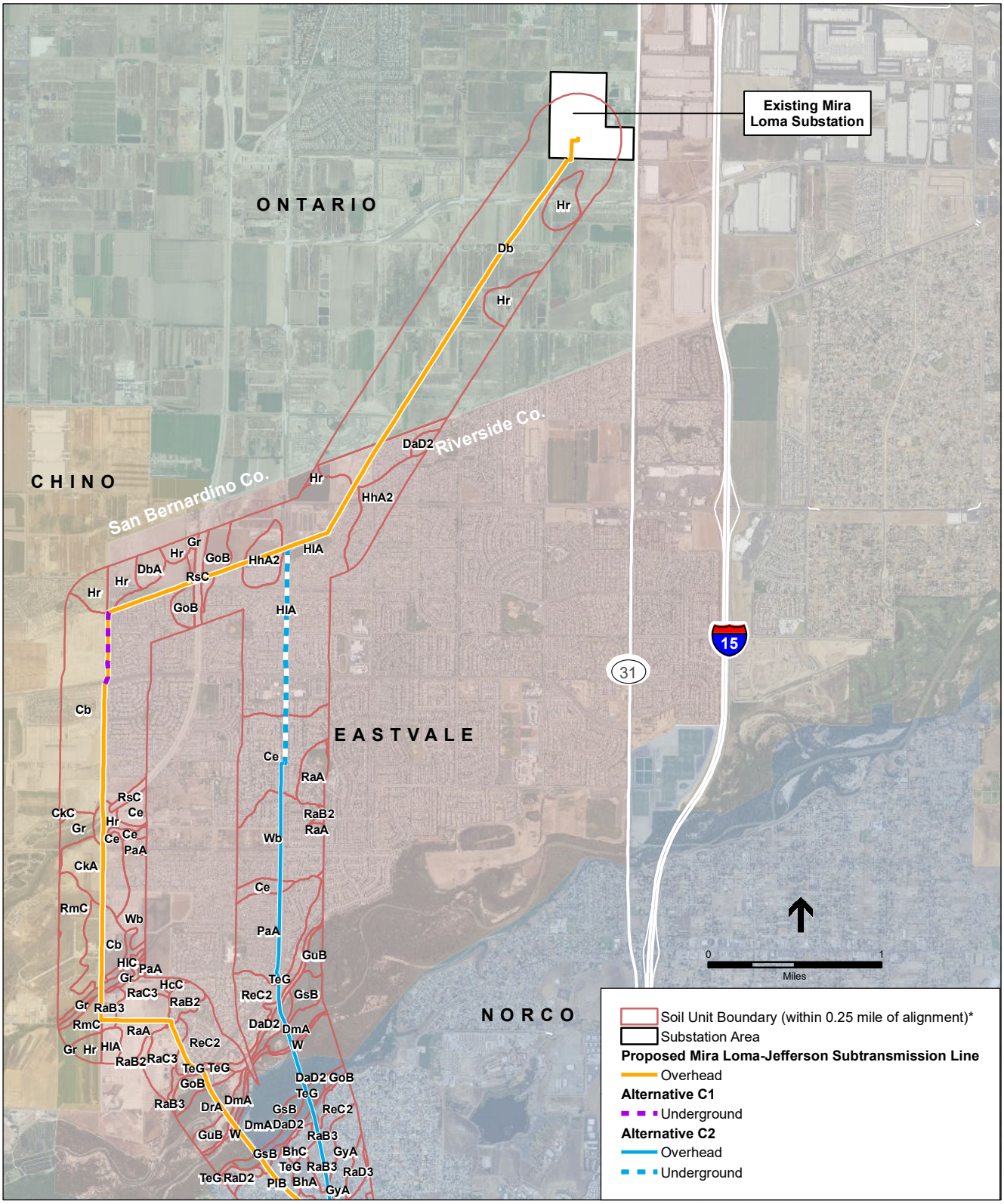
[b] This value represents the coefficient of linear extensibility, which is estimated from the bulk density of soil measured when wet and dry. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent.

[c] Erosion hazard is rated based on the soil erodibility factor (K), which represents the susceptibility of soil or surface material to erosion, the transportability of the sediment, and the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. The California Water Resources Control Board identifies erosion hazard as low for K values ranging from 0.05 to 0.20, moderate for K values ranging from 0.25 to 0.45, and high for K values ranging from 0.45 to 0.69.

[d] Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion. The soils assigned to Group 1 are the most susceptible to wind erosion, and those assigned to Group 8 are the least susceptible.

[e] Soils that are within 0.25 mile of Source Line Alternative 3 only.

SOURCE: SCE, 2015; NRCS, 2016.



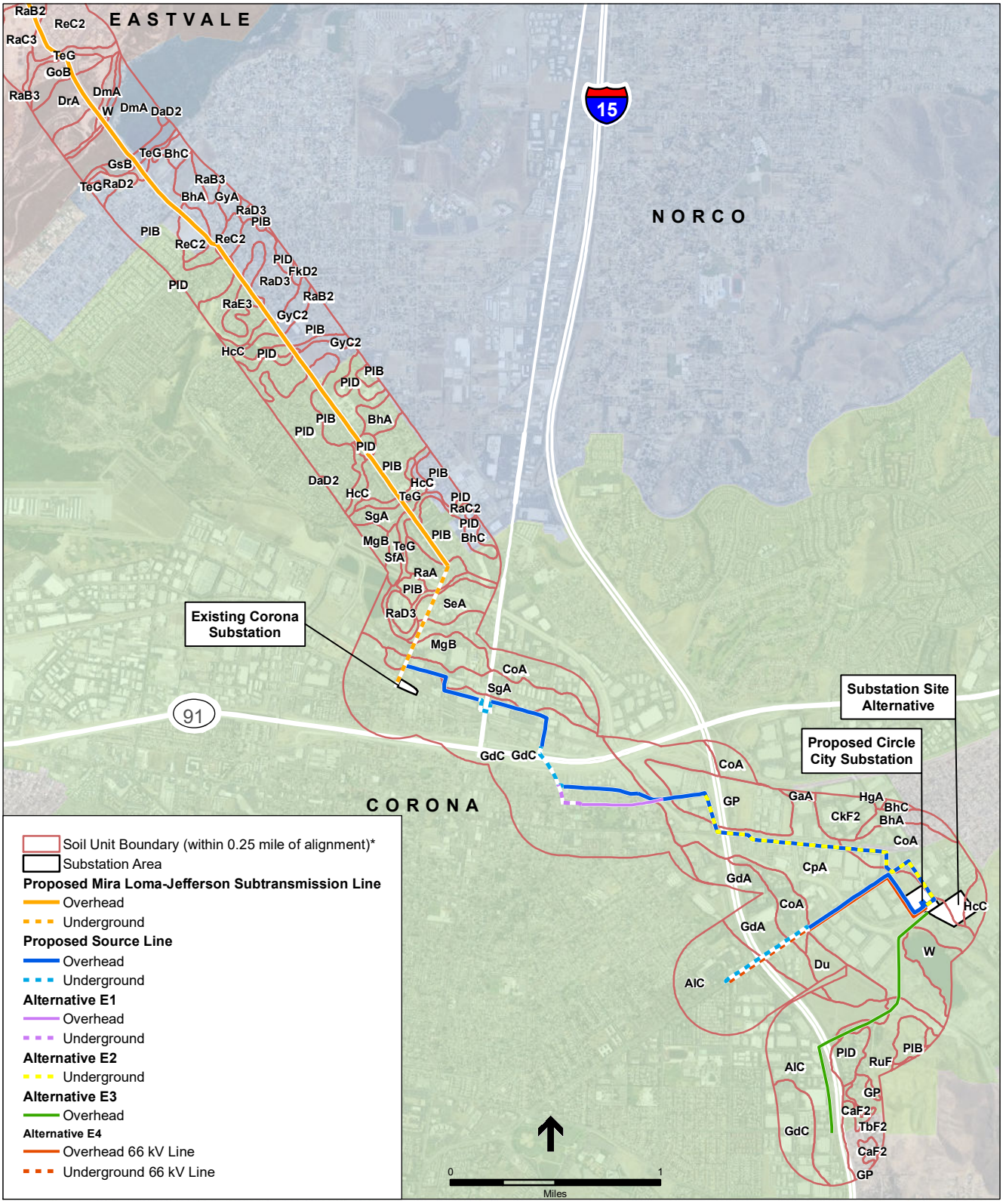
*See Table 4.7-2 for full description of soil units.

SOURCE: SCE, 2015; NRCS, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.7-2a

Soil Types in the Northern Project Area



*See Table 4.7-2 for full description of soil units.

SOURCE: SCE, 2015; NRCS, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.7-2b

Soil Types in the Southern Project Area

Natural rates of erosion can vary depending on slope, soil type, and vegetative cover (regional erosion rates are also dependent on tectonics and changes in relative sea level). Soils containing high amounts of silt are typically more easily eroded, while coarse-grained (sand and gravel) soils are generally less susceptible to erosion. The susceptibility of soils to water erosion along the Project alignments and sites ranges from low (soils on gentle slopes with bigger particles) to high (relatively steep slopes with a shallow depth to bedrock). Susceptibility of Project area soils to wind erosion generally is low, but increases to moderate levels for certain soils along the Project alignment. **Figure 4.7-3**, *Erosion Hazard and Liquefaction Susceptibility in the Project Area*, shows erosion hazard of soils traversed by the Project alignment. The soils with the highest erosion hazard along the Mira Loma-Jefferson subtransmission line and the Pedley Source Lines, generally from north to south, are the Hilmar loamy sand (HhA2, in northern Eastvale), Ramona very fine sandy loam (ReC2, north and south of the Santa Ana River corridor), San Emigdio loam (SgA, located both near the border of Corona and Norco and north of the Corona Substation), and San Emigdio fine sandy loam (SeA, along Temescal Wash north of the Corona Substation). Soils with low erosion hazard characteristics are generally present along the Mira Loma-Jefferson subtransmission line from the Mira Loma Substation to Eastvale, along Cucamonga and Mill Creeks, within the Santa Ana River corridor, and in areas south and east of Temescal Wash in Corona. The Circle City Substation is within an area mapped as having low soil erosion hazard. Generalized areas where soils may exhibit moderate to high wind erodibility have been mapped by the County of Riverside along the Project alignments (County of Riverside, 2015b).

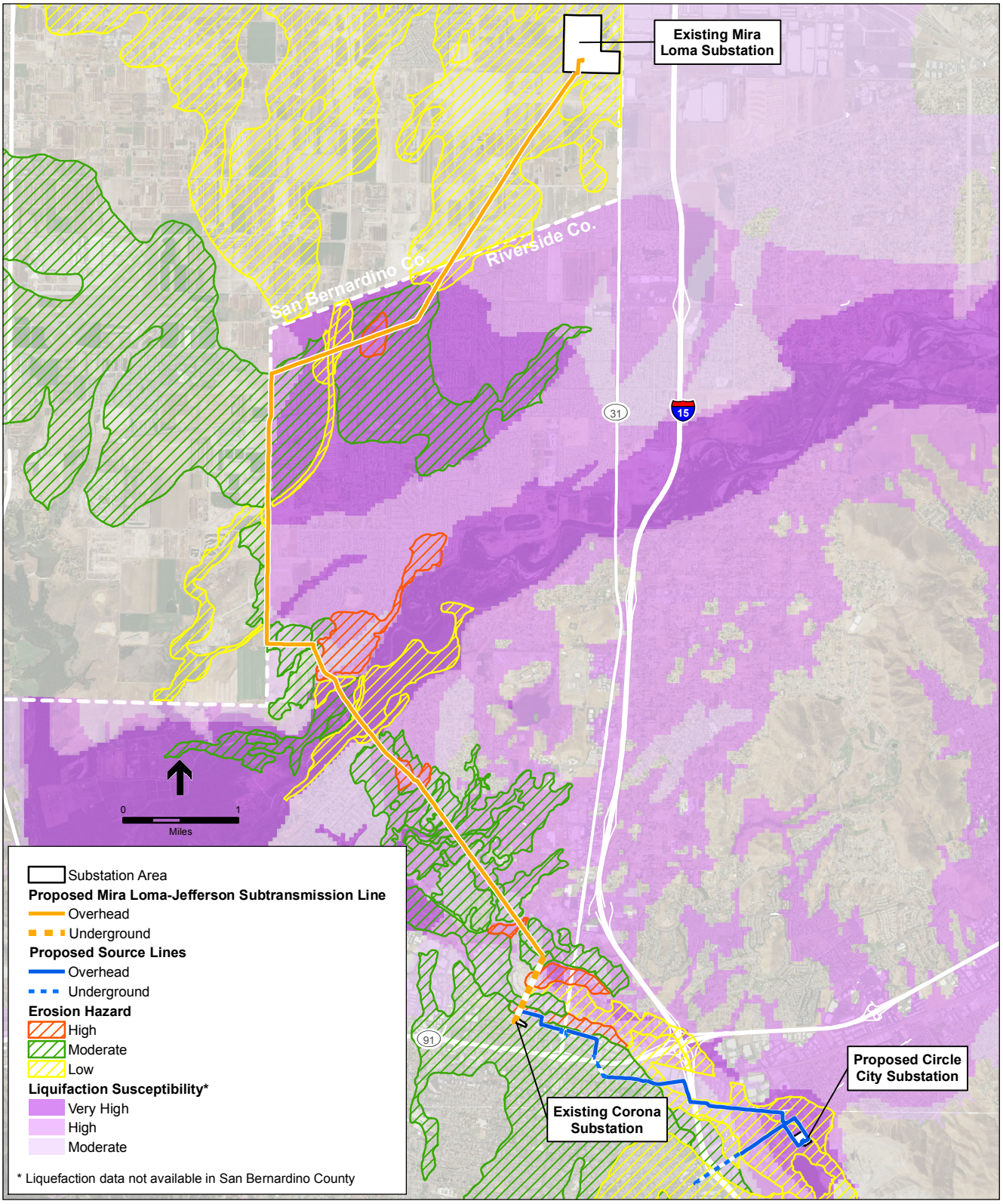
Collapsible Soils

Collapsible soils are soils that compact and collapse after they get wet. This can occur when the soil particles are loosely packed. Once water has filled the pores of the loosely packed soil the soil particles become buoyant and then sink, causing a reduction in the overall soil volume. The amount of collapse (or reduction in volume) depends upon how loosely the soil particles were packed and the thickness of the soil. Collapsible soils tend to form in drier climates at valley margins where alluvium is deposited by streams due to the change in topography or where wind-blown sediments are deposited (these sediments are called loess).

In Riverside and San Bernardino Counties, collapsible soils occur predominantly at the base of the mountains, where Holocene-age alluvial fan and wash sediments have been deposited during rapid runoff events. Some windblown sands may also be vulnerable. The Project alignments traverse soils of varying density. Wind-deposited sediments have been mapped in the area of the proposed Mira Loma-Jefferson subtransmission line alignment through Eastvale (City of Eastvale, 2012). At the Circle City Substation site, soils are dense and unlikely to be subject to collapse (TDBU, 2012).

Expansive Soils

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, such as building and structure foundations or underground utilities, and can result in structural distress and/or damage. Often, grading, site preparations, and backfill operations associated with subsurface structures can eliminate the



SOURCE: NRCS, 2016; Riverside County, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.7-3

Erosion Hazard and Liquefaction Susceptibility in the Project Area

potential for expansion. Expansive soils are defined in the California Building Code as those soils demonstrating certain distributions of particle sizes and that have an expansion index greater than 20. The other criterion requires that the soil has a plasticity index of 15 or greater, more than 10 percent of soil particles are silt or clay-sized, and 10 percent of the soil particles are smaller than 5 micrometers.

At the Circle City Substation site, soil samples were collected and tested for expansion as part of the geotechnical investigation. Testing indicated the site soils have very low expansion potential, and therefore no measures to treat expansive soils ~~geotechnical recommendations~~ were identified ~~made~~ (TDBU, 2012). Along the Project alignments, soils also generally exhibit low shrink-swell potential. Only the Chualar clay loam (CkA), that would be crossed by the proposed Mira Loma-Jefferson subtransmission line north of the Santa Ana River in Chino, exhibits moderate shrink-swell potential.

4.7.1.4 Geologic Hazards

A geologic hazard is a geologic condition, either natural or man-made, that poses a potential danger to life and property. A discussion of possible geologic hazards in the study area is presented in the following sections.

Seismic Activity

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults, or even along different strands of the same fault. Ground rupture is considered most likely along faults that have a record of displacement sometime in the past 11,000 years (i.e., during the Holocene).

Generally, the greater the earthquake magnitude and the closer the fault rupture to a site, the greater the intensity of ground shaking. The amplitude and frequency of ground shaking are related to the size of fault displacement, the distance from the causative fault, the type of fault (e.g., strike-slip), and the response of the geologic materials at the site. Ground shaking can be described in terms of acceleration, velocity, and displacement of the ground.

A common measure of ground motion during an earthquake is the peak ground acceleration (PGA).[2] Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place, and is dependent on the distance from the epicenter and the character of the underlying geology (e.g., hard bedrock, soft sediments, or artificial fills).

The primary tool that seismologists use to evaluate ground-shaking hazard and characterize statewide earthquake risks is a probabilistic seismic hazard assessment (PSHA). The PSHA for the State of California takes into consideration the range of possible earthquake sources and

[2] The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 9.8 meters per second squared. In terms of automobile acceleration, one "g" of acceleration is equivalent to the motion of a car traveling 328 feet from rest in 4.5 seconds.

estimates their characteristic magnitudes to generate a probability map for ground-shaking. The PSHA maps depict values of PGA that have a 10 percent probability of being exceeded in 50 years (or a 1 in 475 chance per year). This probability level allows engineers to design structures for ground motions that have a 90 percent chance of not occurring in the next 50 years, making structures safer than if they were simply designed for the most likely events.

The PGA mapped in the project alignment generally ranges from 0.49g at the Circle City Substation site to 0.45g at the Mira Loma Substation, generally based on distance from the Elsinore Fault Zone (CGS, 2008). One historical earthquake on the Elsinore fault south of the Santa Ana Canyon occurred in 1910 with a moment magnitude of 6.0. The Project alignments and sites are within an area with very high general ground shaking risk (County of Riverside, 2015a).

The Modified Mercalli Intensity (MMI) scale (**Table 4.7-3**) assigns an intensity value based on the observed effects of ground shaking produced by an earthquake. Unlike measures of earthquake magnitude and PGA, the MMI scale is qualitative in nature, meaning that it is based on actual observed effects rather than measured values. Similar to PGA, MMI values for an earthquake at any one place can vary depending on its magnitude, the distance from its epicenter, the focus its energy, and the type of geologic material. The MMI values for intensity range from I (earthquake not felt) to XII (damage nearly total). Intensities ranging from IV to X can cause moderate to significant structural damage. Because the MMI scale is a measure of ground shaking effects, intensity values can be related to a range of average PGA values, also shown in Table 4.7-3. The PGA values identified along the Project alignment correspond to very strong ground shaking.

Liquefaction and Lateral Spreading

Soil liquefaction is caused by pressure waves moving through the ground due to earthquakes. Research and historical data indicate that loose granular soils and non-plastic silts that are saturated by relatively shallow groundwater (generally less than 50 feet below the ground surface) are susceptible to liquefaction. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Liquefaction causes soil to lose strength and “liquefy,” triggering structural distress or failure due to the dynamic settlement of the ground or a loss of strength in the soils underneath structures. Liquefaction in a subsurface layer can in turn cause lateral spreading of the ground surface, which usually takes place along weak shear zones that have formed within the liquefiable soil layer. Lateral spreading has generally been observed to take place in the direction of a free face (e.g., a retaining wall or slope).

Liquefaction Hazard for Riverside County

Liquefaction susceptibility in the project vicinity is generally greater in areas along streams and their tributaries, where groundwater is consistently shallow and relatively thick alluvial deposits (particularly sand and silt) have developed. Figure 4.7-3 identifies liquefaction seismic hazard zones in the Project area. This map illustrates general liquefaction hazard areas identified by Riverside County, as the State of California Department of Conservation Seismic Hazards Zonation Program does not have available data for the Project area.

TABLE 4.7-3
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Ground Acceleration*
I	Not felt. Marginal and long period effects of large earthquakes.	< 0.0017 g
II	Felt by persons at rest, on upper floors, or favorably placed.	0.0017–0.014 g
III	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.	
IV	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.	0.014–0.039g
V (Light)	Felt outdoors. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.	0.039–0.092 g
VI (Moderate)	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster, adobe buildings, and some poorly built unreinforced masonry buildings cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).	0.092–0.18 g
VII (Strong)	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to some poorly built unreinforced masonry buildings. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks even in better built masonry buildings if not reinforced. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.	0.18–0.34 g
VIII (Very Strong)	Critical or extensive damage to some buildings, but well-designed buildings are largely undamaged. Steering of motor cars affected. Damage to unreinforced masonry buildings, including partial collapse. There is no damage to well-designed reinforced masonry buildings. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.	0.34–0.65 g
IX (Violent)	General panic. Damage to masonry buildings ranges from collapse to serious damage unless modern design. Wood frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.	0.65–1.24 g
X (Very Violent)	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.	> 1.24 g
XI (Very Violent)	Rails bent greatly. Underground pipelines completely out of service.	> 1.24 g
XII (Very Violent)	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.	> 1.24 g

NOTE: Value is expressed as a fraction of the acceleration due to gravity. Gravity (g) is 9.8 meters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCE: ABAG, 2010; Wald et al., 1999.

The extent of the proposed subtransmission line within San Bernardino County does not traverse generalized liquefaction susceptible areas or areas of suspected liquefaction susceptibility (County of San Bernardino, 2009). Most of the project alignment traverses areas mapped by the County of Riverside as generally susceptible to liquefaction (County of Riverside, 2015b). Areas of potentially very high susceptibility occur along the Mira Loma-Jefferson subtransmission line in Eastvale and in the Santa Ana River corridor (County of Riverside, 2015b).

Several other areas within the City of Corona are susceptible to liquefaction, in particular the Prado Basin and adjacent areas in the northwestern portion of the City (City of Corona, 2004b). However, the Project alignment within Temescal Wash would be within a zone of low liquefaction susceptibility (City of Corona, 2004a).

Site-specific geotechnical studies are the most accurate way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. Areas in Chino have high groundwater and unconsolidated sediments, although no liquefaction susceptibility mapping is available in the area (City of Chino, 2010). However, the Project alignment in the adjacent City of Eastvale has been identified as having high to very high susceptibility to liquefaction (City of Eastvale, 2012). The presence of shallow groundwater (within 50 feet of the ground surface) increases the liquefaction susceptibility of this area.

While the site proposed for the Circle City Substation is within a generalized area mapped by the County of Riverside as having very high susceptibility to liquefaction, a site-specific geotechnical investigation report prepared for the Circle City Substation site indicates that the susceptibility of the site to liquefaction, differential settlement, and lateral spreading during earthquakes is low due to the absence of shallow groundwater (depth to groundwater is suspected to be greater than 60 feet below ground surface) and the dense condition of the subsurface soil (TDBU, 2012).

Subsidence

Land subsidence, the lowering of the ground surface due commonly to fluid withdrawal (such as groundwater or oil) or less commonly due to tectonic warping, has been a concern in alluvial valleys in southwestern San Bernardino County and northwestern Riverside County (County of San Bernardino, 2014; County of Riverside, 2015b). Subsidence in Riverside County has also occurred as a result of hydrocollapse when groundwater levels rise (County of Riverside, 2015b). The Chino Valley has experienced subsidence from groundwater withdrawal (County of San Bernardino, 2014). The portion of the Mira Loma-Jefferson subtransmission line alignment in Eastvale, north of the Santa Ana River, is susceptible to subsidence (City of Eastvale, 2012). However, there is no indication that the area of Corona located south of the Prado Flood Control Basin has experienced significant regional subsidence over time (City of Corona, 2004b).

Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic e.g., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock

avalanches, while soil slopes experience soil slumps, rapid debris flows, and deep-seated rotational slides. Slope stability can depend on a number of complex variables, including the geology, structure, and amount of groundwater, as well as external processes such as climate, topography, slope geometry, and human activity. The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Areas having the potential for earthquake-induced landsliding generally occur in areas of previous landslide movement, or where local topographic, geological, geotechnical, and/or subsurface water conditions indicate a potential for permanent ground displacements.

The potential for earthquake-induced landsliding in the hillside terrain in Corona exists; however, in general, areas such as the steep slopes of the Santa Ana Mountains and the steep slopes within the Elsinore Fault zone are the areas considered to be relatively susceptible to earthquake-induced landsliding (City of Corona, 2004b). In addition to earthquake-induced failures of natural slopes, failures of man-made slopes could also occur in the existing quarry located near the Circle City Substation site. However, the proposed Circle City Substation and source line alignments are not within any mapped landslide hazard areas (City of Corona, 2004a). No landslide hazard areas are mapped along the Project alignments or sites (County of Riverside, 2015b; County of San Bernardino, 2014). Also, the site topography is relatively level and the absence of nearby slopes precludes any slope stability hazards; the potential for seismically-induced landslides at any of the Project subtransmission alignments ~~or sites~~ is considered low. In addition, the potential for seismically-induced landslides within the Circle City Substation site is also considered low (TBDU Geotechnical Engineering Group, 2012).

4.7.1.5 Regulatory Setting

Federal

There are no federal regulations regarding geology and soils applicable to the Project.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State geologist established regulatory zones, called “earthquake fault zones,” around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace, because many active faults are complex and consist of more than one branch. There is the potential for ground surface rupture along any of the branches.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council, which replaced the Uniform Building Code. The code is updated triennially, and the 2016 edition of the CBC was published by the California Building Standards Commission on July 1, 2016, and took effect starting January 1, 2017. The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads[1] as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in-accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (§1803), excavation, grading, and fills (§1804), load-bearing of soils (§1806), as

[1] A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

well as foundations (§1808), shallow foundations (§1809), and deep foundations (§1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

California Public Utilities Commission General Order 95

California Public Utilities Commission (CPUC) General Order 95 applies to construction and reconstruction of overhead electric lines in California. The replacement of poles, towers, or other structures is considered to be reconstruction and requires adherence to all strength and clearance requirements of this order. For the purpose of recognizing relative hazards, lines are segregated into classes defined in CPUC Rule 20.6. These classes of lines and the relation of lines to each other and to objects over which they are constructed determine construction requirements.

Codes to which design of transmission lines must adhere include the National Electric Safety Code. Guidance documents are published by the Institute of Electrical and Electronics Engineers and ASCE, including ASCE 74, Guidelines for Electrical Transmission Line Structural Loading, which states that "Transmission structures are not typically designed for vibration caused by earthquakes because these loads are less than that of wind/ice combinations." The exception to this general rule occurs if the tower is built in liquefiable materials, in which case the materials may not support the weight of the tower and tower foundation during a seismic event.

California Public Utilities Commission General Order 128

CPUC General Order 128 Rules for Construction of Underground Electric Supply and Communication Systems provides general standards for the construction of underground electric systems.

California Public Utilities Commission General Order 165

CPUC General Order 165 Inspection Requirements for Electric Distribution and Transmission Facilities establishes inspection requirements for electric distribution and transmission facilities (excluding those facilities contained in a substation) in order to ensure safe and high-quality operation. Inspection cycles for overhead conductor and cables and wood poles in urban areas (defined as areas with greater than 1,000 people per square mile) is once per year, and in rural areas once every two years.

Construction Safety Orders (Cal/OSHA)

The California Code of Regulations, Title 8, Sections 1500 through 1962, contains Construction Safety Orders promulgated by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) that establish minimum safety standards whenever

employment exists in connection with the construction, alteration, painting, repairing, construction maintenance, renovation, removal, or wrecking of any fixed structure or its parts. Safety requirements during excavation, such as sloping and benching or support systems, are also enumerated in these Orders.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate "zones of required investigation" (i.e., seismic hazard zones) where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. The Project alignments and sites do not traverse and/or are otherwise located in any mapped zones of required investigation because the State Geologist has not mapped zones of required investigation in areas traversed by the project.

National Pollutant Discharge Elimination System Program, CWA Section 402

Under the CWA Section 402, the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the United States. The California State Water Resources Control Board (SWRCB) administers the NPDES permit program in California.

Projects that disturb one or more acres of soil must obtain coverage under the state's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each project covered by the general permit. The SWPPP provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of soil. A SWPPP must be prepared by a qualified professional before construction begins and must be designed to meet the following objectives:

- All pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled;
- Where not otherwise required to be under a Regional Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
- Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the best available technology/best control technology standard;
- Calculations and design details as well as BMP controls for site run-on are complete and correct, and
- Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The required components and BMPs commonly included in a SWPPP are described in greater detail in Section 4.10, *Hydrology and Water Quality.*

Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the proposed Project. Pursuant to CPUC General Order 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project.

Riverside County General Plan

The Riverside County General Plan contains multiple policies related to geologic hazards. Relevant policies include (County of Riverside, 2015b):

Policy S 2.2, which requires geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement, for any structure whose damage would cause harm, except for accessory buildings.

Policy S 2.3, which requires that a state-licensed professional investigate the potential for liquefaction in areas designated as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all general construction projects, except for accessory buildings

Policy S 2.4 requires the same investigation as required by Policy S.2.3 in areas underlain by "Susceptible Sediments" for all proposed critical facilities, except for accessory buildings.

Policy S 3.11, which requires studies that address the potential of wind erosion hazards on proposed development within areas mapped by Riverside County as having "High" or "Very High" wind erosion hazard.

City of Corona

Chapter 15.36 of the City of Corona Municipal Code requires a grading permit for excavations deeper than 2 feet, a cut slope taller than 5 feet and steeper than a 2-to-1 horizontal-to-vertical ratio, or for grading activities greater than 100 cubic yards. In order to obtain a permit, the applicant must submit grading plans prepared by a civil engineer.

City of Norco

Chapter 6.32 of the Norco Municipal Code requires a grading permit for excavations deeper than 2 feet or that remove or fill greater than 60 cubic yards of material. Grading plans prepared by a soils engineer must be submitted to and approved by the Public Works Department in order to obtain a permit.

City of Eastvale

Chapter 12.08 of the Eastvale Municipal Code identifies permit requirements for excavations in the public right of way. Applications must be submitted to the Public Works Department, and all excavations must be completed in compliance with all current federal, state, and local safety

regulations and requirements. Other requirements include prompt removal of rubble and surplus excavated material and cutting away of pavements overlying any caved sidewalls.

City of Ontario

Title 7, Chapter 3 of the Ontario Municipal Code requires prior authorization from the City before any excavation in public rights-of-way, and no excavation permit is issued by the City for any excavation greater than 5 feet deep until the applicant has obtained a "Permit to Excavate" from the State Department of Industrial Relations, Division of Industrial Safety.

City of Chino

Chapter 12.02 of the Chino Municipal Code requires that an encroachment permit be obtained from the City prior to excavation within the public right-of-way or private property. Before excavation, proposals, including agreements, to mitigate effects, damages, and risks to life and property associated with the excavation must be provided to the City.

4.7.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant geology and soils effects on the environment if it would:

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

   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.)

   ii. Strong seismic ground shaking

   iii. Seismic-related ground failure, including liquefaction

   iv. Landslides;

b) Result in substantial soil erosion or the loss of topsoil;

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

d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994)[3], creating substantial risks to life or property; or

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

[3] The CBC, based on the International Building Code and the now defunct Uniform Building Code, no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

4.7.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts on geology and soils.

4.7.4 Impacts and Mitigation Measures

4.7.4.1 Approach to Analysis

The following impact analysis considers whether and how construction and operation of the Project would directly or indirectly cause or exacerbate potential effects related to geology and soils. Each analysis evaluates whether the Project would alter the current conditions for the criteria identified above in Section 4.7.2. Impacts related to geologic and seismic hazards would be considered significant if they would cause injury, structural collapse, unrepairable facility or utility damage, or severe service disruption. This analysis assumes that construction and design of proposed facilities would utilize standard site preparation practices, engineering designs, and seismic safety techniques that are required under the CBC and other state and local geologic hazard regulations. Soil settlements, earthquake shaking, and/or liquefaction would not be considered significant in cases where structural damage would be minor, undetectable, repairable, or would otherwise not pose substantial risk to the public or the environment. Project components that repair or replace existing facilities that are old, deteriorated, built according to outdated building codes, or otherwise have structural impairments would be considered to have a beneficial impact with respect to geologic and seismic hazards.

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

i. Rupture of a known earthquake fault. (No Impact)

No faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act, or any other Holocene-active faults are traversed by any of the Project alignments or sites (see Figure 4.7-1). While the Project is located in a seismically active area, and there is no guarantee that fault rupture will only occur in areas demonstrating evidence of past faulting, rupture on faults not identified as active are considered less likely (Bryant and Hart, 2007). Additionally, the Project does not risk exacerbating these existing environmental hazards. Therefore, the potential impacts of these hazards on people or structures is not considered an impact under CEQA. Nor would it directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault. There would be no impact with respect to fault rupture.

ii. Strong seismic ground shaking.

Impact 4.7-1: Strong seismic ground shaking could damage Project structures exposing people to risks. *Less than significant* (Class III)

There is an existing potential for very strong seismic ground shaking in the Project area due to nearby active fault zones. As a result, structures associated with the proposed Project would experience strong seismic ground shaking. While the proposed Project would be located in an area susceptible to earthquakes, the subtransmission and distribution infrastructure involved would not be used for human occupancy and would be designed consistent with CPUC GO 95, *Rules for Overhead Line Construction*, to withstand wind, temperature, and wire tension loads. Accounting for these factors would result in a design that would be adequate to withstand expected seismic loading. In addition, the subtransmission and distribution infrastructure would be required to comply with CBC Chapter 16, a process which would include identifying the seismic design category of Project structures (factoring in the occupancy category of the structure, site class, soil classifications, and various seismic coefficients), determining the associated seismic design specifications, conducting any required site investigations, and incorporating any ground-stabilizing measures into Project design. Therefore, impacts related to seismic ground shaking would be less than significant.

Mitigation: None required.

---

iii. Seismic-related ground failure, including liquefaction.

Impact 4.7-2: The project would result in increased risk of substantial adverse effects involving liquefaction. *Less than significant with mitigation* (Class II)

As described in Section 4.7.1, the Project sites and alignments traverse areas ranging from low to high potential for liquefaction, based on the type of earth materials present and the elevation of groundwater.

The Circle City substation, for which a geotechnical investigation has been conducted, would be at low risk of substantial adverse effects involving liquefaction, differential settlement, or lateral spreading during earthquakes due to the absence of shallow groundwater in the area and the density of the subsurface soil (TDBU, 2012).

The linear facilities of the Project (i.e., the Mira Loma-Jefferson subtransmission line and the source lines) would cross through areas mapped as having high and very high liquefaction hazard due to soil characteristics and shallow depth to groundwater. The very high liquefaction zones are located along the Santa Ana River and in the northern area of Eastvale. While seismic loading due to ground shaking is less than the loading of wind and ice, an exception to this general rule regarding earthquake loading of subtransmission line structures occurs if the tower is built in liquefiable materials, in which case the materials may not support the weight of the pole and foundation (where applicable) during a seismic event. Installation of the proposed Mira Loma-Jefferson subtransmission line would replace existing older structures along the Project alignment

with new stronger structures and would not result in new adverse effects associated with liquefaction. Construction of the proposed Pedley and Databank source lines would include installation of new structures in areas mapped as being susceptible to liquefaction, resulting in new seismic hazard risks. Regardless of whether linear facilities of the Project would be new or replace existing structures, the Project would expose people and structures along the Project alignment to substantial risk of damage in the event that a Project-related structure would collapse due to seismically-induced liquefaction. This would be a significant impact.

Although liquefaction creates a risk to a structure's integrity, liquefaction potential can be minimized or eliminated through implementation of appropriate mitigation (such as excavation of liquefaction-prone soils and backfilling with stable fill and the use of concrete piles). Implementation of Mitigation Measure 4.7-2 would reduce liquefaction impacts to a less-than-significant level by ensuring that appropriate site-specific engineering recommendations are performed to reduce the risk of substantial adverse liquefaction effects of the Project.

> **Mitigation Measure 4.7-2:** SCE or its contractor shall conduct a design-level geotechnical investigation for all of the approved Project sites and alignments that have not yet been investigated and shall prepare a geotechnical report documenting the results of the investigation. This investigation shall evaluate water table depth, faulting and seismicity, liquefaction potential, physical properties of subsurface soils (including soil expansion), seismic settlement, and potential for soil collapse and lateral spreading. The geotechnical investigation shall be prepared and certified by a California-licensed professional engineer or engineering geologist, and shall include earthwork, grading, design, and construction recommendations (e.g., soil treatment/conditioning or engineered fill replacement) to reduce the exposure of structures to seismic-related ground failure, including liquefaction hazards, and to other hazards resulting from soil properties. Measures that may be used to reduce impacts could include, but are not limited to:
>
> - *Liquefaction*: soil densification and compaction, excavation, and removal or recompaction of potentially liquefiable soils, design and installation of deep foundations or reinforced shallow foundations; and/or avoidance of highly unstable areas; and
> - *Expansive soil*: excavation of expansive soil, draining water away from expansive soils, ground-treatment processes.
>
> SCE shall provide documentation to the CPUC prior to the commencement of construction that demonstrates these measures have been incorporated into Project designs.
>
> **Significance after Mitigation:** Less than Significant.

---

iv. Landslides. (No Impact)

Land along the Project alignment has nearly flat topography with very gentle long slopes. There are no mapped landslides on or around the site. For these reasons, the potential for landslide

hazards along the Project alignment is very low, and there would be no impact to seismically-induced landslides.

---

b) Result in substantial soil erosion or the loss of topsoil.

Impact 4.7-3: The project could result in soil erosion or loss of topsoil. *Less than significant with mitigation* (Class II)

The soils underlying the Project sites and alignments range from low to high erosion susceptibility. Excavation and grading activities planned during construction would increase exposure of soil to erosive forces. Project activities that would expose soil include grading in the work areas associated with installation and removal of towers and poles, access roads, pull sites and substation construction, and the undergrounding of the distribution lines and segments of the Mira Loma-Jefferson subtransmission line and source lines. Intense rain or wind events in such areas would result in substantial soil erosion into adjacent waterways, and possibly propagation of small rills or gullies.

The Project would require a total of approximately 388 acres of soil disturbance distributed along the Project sites and alignments. Some elements of Project design would reduce the extent of potential soil erosion, such as grading construction staging yards such that water would continue to run in the natural drainage direction. Also, drainage would be designed to prevent ponding and erosive water flows. Given the large footprint of soil disturbance within the Project area, SCE would be required to obtain a SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order Number 2009-0009-DWQ (General Permit) (additional discussion of the SWPPP is included in Section 4.10, *Hydrology and Water Quality*).

Development and implementation of a SWPPP is necessary to obtain coverage under this permit. A SWPPP incorporates sediment control BMPs designed to limit the amount of soil eroded by water. Examples of typical construction BMPs include scheduling or limiting activities to certain times of the year; installing sediment barriers such as silt fence and fiber rolls along the perimeter of the construction area; maintaining equipment and vehicles used for construction; tracking controls, such as stabilizing entrances to the construction site, and developing and implementing a spill prevention and cleanup plan. SCE has included preparation of a SWPPP as part of the Project, and a qualified SWPPP practitioner would implement and monitor the best management practices identified in the SWPPP. In addition to measures required during construction, a SWPPP also requires implementation of post-construction BMPs that restore work sites to their original condition, minimizing long-term erosion problems and soil loss or removal (see Project Description Section 2.6.12, *Storm Water Pollution Prevention Plan*). The required components and BMPs commonly included in a SWPPP are described in greater detail in Section 4.10, *Hydrology and Water Quality*.

Soil disturbance during Project construction would also expose soil to wind erosion. The amount of material eroded by wind increases when soil is relatively dry, broken into smaller particles, and when wind velocity and turbulence are higher. Removal of vegetation can also increase the

susceptibility of soil to wind erosion. Substantial soil loss caused by ground disturbance during Project construction activities coupled with the moderate to high susceptibility of regional soils to wind erosion would result in a significant impact. However, during construction, the risk of soil erosion due to wind can be decreased by dividing the Project into smaller phases of clearing and grading, and by covering disturbed soils to minimize the surface area exposed to wind. SCE has committed to implementing Applicant Proposed Measure (APM) AIR-01, Fugitive Dust, whereby surfaces disturbed by construction activities would be covered or treated with a dust suppressant until completion of activities, and unpaved roads would be stabilized with water or a chemical stabilizer to control dust emissions. Because impacts may remain significant after application of APM AIR-01, implementation of Mitigation Measure 4.3-~~1~~2a would provide additional feasible fugitive dust controls beyond those required of APM AIR-01 (see Air Quality Sections 4.3.3 and 4.3.4 for descriptions of APM AIR-01 and Mitigation Measures 4.3-~~1~~2a, respectively). These measures would reduce the risk of soil loss due to wind erosion during Project construction activities to a less than significant impact.

After construction of the Project is completed, disturbed areas would be restored to pre-Project conditions through implementation of the BMP measures under the SWPPP. Routine access road maintenance for the Project may disturb the ground and loosen soils but these effects would be reduced through stormwater management features designed to control the flow of water such that erosion of the road surface would not occur (such as establishing berms and water bars, clearing ditches, and making drains to culverts). Maintenance of these stormwater control features would ensure that the potential soil erosion impacts would be less than significant.

Mitigation: Implement Mitigation Measure 4.3-~~1~~2a.

Significance after mitigation: Less than Significant.

---

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

Impact 4.7-4: Sections of the Project alignment would be located on soil that could become unstable as a result of the Project. *Less than significant with mitigation* (Class II)

Excavation and grading would occur at the Circle City Substation site, including excavation to remove unsuitable soils and to install foundations for the proposed structures. Excavation could also be required at the site if the City of Corona requires the Project to include a storm drain extension. A buried drain pipe through the eastern access corridor may also be installed within the Circle City Substation site. Excavations deeper than 4 to 5 feet below existing grade would encounter soils with high rock content, up to 50 percent by volume. Due to the rocky nature of these soils, there is a high likelihood that caving (the collapse of overlying soil due to the sudden creation of empty space in the soil profile, which can occur during rock removal) would occur during drilling, concrete placement, or other excavations deeper than 4 to 5 feet below grade. In accordance with Cal/OSHA regulations pertaining to temporary shoring in Title 8 of the

California Code of Regulations Division 1 Subchapter 4 Article 6, Excavations (1539-1543), these excavations would be supported by conventional shoring methods such as soldier piles and lagging, which would prevent the excavation sidewalls from becoming unstable during construction. Soil that becomes loose during the construction and maintenance phases of the Project would be adequately addressed through the specific recommendations provided by the geotechnical report prepared for the Circle City Substation site as well as the compaction and grading requirements of the CBC. These specific recommendations incorporate standard methods for reducing soil instability, including removing unsuitable site soils (the upper 4 feet of soil at the site), placement of structure shallow footings on at least 2 feet of compacted fill, and placement of fill on competent and compacted native materials. Fill material must be free of particles greater than 3 inches in the largest dimension and appropriately moisture-conditioned. Implementation of the recommendations of the geotechnical report and excavation safety requirements specified in the Cal/OSHA Construction Safety Orders, discussed above, would ensure that activities undertaken to construct the Circle City Substation would not result in unstable soils or geologic units. Therefore, at the Circle City Substation site this impact would be less than significant.

Existing unstable soil conditions along the Project alignments include windblown soils along the proposed Mira Loma-Jefferson subtransmission line alignment in Eastvale that could collapse when wetted, soils susceptible to liquefaction or sloughing in the presence of stable shallow groundwater, and soils that have previously subsided due to development-related changes in groundwater hydrology. Similar to the Circle City Substation site, caving could occur during excavation if subsurface soils encountered contain large cobbles or boulders within a finer matrix of material, which is common in desert alluvial soils. Project construction would require excavation of up to 50 feet below ground surface along the alignment for installation of poles and pole foundations, and from 5 to 10 feet below ground surface to install vaults and underground duct banks. Excavation would also occur during removal of existing structures. Holes left from removing existing structures would be filled, compacted, and smoothed to match the surrounding grade.

The Project could destabilize the windblown or liquefiable soils, and soils susceptible to caving, during construction and operation activities, a potentially significant impact. In accordance with Cal/OSHA regulations pertaining to temporary shoring in Title 8 of the California Code of Regulations Division 1 Subchapter 4 Article 6, Excavations (1539-1543), these excavations would be supported by conventional shoring methods (such as those identified above). In addition, towers or poles constructed in areas with shallow groundwater would use standard engineering techniques to stabilize sidewall soils during construction, such as temporary use of caissons and filling excavations with drilling mud slurry during concrete pouring. While compliance with Cal/OSHA orders and sidewall stabilization techniques would reduce the risk of destabilizing soils during construction, implementation of engineering measures selected based on site-specific soil information is required in order to reduce this impact to a less-than-significant level. Soil instability could also result during operation of the Project if soils supporting Project structures are not properly prepared. Implementation of Mitigation Measure 4.7-2 would reduce the extent to which the Project would exacerbate existing unstable soil conditions by evaluating site soil conditions and making site-specific earthwork and soil

conditioning recommendations. Compliance with existing regulations and implementation of Mitigation Measure 4.7-2 would reduce this impact to a less-than-significant level.

Mitigation: Implement Mitigation Measure 4.7-2.

Significance after Mitigation: Less than Significant.

---

d) Be located on expansive soil, creating substantial risks to life or property.

Impact 4.7-5: Portions of the Project would be located on expansive soil, creating risks to life and property. *Less than significant with mitigation* (Class II)

Portions of the Project are situated on or near soils with moderate to high expansion potential. These include the northern and central portions of the Mira Loma-Jefferson subtransmission line along Hellman Avenue and along River Road, and areas east and south of the proposed source line. The Project would result in replacing existing structures along the majority of the Mira Loma-Jefferson subtransmission line alignment, and would also include installation of new structures associated with the source lines as well as a short segment of the Mira Loma-Jefferson subtransmission line along Hellman Avenue, resulting in new risks associated with expansive soils. If Project components are improperly designed or installed, expansive soils could cause damage to poles and foundations over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Without adequate evaluation of site soil expansion properties, the impact of the Project to life and property could be significant if the integrity of the poles and/or foundations are compromised. For this reason, the Project would expose people and structures along the Project alignment to substantial risks of life and property where expansive soils exist, a potentially significant impact. While Facility design and construction would comply with CPUC design standards and would employ standard engineering and building practices common to construction projects throughout California, engineering measures selected based on site-specific soil information is required to reduce this impact to a less-than-significant level. Implementation of Mitigation Measure 4.7-2 would reduce this impact to less-than-significant levels by ensuring SCE would implement engineering recommendations related to expansive soil.

Mitigation: Implement Mitigation Measure 4.7-2.

Significance after Mitigation: Less than Significant.

---

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (No Impact)

The Project would include installation of a restroom at the Circle City Substation; however, the restroom would be connected to the sewer system in the City of Corona. The Project would not

include the use of septic tanks or alternative wastewater systems. For this reason, the Project would not pose an environmental or public health hazard by building septic tanks or alternative wastewater disposal systems in soils incapable or adequately supporting such systems (No Impact).

4.7.5 Alternatives

4.7.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, would not occur. Therefore, there would be no increased geology and soils impacts under the No Project Alternative.

4.7.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Alternative B would include construction and operation of the Mira Loma-Jefferson Subtransmission Line and associated facilities as proposed, but would not include construction and operation of the proposed Circle City Substation or its associated facilities. The impacts associated with geology and soils would be the same as those identified for the proposed facilities, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below, but reduced due to the smaller total area of ground disturbance.

Alternative B would be located within the same distances of active faults as the proposed facilities and would thus have similar less than significant impacts related to groundshaking (4.7-1; Class III) and no impact related to fault rupture. Similar to the Project, this alternative would not risk exacerbating the existing risk of strong seismic ground shaking or directly or indirectly cause potential substantial adverse effects involving strong seismic ground shaking. As this alternative would reduce the number of new aboveground structures built relative to the proposed substation and its source lines, the exposure of life and property to substantial adverse effects during seismic activity or due to the physical properties of subsurface soils would be reduced. Although a smaller land surface area would be disturbed by this alternative compared to that of the proposed Project, Mitigation Measure 4.7-2 would still be required to be implemented for these impacts to be reduced to less than significant (Impacts 4.7-2 through 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 differs from the proposed Project in that it includes a half-mile-long underground conduit installation within Hellman Avenue from its intersection with American Heroes Park to its intersection with Pine Avenue/Schleisman Road. The same soil types affected by construction activities of the proposed Project would be affected by this alternative. Under Alternative C1, construction, operation, and maintenance-related impacts associated with geology and soils would be similar to those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Alternative C1 would be located within the same distances of active faults as the proposed segment of the Mira Loma-Jefferson subtransmission line that it would replace and would thus have similar less-than-significant impacts related to groundshaking (4.7-1; Class III) and no impact related to fault rupture. Similar to the Project, this alternative would not risk exacerbating the existing risk of strong seismic ground shaking or directly or indirectly cause potential substantial adverse effects involving strong seismic ground shaking. As this alternative would reduce the number of new aboveground structures built relative to the proposed Project, the exposure of life and property to substantial adverse effects (such as pole foundation failure) during seismic activity or due to the physical properties of subsurface soils would be reduced. A larger surface area associated with undergrounding the subtransmission line would be disturbed by this alternative compared with the proposed Project. Mitigation Measure 4.7-2 would be required to be implemented for these impacts to be reduced to less than significant (Impacts 4.7-2 through 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 differs from the proposed Mira Loma-Jefferson subtransmission line in that it consists of both underground and overhead line segments extending south along Archibald Avenue, crossing the Santa Ana River, continuing south to the intersection of Corydon Avenue and River Road, instead of the proposed overhead line continuing within SCE ROW and along Hellman Road and River Road. For purposes of this analysis it is assumed that between Archibald Avenue (the northwest bank of the Santa Ana River) and Bluff Street (the southeast bank of the Santa Ana River), SCE would replace the existing towers in the Santa Ana River corridor. Under Alternative C2, construction, operation, and maintenance-related impacts associated with geology and soils would be similar to those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

No faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act, or any other Holocene-active faults would be traversed by this alternative. Existing poles would be replaced with new poles built according to the current California Building Code and CPUC General Order 95. For these reasons, the ground shaking risk to people or structures associated with this alternative would be less than significant (4.7-1; Class III) and there would be no impact related to fault rupture. This alternative alignment crosses similar high liquefaction hazard areas as the proposed Project, and thus would similarly expose people and structures to risk of damage due to seismically-induced

liquefaction, a significant impact. Implementation of Mitigation Measure 4.7-2 would reduce this impact to less than significant by ensuring that appropriate engineering recommendations are applied to reduce the risk of substantial adverse liquefaction effects (Impact 4.7-2; Class II). This impact would be somewhat reduced compared to the proposed Project's impacts because this alternative would include 2.7 fewer miles of overhead line that could be compromised during a seismic event. Land along this alternative alignment has nearly flat topography with very gentle long slopes and there are no mapped landslides on or around the alignment. For these reasons, the potential for landslide hazards along the alternative alignment is very low, and there would be no impact associated with seismically-induced landslides.

This alternative would traverse additional soil types that would not be affected by the proposed Mira Loma-Jefferson subtransmission line, most of which have moderate shrink-swell potential and moderate erosion hazard (NRCS, 2016).[4] While most of the soils that would be disturbed by this alternative display moderate erosion hazard like the soil that would be disturbed along the proposed Mira Loma-Jefferson subtransmission line, this alternative would include more extensive land disturbance within soils of high erosion hazard (map units Ce and ReC2). However, similar to the proposed Project, implementation of BMPs that would be required as part of the construction SWPPP for this alternative and Mitigation Measure 4.7-2 would ensure that this impact would be less than significant (Impact 4.7-3; Class II). This alternative could result in new seismic hazard risks with the installation of new poles, resulting in new risks to life and property associated with unstable and expansive soils. Implementation of Mitigation Measure 4.7-2 would reduce these impacts to less-than-significant levels by ensuring SCE would implement engineering recommendations related to unstable or expansive soil (Impacts 4.7-4 and 4.7-5; Class II).

Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would include construction of up to three subtransmission-level battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project. Under Alternative C3, construction, operation, and maintenance-related impacts associated with geology and soils would be similar to or reduced compared with those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Although the subtransmission line that would be required for the 42 MW battery storage facility and substation would traverse within 0.6 mile of the Elsinore Fault Zone, Glen Ivy Section, no faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act, or any other Holocene-active faults would be traversed by this alternative. In addition, existing subtransmission line and telecommunication line poles would be replaced with new poles built according to modern, up-to-

[4] The additional soils traversed by the Subtransmission Line Alternative 2 alignment are Chino silt loam drained (Ce), Delhi fine sand 2 to 15 percent slopes wind eroded (DaD2), Pachappa fine sandy loam 0 to 2 percent slopes (PaA), and Waukena fine sandy loam saline-alkali (Wb).

date building codes. For these reasons, the ground shaking risk to people or structures associated with this alternative would be less than significant (4.7-1; Class III). The battery storage and substation facilities would be constructed in areas of very low liquefaction hazard, and the 40 MW facility would be constructed near the proposed Circle City Substation, an area with low liquefaction potential due to deep groundwater and dense soils. This alternative would require a smaller number of poles compared to the project, but like the proposed Project would result in construction of the subtransmission line and telecommunication line connections in areas mapped as being susceptible to liquefaction, resulting in new seismic hazard risks. Implementation of Mitigation Measure 4.7-2 would reduce this impact to less than significant by ensuring that appropriate engineering recommendations are implemented to reduce the risk of substantial adverse liquefaction effects (Impact 4.7-2; Class II).

This alternative would traverse additional soil types that would not be affected by the proposed Mira Loma-Jefferson subtransmission line, which have low shrink-swell potential and low to moderate erosion hazard (NRCS, 2018).[5] The total area of soil disturbance associated with this alternative would likely be smaller than the proposed Project subtransmission line and focused within soils of low to moderate erosion hazard, and would avoid disturbing soils of high erosion hazard by not resulting in the construction of the Mira Loma-Jefferson 66 kV subtransmission line. Similar to the proposed Project, implementation of BMPs required as part of the construction SWPPP for this alternative and air quality Mitigation Measure 4.3-1a would ensure that soil erosion impacts of this alternative would be less than significant (Impact 4.7-3; Class II). This alternative could exacerbate existing unstable soil conditions during excavation for the battery and substation facilities, resulting in new risks to life and property associated with unstable and expansive soils. Implementation of Mitigation Measure 4.7-2 would reduce these impacts to less-than-significant levels by ensuring SCE would implement engineering recommendations related to unstable or expansive soil (Impacts 4.7-4 and 4.7-5; Class II).

Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

4.7.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would construct a battery storage facility, distribution connections, and ~~a~~ two telecommunication connection~~s~~ instead of the proposed Circle City Substation and associated source lines components of the Project. The battery storage facility would be constructed

[5] The additional soils traversed by Alternative C3 alignment are Cortina gravelly coarse sandy loam, 2 to 8 percent slopes (CnC) and Perkins gravelly loam, 2 to 5 percent slopes (PgB).

immediately adjacent to the proposed Circle City Substation site. The new telecommunication line connections similarly would be installed along the same alignment as the proposed Databank Source Lines and the same alignment as the proposed Circle City Substation site to the existing Corona Substation described for Alternative E4. Under Alternative D1, construction, operation, and maintenance-related impacts associated with geology and soils would be the same as the proposed Project at and around the Circle City Substation site as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below. However, overall ground disturbance associated with this alternative would be greatly reduced compared to the proposed Project as the substation and associated source line components of the proposed Project would not be built.

No faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act, or any other Holocene-active faults would be traversed by this alternative. For this reason, ground shaking risk to people or structures associated with this alternative would be less than significant (Impact 4.7-1; Class III) and there would be no impact related to fault rupture. The battery storage facility would be constructed near the proposed Circle City Substation, an area with low liquefaction potential due to deep groundwater and dense soils. Poles of the Mira Loma-Jefferson line would be installed within similar high liquefaction hazard areas as the proposed Project, and thus would similarly expose people and structures to risk of damage due to seismically-induced liquefaction, a potentially significant impact. Implementation of Mitigation Measure 4.7-2 would reduce this impact to less than significant by ensuring that appropriate engineering recommendations are implemented to reduce the risk of substantial adverse liquefaction effects (Impact 4.7-2; Class II). The site topography is relatively level and the absence of nearby slopes precludes any slope stability hazards; the potential for landslide hazards associated with this alternative is very low, and there would be no impact associated with seismically-induced landslides.

The total area of soil disturbance associated with the battery storage facility under Alternative D1 would be substantially smaller than the proposed Circle City Substation and source lines. The total area of soil disturbance associated with the Mira Loma-Jefferson subtransmission line would remain the same as the proposed Project. Similar to the proposed Project, implementation of BMPs required as part of the construction SWPPP for this alternative and air quality Mitigation Measure 4.3-1a would ensure that soil erosion impacts of this alternative would be less than significant (Impact 4.7-3; Class II). This alternative could exacerbate existing unstable and expansive soil conditions during excavation for the battery storage facility, resulting in new risks to life and property associated with unstable and expansive soils. Implementation of Mitigation Measure 4.7-2 would reduce this impact to a less-than-significant level by ensuring SCE would implement engineering recommendations related to unstable or expansive soil (Impacts 4.7-4 and 4.7-5; Class II).

Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would differ from the proposed Project by locating the Circle City Substation at a parcel just east of the proposed substation site. The same soil types affected by construction

activities of the proposed Project would be affected by this alternative. Under Alternative D2, construction, operation, and maintenance-related impacts to geology and soils that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

No faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act, or any other Holocene-active faults traverse the alternative substation site. In addition, the new poles and subtransmission infrastructure at the site would be built according to modern, up-to-date building codes. For these reasons, ground shaking risk-related impacts to people or structures associated with this alternative would be less than significant (Impact 4.7-1; Class III) and there would be no impact related to fault rupture. A geotechnical investigation has not been completed for the alternative substation site. Due to its close proximity to the proposed substation site, the alternative substation site would likely have similar soil characteristics to the proposed substation site, and accordingly may be at low risk of substantial adverse effects involving liquefaction, differential settlement, and lateral spreading during earthquakes; however, without a site-specific geotechnical evaluation this alternative could result in new seismic hazard risks, a potentially significant impact. Implementation of Mitigation Measure 4.7-2 for the alternative substation site would reduce impacts to less than significant by ensuring that appropriate engineering recommendations are implemented to reduce the risk of substantial adverse liquefaction effects (Impact 4.7-2; Class II).

The total area of soil disturbance associated with Alternative D2 would be the same as for the proposed Circle City Substation. Similar to the proposed Project, implementation of BMPs required as part of the construction SWPPP and air quality Mitigation Measure 4.3-1a would ensure that soil erosion impacts of this alternative would be less than significant (Impact 4.7-3; Class II). This alternative could also exacerbate existing unstable and expansive soil conditions during excavation resulting in similar risks to life and property associated with unstable and expansive soils as the proposed Project. Implementation of Mitigation Measure 4.7-2 would reduce this impact to a less-than-significant level by ensuring SCE would implement engineering recommendations related to unstable or expansive soil (Impacts 4.7-4 and 4.7-5; Class II).

Land at this alternative site has nearly flat topography with very gentle long slopes and there are no mapped landslides on or in the vicinity of the site. For these reasons, the potential for landslide hazards at the site is very low, and there would be no impact related to seismically-induced landslides. Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would differ from the proposed Pedley Source Lines by traveling along Quarry Street, parallel to and south of the proposed Project route on 3rd Street. All access road sizes and locations would be the same as described for the proposed Project. The same soil types affected by construction activities of the proposed Project would be affected by this alternative. Under Alternative E1, construction, operation, and maintenance-related impacts associated with geology

and soils would be similar to those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Alternative E1 would be located within similar distances of active faults as the proposed Pedley Source Lines and would thus have similar less-than-significant impacts related to groundshaking (Impact 4.7-1; Class III) and no impact related to fault rupture. Given that Alternative E1 would be constructed within the same lithology and similar topography as the proposed Pedley Source Lines, with implementation of Mitigation Measure 4.7-2 this alternative would result in the same less-than-significant impacts associated with liquefaction hazard as the Project (Impact 4.7-2; Class II). Because this alternative would be constructed in the same soil types as would be disturbed by the proposed Pedley Source Lines, soil erosion, stability, and expansion hazard impacts would be less than significant for the reasons identified in Section 4.7.4, *Impacts and Mitigation Measures* (Impacts 4.7-3 through 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would differ from the proposed Project by installing an underground line segment along the Pedley Source Lines route from just west of Interstate 15 to the proposed Circle City Substation site. The same soil types affected by construction activities of the proposed Project would be affected by this alternative. Under Alternative E2, construction, operation, and maintenance-related impacts associated with geology and soils would be similar to those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Alternative E2 would be located at the same distances of active faults as the proposed Pedley Source Lines and would thus have similar less-than-significant impacts related to groundshaking (Impact 4.7-1; Class III) and no impact related to fault rupture. As this alternative would reduce the number of new aboveground structures built relative to the proposed Project, the exposure of life and property to substantial adverse effects (such as pole foundation failure) during seismic activity would be reduced. However, this potential adverse effect would remain for portions of the Mira Loma-Jefferson subtransmission line that would be located in areas of high or very high liquefaction susceptibility; with implementation of Mitigation Measure 4.7-2 this impact would be less than significant (Impact 4.7-2; Class II). While a larger surface area would be disturbed by this alternative compared with the proposed Project, the ground disturbing activity would be required to implement the same BMPs and mitigation as the proposed Project and this impact would remain less than significant (Impacts 4.7-3 through 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative E3: Southern 66 kV Source Lines Alignment

This alternative route would replace the proposed Databank Source Lines. It would consist of LWS poles and TSPs and would begin with a connection to an existing subtransmission line at the

intersection of Old Temescal Road and Compton Avenue, then it would continue north along Compton Avenue to Pico Street, where it would continue north behind several commercial properties to a location where it would cross over I-15. East of I-15 Alternative E3 would proceed in a northeasterly direction across vacant land to Sherborn Street, where the line would continue northeasterly across the north side of a small body of water to All American Way, where it would enter the southern end of the substation site. Under Alternative E3, construction, operation, and maintenance-related impacts associated with geology and soils would be similar to those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Alternative E3 would be located within similar distances of active faults as the proposed Databank Source Lines and would thus have similar less-than-significant impacts related to groundshaking (Impact 4.7-1; Class III) and no impact related to fault rupture. The length of above-ground source line constructed in an area of high or very high liquefaction susceptibility in this alternative would be approximately the same as the length constructed for the proposed source line; for this reason, with implementation of Mitigation Measure 4.7-2 the seismic liquefaction hazard impact of this alternative on life and property would be less than significant (Impact 4.7-2; Class II). Due to the topography and history of landslides in the area, Alternative E3 would have the same effect on the risk of adverse effects on life and property associated with landslides. Because this alternative would require less total ground disturbance than the proposed Databank Source Lines, due to the lack of underground facilities as part of the source line in this alternative, the amount of soil exposed to erosion during construction could be incrementally lower; however, similar to the proposed Project, the impact of Alternative E3 on the loss of soil would be less than significant with implementation of BMPs from the required construction SWPPP and Mitigation Measure 4.7-2 (Impact 4.7-3; Class II). While the number of soil units with moderate or high erosion hazard that occur within 0.25 mile of the alternative source line is higher under this alternative, the route of the proposed Databank Source Lines would result in more extensive ground disturbance within soils characterized by moderate to high erosion hazard.

The alternative source line would result in a greater number of above-ground structures built in soils with moderate to high expansion potential compared to the proposed source line, increasing the amount of construction in potentially expansive soil. While the impact of risk of life and property resulting from the construction of facilities on unstable or expansive soils would be somewhat greater for this alternative than for the proposed Project, with implementation of Mitigation Measure 4.7-2 these impacts would be reduced to less than significant (Impacts 4.7-4 and 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would include the same facilities as the proposed Project, without the Pedley Source Lines and with an additional underground telecommunications line between the proposed Circle City and the existing Corona substations. The same soil types affected by construction activities of the proposed Project would be affected by this alternative. Under Alternative E4, construction,

operation, and maintenance-related impacts associated with geology and soils would be similar to or slightly reduced compared with those that would result under the proposed Project, as discussed in Section 4.7.4, *Impacts and Mitigation Measures*, and summarized below.

Alternative E4 would be located within the same distances of active faults as the proposed facilities and would thus have similar less-than-significant impacts related to groundshaking (Impact 4.7-1; Class III) and no impact related to fault rupture. As this alternative would reduce the number of new aboveground structures built relative to the proposed Project, the exposure of life and property to substantial adverse effects during seismic activity would be reduced. The liquefaction risk impact would be reduced to less than significant with implementation of Mitigation Measure 4.7-2 (Impact 4.7-2; Class II). Less land surface area would be disturbed by this alternative compared with the proposed Project, but the same BMPs and mitigation would be required for soil-related impacts to be reduced to less than significant (Impacts 4.7-3 through 4.7-5; Class II). Similar to the proposed Project, this alternative would not require the use of septic tanks or alternative wastewater disposal systems, and thus would have no impact on soils resulting from disposal of wastewater.

References – Geology and Soils

Association of Bay Area Governments (ABAG), 2010, *The San Francisco Bay Area on Shaky Ground: Documentation for 2003 Mapping.* Updated in 2010.

Bryant, W.A, and E.W. Hart, 2007. *Fault Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*. Special Publication 42, Interim Revision.

California Department of Water Resources (DWR), 2016. Groundwater elevation data for wells in the vicinity of Eastvale, Chino, Norco, and Corona, California. Groundwater Information Center Interactive Map Application. Available online https://gis.water.ca.gov/app/gicima/ accessed June 1, 2016.

California Geological Survey (CGS), 2002. *California Geomorphic Provinces*. Note 36.

CGS, 2003. State of California Earthquake Fault Zones. Corona North Quadrangle. Effective May 1.

CGS, 2008. Probabilistic Seismic Hazard Assessment Ground Motion Interpolator. Available online http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html, accessed July 8, 2016.

Cao, T., W.A. Bryant, B. Rowshandel, D. Branum, and C.J. Wills, 2003. The Revised 2002 California Probabilistic Seismic Hazard Maps. June.

City of Chino, 2010. *Envision Chino: City of Chino General Plan 2025*, *Safety Element.* July.

City of Corona, 2004a. *City of Corona General Plan Technical Background Report*. March.

City of Corona, 2004b. *City of Corona General Plan.* Adopted March 17.

City of Eastvale, 2012. *City of Eastvale General Plan*. Adopted June 13, 2012.

County of Riverside, 2015a. *Riverside County General Plan, Appendix H: Safety Element Technical Background Report*. Effective as of December 15, 2015.

County of Riverside, 2015b. *Riverside County General Plan*. Effective as of December 15, 2015.

County of San Bernardino, 2009. San Bernardino County Land Use Plan General Plan Geologic Hazard Overlays.

County of San Bernardino, 2014. *County of San Bernardino 2007 General Plan*. Amended April 24, 2014. Field, E.H., and 2014 Working Group on California Earthquake Probabilities, 2015, UCERF3: A new earthquake forecast for California's complex fault system: U.S. Geological Survey 2015–3009, 6 p., http://dx.doi.org/10.3133/fs20153009.

Morton, Douglas M, and C. H. Gray, Jr., 2002. *Geologic Map of the Corona North 7.5' Quadrangle, Riverside and San Bernardino Counties, California.* USGS Open-File Report 02-22.

Natural Resources Conservation Service (NRCS), 2016. Soil data for Western Riverside Area, California, accessed using Web Soil Survey, http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, on September 22, 2016.

Natural Resources Conservation Service (NRCS), 2018. Soil data for Western Riverside Area, California, accessed using Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, on April 12, 2018.

Southern California Edison (SCE), 2015. *Proponent's Environmental Assessment Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project*. December 4, 2015.

TDBU Geotechnical Engineering Group, 2012. *Geotechnical Investigation Report Circle City 66 kV Substation Leeson Lane and Magnolia Avenue, Corona, California*. July 20, 2012.

USGS and CGS, 2006. Fold and Fault Database. Available online http://earthquake.usgs.gov/hazards/qfaults/, accessed June 1, 2016.

Wald et al., 1999. *Relationships between Peak Ground Acceleration, Peak Ground Velocity, and Modified Mercalli Intensity in California*. Earthquake Spectra 15(3), 557-564.

This page intentionally left blank

4.8 Greenhouse Gas Emissions

This section evaluates whether the Project, as well as the alternatives, would result in impacts associated with greenhouse gas (GHG) emissions during construction, operation, and maintenance activities.

4.8.1 Environmental Setting

4.8.1.1 Climate Change

According to the U.S. Environmental Protection Agency (USEPA), the term "climate change" refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (over several decades or longer). There is scientific consensus that climate change is occurring and that human activity contributes in some measure (perhaps substantially) to that change. Gases that trap heat in the atmosphere are often called GHGs. Emissions of GHGs, if not sufficiently curtailed, are likely to contribute further to increases in global temperatures. The potential effects of climate change in California include sea level rise and reductions in snowpack, as well as an increased number of extreme-heat days per year, high ozone days, large forest fires, and drought years (CARB, 2014). Globally, climate change could affect numerous environmental resources through potential, though uncertain, changes in future air temperatures and precipitation patterns. According to the International Panel on Climate Change (IPCC), the observed and/or projected effects of climate change vary regionally, but include the following direct effects (IPCC, 2014):

- Changing precipitation and snow melt patterns;
- Negative effect on crop yield;
- Increased heat waves, drought, flood, wildfires, and storm events;
- Reduced renewable water resources in most dry subtropical regions; and
- Ocean acidification damage to marine ecosystems.

In addition, many secondary effects are projected to result from climate change, including a global rise in sea level, ocean acidification, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. The possible outcomes and feedback mechanisms involved are not fully understood, and much research remains to be done; however, over the long term, the potential exists for substantial environmental, social, and economic consequences.

4.8.1.2 Greenhouse Gas Emissions

GHG emissions that result from human activities primarily include carbon dioxide (CO_2), with much smaller amounts of nitrous oxide (N_2O), methane (CH_4, often from unburned natural gas), sulfur hexafluoride (SF_6) from high-voltage power equipment, and hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) from refrigeration/chiller equipment. Because these GHGs have different warming potentials (i.e., the amount of heat trapped in the atmosphere by a certain mass of the gas), and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2-equivalent (CO_2e) emissions. For example, while SF_6

represents a small fraction of the total annual GHGs emitted worldwide, this gas is very potent, with 23,900 times the global warming potential of CO_2. Therefore, an emission of 1 metric ton of SF_6 would be reported as 23,900 metric tons CO_2e. The global warming potential of CH_4 and N_2O are 25 times and 298 times that of CO_2, respectively (CARB, 2016a). The principal GHGs resulting from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide

CO_2 is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, as well as industrially relevant chemical reactions such as those associated with manufacturing cement. CO_2 is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.

Methane

Like CO_2, CH_4 is emitted from both natural and anthropogenic sources. Key anthropogenic sources of CH_4 include gaseous emissions from landfills, releases associated with mining and materials extraction industries (in particular coal mining), and fugitive releases associated with the extraction and transport of natural gas and crude oil. CH_4 emissions also result from livestock and agricultural practices. Small quantities of CH_4 are released during fossil fuel combustion.

Nitrous Oxide

N_2O is also emitted from both natural and anthropogenic sources. Important anthropogenic sources include industrial activities, agricultural activities (primarily the application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases

HFCs, PFCs, and SF_6 are synthetic gases emitted from a variety of industrial processes, and they contribute substantially more to the greenhouse effect on a pound for pound basis than the GHGs described previously. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in small quantities, but because of their potency they are sometimes referred to as “high global warming potential gases.” Fluorinated gases in the form of SF_6 would be emitted by circuit breakers that would be associated with the proposed Project.

4.8.1.3 Greenhouse Gas Sources

Anthropogenic GHG emissions in the United States are derived mostly from the combustion of fossil fuels for transportation and power production. Energy-related CO_2 emissions resulting from fossil fuel exploration and use account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of CO_2 emissions from burning fossil fuels. More than half of the energy-related emissions come from large stationary sources, such as power plants; approximately one-third derive from transportation; and a majority of the remaining sources include: industrial processes, agriculture, commercial, and residential (USEPA, 2016a).

Statewide emissions of GHG from relevant source categories for 2009 through 2015 are summarized in **Table 4.8-1**. Specific contributions from individual air basins, such as the South Coast Air Basin (Air Basin), which encompasses the Project area, are included in the emissions inventory but are not itemized by air basin. In 2015, California produced 440.4 million gross metric tons of CO_2e emissions. Transportation was the source of 39 percent of the state's GHG emissions, followed by industrial at 23 percent, electricity generation at 19 percent, commercial and residential sources at 11 percent, and agriculture and forestry comprised the remaining 8 percent (CARB, 2017a).

TABLE 4.8-1
CALIFORNIA GHG EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2009	2010	2011	2012	2013	2014	2015	
Electricity Generation (In State)	53.51	46.91	41.36	51.18	49.60	51.81	50.21	11.4%
Electricity Generation (Imports)	48.13	43.67	46.94	44.15	40.24	36.56	33.88	7.7%
Transportation	171.45	168.11	164.70	164.38	163.05	164.89	169.38	38.5%
Industrial	97.31	101.12	101.08	101.46	104.27	104.69	102.97	23.4%
Commercial	18.64	20.09	20.73	21.11	21.64	21.37	22.17	5.0%
Residential	30.21	31.26	32.03	30.04	31.19	26.26	26.93	6.1%
Agriculture and Forestry	33.83	34.64	35.28	36.42	34.93	36.03	34.65	7.9%
Not Specified (Solvents & Chemicals)	0.26	0.27	0.25	0.24	0.18	0.24	0.17	<0.1%
Total Gross Emissions	**453.34**	**446.06**	**442.38**	**448.97**	**445.08**	**441.85**	**440.36**	**100.00%**

SOURCE: CARB, 2017a.

4.8.1.4 Regulatory Setting

Federal

Clean Air Act

On April 2, 2007, in *Massachusetts v. USEPA* (549 US 497), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the USEPA must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making such decisions, the USEPA is required to follow the language of Section 202(a) of the Clean Air Act, which obligates it to prescribe (and from time to time revise) standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy and other organizations.

On April 17, 2009, the USEPA Administrator signed proposed "endangerment" and "cause or contribute" findings for GHGs under Section 202(a) of the Clean Air Act. The USEPA found that six GHGs, taken in combination, endanger both the public health and the public welfare of current and future generations. The USEPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse effect as air

pollution that endangers public health and welfare under Clean Air Act Section 202(a). Pursuant to 40 CFR Part 52*, Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, USEPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements apply to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year (USEPA, 2016b). The proposed Project would not trigger PSD or Title V permitting under this regulation because it would generate less than 100,000 tons of CO_2e emissions per year.

U.S. Supreme Court Decision in Utility Air Regulatory Group v. USEPA

On June 23, 2014, the U.S. Supreme Court held that USEPA may not treat GHG emissions as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT). In accordance with the Supreme Court decision, on April 10, 2015, the D.C. Circuit issued an amended judgment in *Coalition for Responsible Regulation, Inc. v. U.S. Environmental Protection Agency*, which vacated the PSD and Title V regulations under review in that case to the extent that they require a stationary source to obtain a PSD or Title V permit solely because the source emits or has the potential to emit GHGs above the applicable major source thresholds. The D.C. Circuit also directed USEPA to consider whether any further revisions to its regulations are appropriate, and if so, to undertake to make such revisions. In response to the Supreme Court decision and the D.C. Circuit's amended judgment, the USEPA intends to conduct future rulemaking action to make appropriate revisions to the PSD and operating permit rules (USEPA, 2016b).

40 CFR Part 98. Use of Electric Transmission and Distribution Equipment

Pursuant to federal regulations (i.e., 40 CFR Part 98, Subpart DD) operators of certain electrical facilities, such as SF_6-containing circuit breakers, are required to report SF_6 emissions to the USEPA (USEPA, 2016c). SF_6-containing circuit breakers associated with the Project would be subject to reporting under this regulation.

State

A variety of statewide rules and regulations mandate the quantification and, if emissions exceed established thresholds, the reduction of GHGs. CEQA requires Lead Agencies to evaluate project-related GHG emissions and the potential for projects to contribute to climate change and to provide appropriate mitigation in cases where the Lead Agency determines that a project would result in a significant addition of GHGs to the atmosphere.

Executive Order S-3-05

In June 2006, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which established the following statewide emission-reduction targets through the year 2050:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

This executive order does not contain any requirements that directly pertain to the proposed project; however, future actions taken by the State of California to implement these goals may affect the proposed project, depending on the specific implementation measures that are developed.

Assembly Bill 32

California Assembly Bill (AB) 32, *the Global Warming Solutions Act of 2006*, required the California Air Resources Board (CARB) to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels. AB 32 required CARB to adopt regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program. Under AB 32, CARB also was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which must be achieved by 2020. CARB established this limit in December 2007 at 427 million metric tons of CO_2e. This is approximately 30 percent below forecasted "business-as-usual" emissions of 596 million metric tons of CO_2e in 2020, and about 10 percent below average annual GHG emissions during the period of 2002 through 2004 (CARB, 2009). In the interest of achieving the maximum technologically feasible and cost-effective GHG emission reductions, AB 32 permits the use of market-based compliance mechanisms and requires CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

Climate Change Scoping Plan (AB 32 Scoping Plan)

In December 2008, CARB approved the AB 32 Scoping Plan outlining the State's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan estimates a reduction of 174 million metric tons CO_2e (about 191 million tons) from the transportation, energy, agriculture, forestry, and high climate-change-potential sectors, and proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. The Scoping Plan must be updated every 5 years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. Appendices C and E of the adopted 2008 AB 32 Scoping Plan include a list of 39 recommended action measures to reduce GHG emissions (CARB, 2009). Of these measures, only one is directly relevant to the Project. Measure H-6, High GWP Gases was designed to reduce emissions of SF_6 within the electric utility sector and at particle accelerators by requiring the use of best achievable control technology for the detection and repair of leaks, and the recycling of SF_6.

The AB 32 Scoping Plan must be updated every five years to evaluate the adopted mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. CARB released its first Scoping Plan Update in May 2014 (CARB, 2014). There are no recommended actions identified in the Scoping Plan Update that are directly applicable to the proposed Project.

California Renewable Energy Programs

In 2002, California initially established its Renewables Portfolio Standard (RPS), with the goal of increasing the percentage of renewable energy in the State's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and California Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity

goal by 2020, consistent with the AB 32 Scoping Plan. In April 2011, Senate Bill 2 of the First Extraordinary Session (SB X1-2) was signed into law. SB X1-2 expressly applies the new 33 percent RPS by December 31, 2020, to all retail sellers of electricity and establishes renewable energy standards for interim years prior to 2020. Senate Bill 350 (SB 350) of 2015 (Chapter 547, Statutes of 2015) increased the RPS to 50 percent by the year 2030.

Mandatory Reporting Requirements

Pursuant to California Code of Regulations Title 17, Sections 95100 through 95158, operations of large industrial stationary combustion and process emissions sources that emit 10,000 metric tons CO_2e or more per calendar year are required to report and verify their GHG emissions to CARB. As indicated in **Table 4.8-3** under Impact 4.8-1, below, the total amortized GHG emissions for the proposed Project would be 116 metric tons per year, which is below the AB 32 reporting threshold; therefore, the proposed Project would not be subject to the AB 32 mandatory reporting requirements.

Market-Based "Cap-and-Trade" Compliance Mechanism

AB 32 allows the use of market-based compliance mechanisms to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 also requires CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts. In response, CARB adopted a cap-and-trade program that covers major sources of GHG emissions such as refineries and power plants. The program includes an annual emissions cap that declines over time. CARB's cap-and-trade program applies to facilities that would emit 25,000 metric tons or more of CO_2e per year. Since the total amortized GHG emissions for the proposed Project are estimated at 116 metric tons per year, the cap-and-trade program would not apply to the proposed Project (see Section 4.8.4 for a discussion and breakdown of the construction-related and operational GHG emissions associated with the proposed Project).

Senate Bill 97

In 2007, the California State Legislature passed SB 97, which required amendment of the CEQA Guidelines to incorporate analysis of, and mitigation for, GHG emissions from projects subject to CEQA. The amendments took effect March 18, 2010. The amendments added Section 15064.4 to the CEQA Guidelines, specifically addressing the potential significance of GHG emissions. Section 15064.4 calls for a "good faith effort" to "describe, calculate or estimate" GHG emissions and indicates that the analysis of the significance of any GHG impacts should include consideration of the extent to which the project would:

- Increase or reduce GHG emissions;
- Exceed a locally applicable threshold of significance; or
- Comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."

The CEQA Guidelines also state that a project may be found to have a less-than-significant impact related to GHG emissions if it complies with an adopted plan that includes specific

measures to sufficiently reduce GHG emissions (14 Cal. Code Regs. §15064(h)(3)). Importantly, however, the CEQA Guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

Executive Order B-30-15 and SB 32

In April 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will make it possible for California to reach its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05. Executive Order B-30-15 also specifically addresses the need for climate adaptation and directs state government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the state climate adaption strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change;
- Factor climate change into state agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions (Office of the Governor, 2015).

Executive Order B-30-15 required CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. Subsequently, SB 32, which codifies the Executive Order's 2030 emissions reduction target, was approved by the Governor on September 8, 2016. SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030, the target established by Executive Order B-30-15. CARB recently adopted the 2017 Scoping Plan for achieving this goal, which takes into account the key programs associated with implementation of the AB 32 Scoping Plan--such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation--and builds upon, in particular, existing programs related to the Cap-and-Trade Regulation; the Low Carbon Fuel Standard; much cleaner cars, trucks, and freight movement; power generation for the State using cleaner renewable energy; and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State's energy needs. The 2017 Scoping Plan also addresses, for the first time, GHG emissions from natural and working lands, including the agriculture and forestry sectors (CARB, 2017b).

SB 350

SB 350 of 2015 (Chapter 547, Statutes of 2015) revises the state's RPS Program by requiring utilities to procure at least 50 percent of the retail electricity from renewable sources by 2030. The law also requires the California Energy Commission (CEC) to establish annual energy efficiency standards designed double the electricity and natural gas savings for existing buildings by 2030.

Regulation for Reducing SF_6 Emissions from Gas Insulated Switchgear

The purpose of this regulation (17 Cal. Code Regs. §95350 et seq.) is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Owners of such switchgear

must not exceed maximum allowable annual emissions rates, which are reduced each year until 2020, after which annual emissions must not exceed 1.0 percent of the total SF_6 capacity of all of the owner's active gas-insulated switchgear equipment. As defined by the regulation, the annual emissions rate equals the gas-insulated switchgear owner's total annual SF_6 emissions from all active gas-insulated switchgear equipment divided by the average annual SF_6 nameplate capacity of all active gas-insulated switchgear equipment. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF_6, and maintain records of these for at least 3 years. Additionally, by June 1st each year, owners also must submit an annual report to CARB's Executive Officer for emissions that occurred during the previous calendar year (CARB, 2016b).

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order No. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project. Regardless, there are no local adopted policies or goals for reducing GHG emissions that would be directly applicable to the proposed Project.

Climate Action Plans

Several local jurisdictions in the Project area, including the County of Riverside, City of Corona, City of Chino, and City of Ontario have adopted climate action plans that establish goals and policies to reduce GHG emissions. Riverside County and City of Corona have goals to reduce emissions back to 1990 levels by the year 2020. The City of Chino's goal is to reduce its community GHG emissions to a level that is 15 percent below its 2008 emissions level by 2020; and the City of Ontario's goal is to reduce GHG emissions to 15 percent below 1990 levels by 2020, 37 percent below 1990 levels by 2030, 80 percent below 1990 levels by 2050. In order to reach the reduction goals, the plans include reduction measures such as encouraging energy efficiency and renewable energy in buildings, transit oriented planning, water conservation, and increased waste diversion (County of Riverside, 2015; City of Corona, 2012; City of Chino, 2013; and City of Ontario, 2016). The climate action plan measures are not directly applicable to the Project.

4.8.2 Significance Criteria

Based on CEQA *Guidelines* §15064.4 and §15064.7(c), as well as Appendix G, the project would result in significant greenhouse gas emissions effects on the environment if it would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.8.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce project impacts associated with GHG emissions.

4.8.4 Impacts and Mitigation Measures

4.8.4.1 Approach to Analysis

Climate change impacts are global, and therefore inherently cumulative in nature; no typical single project would result in emissions of a magnitude that would be significant on a project basis. As such, the assessment of significance in this EIR is based on a determination of whether the GHG emissions from the proposed Project represent a cumulatively considerable contribution to climate change.

The Project would result in GHG emissions from both short-term construction and long-term operations and maintenance activities. CEQA allows for significance criteria established by the applicable air pollution control district to be used to assess the impact of a project related to GHG emissions, at the discretion of the CEQA Lead Agency.

The South Coast Air Quality Management District (SCAQMD) has adopted an interim significance threshold of 10,000 metric tons CO_2e per year for operation of stationary and industrial sector projects (SCAQMD, 2008). This threshold was derived from emissions data from the four largest air districts in California and is based on the Executive Order S-3-05 GHG emissions reductions goal of 80 percent below 1990 levels by 2050, which is roughly equivalent to 84 percent below current levels by 2050. This emissions reduction goal goes beyond the AB 32 and Executive Order B-30-15/SB 32 emissions reduction goals established for 2020 and 2030, respectively. The emissions data suggests that stationary sources that emit greater than 10,000 metric tons CO_2e per year and are responsible for 90 percent of GHG emissions. This significance threshold represents a capture rate of 90 percent of all new and modified stationary source-related projects. A 90 percent emissions capture rate means 90 percent of the total emissions from all new or modified stationary source projects would be subject to analysis in an environmental impact report prepared pursuant to CEQA, including analysis of feasible alternatives and imposition of feasible mitigation measures (SCAQMD, 2008). Since Executive Order B-3-05 GHG emissions reductions goal of lowering GHG emissions to 80 percent below 1990 levels by 2050 is roughly equivalent to reducing emissions by 81 percent below current levels, the California Public Utilities Commission (CPUC) has determined that the GHG significance threshold of 10,000 metric tons per year for stationary source projects is based on substantial evidence and, therefore, has determined that it is appropriate for use in this analysis.

As noted above, this GHG significance threshold is intended for long-term operational GHG emissions associated with stationary sources, but SCAQMD has not adopted or recommended GHG significance thresholds for construction emissions. Therefore, the CPUC has elected to use an approach to the determination of significance of GHG construction emissions based on guidance developed by the SCAQMD. For construction related GHGs, SCAQMD recommends that total emissions from construction be amortized over 30 years representing the life of the

project and added to operational emissions and then compared to the operation-based significance threshold (SCAQMD, 2008). Similar to the SCAQMD's recommended approach for construction emissions, this analysis amortizes Project construction emissions over a 30-year project lifetime, adds them to the operational emissions, and then compares the combined emissions to the significance threshold of 10,000 metric tons CO_2e per year.

There are no applicable Riverside County, City of Chino, City of Corona, City of Eastvale, City of Norco, or City of Ontario plans, policies, regulations, or climate action plan measures that would be directly applicable to the Project. However, the Project's potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions is assessed by examining any potential conflicts with the GHG reduction goals set forth in Executive Order S-3-05, Executive Order B-30-15, and AB 32, including the potential for the Project to conflict with the recommended actions identified by CARB in its Climate Change Scoping Plan and/or any associated adopted regulations.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact 4.8-1: The Project would generate GHG emissions. *Less than significant* (Class III)

Construction Emissions

Construction of the Project would generate GHG emissions over a construction period of approximately 18 months. Exhaust emissions would result from construction equipment and machinery as well as from vehicular traffic generated by construction activities. As part of the CPUC's Permit to Construct application process, SCE provided construction-related GHG emissions estimates for the construction activities that would be associated with the Project (see Appendix D, *Air Quality and Greenhouse Gas Emissions Calculations*). CPUC's consultant, Environmental Science Associates (ESA), independently reviewed the emission estimates. SCE estimated Project emissions using the California Emissions Estimator Model (CalEEMod) version 2013.2.2 originally developed by the SCAQMD. This version of CalEEMod calculates the construction equipment exhaust emissions based on CARB's OFFROAD2011equipment emission and load factors. See Appendix D for all emission factors and assumptions used to estimate GHG emissions that would be associated with construction of the Project.

The short-term construction emissions estimates provided by SCE do not include indirect emissions estimates associated with the proposed use of ~~58~~ 107 acre-feet of water for dust suppression, cleanup, crew member consumption, and hand washing ~~(SCE, 2015; p. 4.17-10)~~.Therefore, ESA supplemented SCE's emissions estimates to include construction-related indirect short-term electricity usage-related GHG emissions associated with proposed water use using emission and use factors established by the CEC and TCR (CEC, 2005; TCR, 2016). See Appendix D for all emission factors and assumptions used to estimate GHG emissions that would be associated with construction of the proposed Project.

Table 4.8-2, *Project Construction GHG Emissions,* presents the total estimated GHG construction emissions that would be associated with the Project generated by off-road construction equipment, on-road vehicles, and water use. Approximately ~~2,711~~ 2,759 metric tons of CO_2e would be generated during the Project's 18-month construction phase.

TABLE 4.8-2
PROJECT CONSTRUCTION GHG EMISSIONS

Emissions Source	CO_2e metric tons
Off-road Construction Equipment	1,522
On-road Vehicles	1,132
Water Use Indirect Emissions	~~57~~ 105
Total	**~~2,711~~ 2,759**

SOURCE: SCE, 2015; 2016; see Appendix D for all emissions estimates.

Operation and Maintenance Emissions

Operation and maintenance of the Project would not result in new stationary combustion emission sources of GHGs nor would it increase GHG exhaust emissions from existing stationary sources. Mobile GHG source emissions-related activities associated with the operation of the Project would occur as a result of annual inspections for the subtransmission line, source lines, and telecommunication facilities components and weekly inspections at the substation. Operation and maintenance emissions were estimated by SCE and independently reviewed by ESA (see Appendix D for all assumptions used to estimate the Project operation and maintenance emissions).

In addition, GHG emissions associated with operation of the Project would result from the installation of SF_6-containing circuit breakers at the proposed Circle City Substation as well as the existing Mira Loma Substation. Annual SF_6 emissions for the Project were estimated based on a circuit breaker manufacturer's guaranteed leak rate of 0.5 percent of the total SF_6 capacity, and that a total of 11 new circuit breakers would be installed that would have a combined SF_6 capacity of 440 pounds. Ten new SF_6 circuit breakers would be installed at the proposed Circle City Substation and one would be installed at the existing Mira Loma Substation. Using the manufacturer's referenced leak rate of 0.5 percent, annual SF_6 emissions that would be associated with the Project would be equivalent to approximately 24 metric tons CO_2e per year.

Total Amortized Annual Emissions

As indicated in Table 4.8-2, *Project Construction GHG Emissions,* total GHG construction emissions would be approximately ~~2,711~~ 2,759 metric tons CO_2e. These emissions amortized over a 30-year period equal approximately ~~90~~ 92 metric tons per year. As presented in **Table 4.8-3**, *Project Amortized Annual Emissions*, adding ~~90~~ 92 metric tons of CO_2e to the operational emissions of 26 metric tons CO_2e per year equals a total Project GHG emissions rate of approximately ~~116~~ 118 metric tons CO_2e per year, which would be substantially less than the significance threshold of 10,000 metric tons CO_2e per year.

TABLE 4.8-3
PROJECT AMORTIZED ANNUAL EMISSIONS

Emissions Source	CO_2e metric tons/year
Construction emissions: total amortized (30 year period)	~~90~~ 92
Maintenance and operations	2
SF_6 Circuit Breaker Emissions	24
Total	**~~116~~ 118**
Significance threshold	10,000
Significant impact?	No
SOURCE: SCE, 2015; 2016; see Appendix D for all emissions estimates.	

Therefore, the Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. Impacts would be less than significant.

Mitigation: None required.

---

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (No Impact)

Construction, operation, and maintenance of the Project would result in increased GHG emissions compared to baseline conditions; however, the emissions would not exceed regional or quantitative thresholds developed to comply with AB 32 and the AB 32 Climate Change Scoping Plan. As discussed in *Approach to Analysis* above, the SCAQMD GHG emissions significance threshold used in Impact 4.8-1 goes beyond the AB 32 and Executive Order B-30-15/SB 32 emissions reduction goals established for 2020 and 2030, respectively, and is based on the Executive Order S-3-05 GHG emissions reductions goal of 80 percent below 1990 levels by 2050. Since amortized GHG emissions that would be associated with the Project would not exceed the significance threshold (see Table 4.8-3, above), the Project would not conflict with GHG reduction goals set forth in Executive Order S-3-05, Executive Order B-30-15/SB 32, or AB 32, including the proposed programs identified by CARB in its AB 32 and SB 32 Climate Change Scoping Plans.

Regarding management of Project-related SF_6, SCE has developed and would implement SF_6 gas management guidelines as described in SCE's document entitled *An Asset Management Approach for EPA/CARB SF6 Regulations* (SCE, 2012). This document includes an overview of the tools and methods that SCE utilizes to comply with both USEPA's Voluntary SF_6 Emission Reduction Partnership program and CARB's SF_6 regulations. This guideline document identifies storage methods, disposal method alternatives, and record-keeping requirements. Inventories of SF_6 that would be associated with the Project would be documented and annually reported to USEPA and CARB. Therefore, the Project would be consistent with the intent of AB32 Scoping Plan Measure H-6: High Global Warming Potential Gas Reductions from Stationary Sources, and CARB's associated legislation. Because the Project would be consistent (and would not conflict)

with these plans, policies, and regulations, it would cause no impact related to this significance criterion (No Impact).

4.8.5 Alternatives

4.8.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts that would result under the Project, as discussed in Section 4.8.5, *Impacts and Mitigation Measures*, would not occur. Therefore, no impact related to GHG emissions would occur under the No Project Alternative (No Impact).

4.8.5.2 Subtransmission Service Objective Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be constructed and the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed. Therefore, total emissions under Alternative B would be less than shown for the Project in Table 4.8-3, *Project Amortized Annual Emissions*. Therefore, Alternative B would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would include a half-mile-long underground conduit installation within Hellman Avenue. Underground subtransmission line conduit and vault construction activities tend to be more labor intensive and generate more GHG emissions per given distance than installation of overhead subtransmission line facilities; therefore, construction activities associated with Alternative C1 would generate emissions that would be greater than those that would be generated by the proposed Project. Based on the emissions calculations for the Project, it is estimated that the alternative would increase the construction schedule by approximately 2 weeks of additional underground line installation work, which would result in approximately 2 additional metric tons of amortized GHG emissions. Therefore, GHG emissions would be slightly greater overall under this alternative than the proposed Project, but the alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the

environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment from the SCE ROW down to River Road would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 mile underground) and would replace approximately 5.4 miles of overhead line that would be associated with the proposed Mira Loma-Jefferson subtransmission line. As mentioned above, underground subtransmission line conduit and vault construction activities generate more GHG emissions per a given distance than installation of overhead subtransmission line facilities; however, this alternative would be approximately 1.5 miles shorter than the proposed subtransmission line. Therefore, the construction activities associated with Alternative C2 would generate GHG emissions that would be similar to those of the proposed Project. The alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Under Alternative C3, up to three subtransmission-level (66 kV) battery storage and substation facilities, associated subtransmission lines and telecommunication lines, and upgrades to existing Jefferson Substation, would be constructed and operated instead of the Mira Loma-Jefferson 66 kV line component of the Project.

Given the similarities of the infrastructure and site areas that would be required for the subtransmission-level battery storage and substation facilities under Alternative C3 and the proposed Circle City Substation, it is assumed that the total construction emissions associated with each of the three subtransmission-level battery storage and substation facilities would be similar to the total emissions that would be generated due to construction of the proposed Circle City Substation, and the subtransmission line connections to the 50 MW and 40 MW facilities would generate emissions similar to the emissions that would be generated by the proposed source lines, scaled to the length of the alternative lines, and that the subtransmission line connection to the 42 MW facility would generate emissions similar to those that would be generated by the proposed Mira Loma-Jefferson subtransmission line, scaled to the length of the alternative line. It is also assumed that operations of each of the three battery storage and substation facilities would result in the same amount of SF_6 released from circuit breakers into the environment as the proposed Circle City Substation; therefore, this alternative would result in three times the amount of SF_6 released into the atmosphere compared to the proposed Project. It is assumed that the electricity required to power the air conditioning units would be obtained internally and that each individual unit would be directly connected to the energy storage system's discharge and would not require additional electrical input; therefore, there would be no indirect GHG emissions associated with the air conditioners.

Using these assumptions, and the assumption that construction of the telecommunication lines would result in about half of the emissions as construction of the 66 kV connection lines, it is

estimated that the total annual amortized emissions under Alternative C3, would be approximately 296 ~~292~~ metric tons CO_2e per year (see Appendix D for calculations), which would be approximately two and a half times more emissions then generated under the proposed Project, but still substantially less than the significance threshold of 10,000 metric tons.The alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

4.8.5.3 Distribution Service Objective Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Under Alternative D1, a distribution-level (12 kV) battery storage facility would be constructed and operated instead of the Circle City Substation and associated sources lines components of the Project. The electricity required to power the air conditioning units would be obtained internally and each individual unit would be directly connected to the energy storage system's discharge and would not require additional electrical input; therefore, there would be no indirect GHG emissions associated with operation of the air conditioners. Given the reduced scope of the infrastructure and site area that would be required for the distribution-level battery storage facility under Alternative D1 compared to the proposed Circle City Substation, the total emissions under Alternative D1 would be less than shown for the Project in Table 4.8-3, *Project Amortized Annual Emissions*. Therefore, Alternative D1 would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-3; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative D2: 66/12 kV Substation Site Alternative

Construction and operation of Alternative D2 would be similar in scope to that of the proposed Circle City Substation. The GHG-related impact that would be associated with this alternative would essentially be the same as identified for the proposed Project; the alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Source Lines segment that it would replace. Underground subtransmission line conduit and vault construction activities generate more GHG emissions per a given distance than installation of overhead subtransmission line facilities; therefore, construction activities associated with Alternative E1 would generate

emissions that would be greater than those that would be generated associated with the proposed Project. Based on the emissions calculations for the Project, it is estimated that the alternative would increase the construction schedule by 1 additional week of underground line installation work, which would result in less than 1 additional metric ton of amortized GHG emissions. Therefore, construction emissions would be slightly greater overall under this alternative than the proposed Project, but the alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III) and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines; however, it includes an underground line segment from just west of Interstate 15 (I-15) to the proposed Circle City Substation site. This alternative would include approximately 1.5 miles of additional underground line compared to the proposed Pedley Source Lines. As mentioned above, underground subtransmission line conduit and vault construction activities generate more GHG emissions per a given distance than installation of overhead subtransmission line facilities; therefore, construction activities associated with Alternative E2 would generate emissions that would be greater than those that would be generated associated with the proposed Project. Based on the emissions calculations for the Project, it is estimated that the alternative would increase the construction schedule by an additional 4 to 7 weeks of underground line installation work, which would result in between 4 to 10 additional metric tons of amortized GHG emissions. Therefore, construction emissions would be slightly greater overall under this alternative than the proposed Project, but the alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative E3: Southern Route 66 kV Source Lines Alignment

Alternative E3 would include 1.3 miles of overhead lines in a double circuit configuration, which would be 0.1 mile longer than the proposed Databank Source Lines. However, unlike the proposed Databank Source Lines, which would include nearly 0.5 mile of underground subtransmission line installation, this alternative would include no underground line installation activities. Because underground subtransmission line conduit and vault construction activities generate more GHG emissions per a given distance than installation of overhead subtransmission line facilities, construction activities associated with Alternative E3 would generate less emissions than would be generated associated with the proposed Project. It is estimated that the alternative would decrease the construction schedule by approximately 3 weeks due to absence of underground line installation, which would result in fewer metric tons of amortized GHG emissions compared to the construction of the proposed Databank Source Lines. Therefore, construction emissions would be slightly less overall under this alternative than the proposed Project and the alternative would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment (Impact 4.8-1; Class III), and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would result in only the proposed Databank Source Lines and the Circle City Substation to Corona Substation telecommunications line being connected to Circle City Substation and the Pedley Source Lines would not be constructed. Construction activities associated with the Alternative E4 would generate less emissions than would be generated by the proposed Project. Therefore, construction emissions would be slightly less overall under this alternative than the proposed Project and the GHG emissions impact would be less than significant (Impact 4.8-1; Class III) and there would be no impact relative to a conflict with an applicable plan, policy, or regulation.

References – Greenhouse Gas Emissions

California Air Resources Board (CARB), 2009. *Climate Change Scoping Plan: A Framework for Change*, December 2008, amended version included errata and Board requested modifications posted May 11, 2009.

CARB, 2014. First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB 32, the California Global Warming Solutions Act of 2006.

CARB, 2016a. Global Warming Potentials webpage, last reviewed June 17, 2016. Available online at: http://www.arb.ca.gov/cc/inventory/background/gwp.htm. Accessed December 5, 2016.

CARB, 2016b. Final Regulation Order to Adopt new Subarticle 3.1, Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear sections 95350 to 95359, title 17, California Code of Regulations. Available online at: http://www.arb.ca.gov/cc/sf6elec/finalregulation.pdf, accessed December 5, 2016.

CARB, 2017a. California Greenhouse Gas Inventory for 2000–2015 – by Sector and Activity, last updated June 6, 2017. Available online at: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_sector_sum_2000-15.pdf. Accessed June 8, 2017.

CARB, 2017b. California's 2017 Climate Change Scoping Plan, a strategy for achieving California's 2030 greenhouse gas target, November 2017.

California Energy Commission (CEC), 2005. *California's Water – Energy Relationship Prepared in Support of the 2005 Integrated Energy Policy Report Proceeding*, Final Staff Report, November 2005 (CEC-700-2005-011-SF). Table C-6, page 118.

City of Corona, 2012. City of Corona Climate Action Plan, January 2012.

City of Chino, 2013. City of Chino Climate Action Plan, November 19, 2013.

County of Riverside, 2015. County of Riverside Climate Action Plan, December 2015.

Intergovernmental Panel on Climate Change (IPCC), 2014. *Climate Change 2014, Impacts, Adaptation, and Vulnerability*. Summary for Policymakers, 2014.

Office of Governor Edmund G. Brown Jr., 2015. News Release – Governor Brown Established Most Ambitious Greenhouse Gas Reduction Target in North American, April 29, 2015.

South Coast Air Quality Management District (SCAQMD) 2008. Board Meeting Agenda Item No. 31, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans, December 5, 2008. Available online at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed on June 22, 2016.

Southern California Edison (SCE), 2012. An Asset Management Approach for EPA/CARB SF6 Regulations, Robert Preston Lloyd, P.E., Senior Technical Specialist -Substation Compliance & Asset Management - Southern California Edison. April 2012.

SCE, 2015. Proponent's Environmental Assessment, Circle City Substation and Mira Loma-Jefferson 66kV Subtransmission Line Project, December 4, 2015.

SCE, 2016. Response to CPUC Data Request 6, Question 7, electronic file attachments. Provided to CPUC September 27, 2016.

The Climate Registry (TCR), 2016. 2016 Climate Registry Default Emissions Factors. April 19, 2016.

U.S. Environmental Protection Agency (USEPA), 2016a. Sources of Greenhouse Gas Emissions. Available online at: http://www.epa.gov/climatechange/ghgemissions/sources.html. Accessed June 28, 2016.

USEPA, 2016b. Clean Air Act Permitting for Greenhouse Gas Emissions webpage. Available online at: https://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases. Accessed June 28, 2016.

USEPA, 2016c. Greenhouse Gas Reporting Program, Subpart DD – Use of Electric Transmission and Distribution Equipment, Rule Information. Available online at: https://www.epa.gov/ghgreporting/subpart-dd-use-electric-transmission-and-distribution-equipment, last updated November 30, 2016.

4.9 Hazards and Hazardous Materials

This section evaluates the hazardous materials and public health impacts of the Project and alternatives. Hazards-related impacts addressed in this section include the use of hazardous materials during construction, hazardous materials in soil and groundwater, hazards related to aviation, emergency preparedness, wildfires, and shock hazards.

As used in the EIR, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, materials, including wastes, may be considered hazardous if they are specifically listed by statute as such or if they exhibit one of the following four characteristics: toxicity (causes adverse human health effects), ignitability (has the ability to burn), corrosively (causes severe burns or damage to materials), or reactivity (can react violently, explode, or generate vapors). The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (California Health and Safety Code §25501(n)).

In some cases, past industrial or commercial activities may have resulted in spills or leaks of hazardous materials, resulting in soil and/or groundwater contamination. Excavated soils having concentrations of certain contaminants, such as lead, gasoline, or industrial solvents that are higher than regulatory acceptable thresholds must be managed, treated, transported, and/or disposed of as a hazardous waste. The California Code of Regulations (CCR), Title 22, Sections 66261.10 through 66261.24, contains technical descriptions of characteristics that would cause a soil to be designated a hazardous waste.

Federal and state laws require that hazardous materials be specially managed. California regulations are consistent with federal regulations and in most cases, are more stringent. Federal and state regulations also govern the management of potentially hazardous building materials, such as asbestos-containing materials, lead-based paint, and polychlorinated biphenyls (PCBs) during demolition activities.

4.9.1 Setting

This section summarizes information on the historical land uses of the Project site and alignments, including hazardous materials in soil and groundwater from existing contaminated sites, and existing conditions related to schools, airports, emergency preparedness, wildfires, and induced currents.

4.9.1.1 Hazardous Materials in Soil and Groundwater

To evaluate the potential presence of hazardous materials in soil and groundwater, a regulatory database search of sites in the vicinity of the Project was conducted to identify the documented use, storage, generation, and/or releases of hazardous materials and/or petroleum products in the area. In addition, active contaminated sites that are currently undergoing monitoring and remediation were identified. A search of the State Water Resources Control Board (SWRCB) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor databases

revealed that there are no known active/open hazardous materials sites at any of the Project sites; however, there are a number of listed (active and closed) sites shown near the Project area (CEH&S, 2015; SWRCB, 2016). The Mira Loma Substation is listed as a Leaking Underground Storage Tank (LUST) site and maintains a "completed-case closed" status as of June 11, 2001. Based on the records, gasoline leaked from the underground tank and affected soil (SWRCB, 2016.

The Project crosses developed communities with residential, commercial, and industrial uses, and agricultural uses. Riverside County contains four federal Superfund sites and 24 state response sites. Of these, five listed state response sites are also located in either the City of Corona or the City of Norco, within 10 miles of the Project. In addition, San Bernardino County contains five federal Superfund sites and 38 state response sites. Of these, four state response sites are located within 10 miles of the Project in the City of Ontario. Based on a review of the SWRCB and DTSC databases, and internet searches of federal, state, and local hazardous materials databases listed in **Table 4.9-1**, there are two active hazardous materials cases within 0.25 mile of the Project.

The sites listed within the vicinity of the Project are provided in **Table 4.9-2**. These sites may have been subjected (or are suspected of being subjected) to a release of hazardous materials or petroleum products that has resulted in contamination of soil and/or groundwater. The table identifies two open cases within 0.25 mile of the Project site and alignments.

4.9.1.2 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (CEH&S Environmental Engineering, 2015) was prepared for the parcel on which the proposed Circle City Substation would be constructed, and parcel to the immediate northwest of the proposed substation site. The Phase I Environmental Site Assessment consisted of site reconnaissance, historical, and regulatory record searches; interviews with owners and site personnel; and a review of aerial photographs, topographic maps, and ownership records. No "Recognized Environmental Conditions" (RECs) sites were identified at the proposed Circle City Substation site; however, one REC site was identified in the parcel immediately northwest of the proposed Circle City Substation site.

According to available regulatory documentation, a historical underground storage tank (UST) containing unleaded gasoline was on the northern parcel adjacent to the southern portion of Leeson Lane. The current owner has confirmed that a 500-gallon UST was removed from the site in 1986. In addition, this documentation revealed that no benzene, toluene, or xylenes were detected in soil samples collected beneath the tank. An addendum to the Phase I Environmental Site Assessment was completed on February 19, 2015, to address the UST removal. Based on confirmation sampling and analysis conducted in the footprint of the former UST, the UST is not considered a potential REC (CEH&S, 2015).

TABLE 4.9-1
STANDARD ENVIRONMENTAL RECORDS

Database	Search Distance from Project (Mile)
State Water Resources Control Board GeoTracker	
Leaking Underground Storage Tank (LUST) Cleanup Sites	0.50
Cleanup Program Sites	0.50
Military Cleanup Sites	0.50
Department of Toxic Substances Control (DTSC) Cleanup Sites	0.50
Waste Discharge Requirements (WDR) Sites	0.50
Permitted Underground Storage Tanks	0.25
DTSC Hazardous Waste Sites	0.50
Land Disposal Sites	0.50
Oil/Gas Sites	0.25
Federal	
National Priorities List (NPL) (including delisted) and NPL Liens	1.00
Comprehensive Environmental Response, Compensation and Liability Act Information System, (CERCLIS) (including No Further Remedial Action Planned)	0.50
Resource Conservation and Recovery Act (RCRA) Corrective Actions (CORRACTS) List	1.00
RCRA non-CORRACTS Treatment, Storage and Disposal (TSDF)	0.50
RCRA Large Quantity Generators (LQG), Small Quantity Generators (SQG), and CESQ	0.25
Engineering and Institutional Controls	0.50
Emergency Response Notification System (ERNS) List	Project Site
State and Tribal	
Response	1.00
EnviroStor	1.00
Solid Waste Facilities (SWF) and/or Landfills (LF) lists	
LUST	0.50
Local Brownfields Sites	0.50
Cortese (including Historic Cortese)	0.50
List of Active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO)	0.25

SOURCE: CEH&S Environmental Engineering, 2015; SWRCB, 2016, DTSC, 2016.

TABLE 4.9-2
HAZARDOUS MATERIALS SITES IN THE VICINITY OF THE PROJECT

Site Name	Distance to Project Alignment[a]	Regulatory List[b]	Notes
Downs Energy	300 feet from the Databank Source Lines	LUST Cleanup Site	LUST – Gasoline affected soil. Case Status: Open – Assessment & Interim Remedial Action
Downs Oil	150 feet from the Databank Source Lines	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed – Case Closed as of 11/29/1999
Brine FAC, Johns Manville Corona	700 from the Databank Source Lines	Land Disposal Site	Cleanup Status: Completed Case Closed as of 4/4/2003
Corona Landfill – Closed	North of Magnolia Avenue Adjacent to the Databank Source Lines	Land Disposal Site	Cleanup Status: Open – Closed/with monitoring as of 11/1/2014
Shell Magnolia Corona	150 feet from the Databank Source Lines	LUST Cleanup Site	LUST – Gasoline affected aquifer Cleanup Status: Completed Case Closed as of 7/9/1994
Camco Construction	250 feet from the Databank Source Lines	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 7/9/1994
Ed's Auto Wrecking	On the south of Magnolia Avenue, adjacent the Databank Source Lines	LUST Cleanup Site	LUST – Diesel and gasoline affected soil Cleanup Status: Completed Case Closed as of 11/4/1993
Edison/Corona #1 Manufactured Gas Plant	At Corona Substation	DTSC Voluntary Cleanup Site	Active as of 2010 Soil contaminated with arsenic and polynuclear aromatic hydrocarbons
CT Corona	450 feet from the Pedley Source Lines; 800 feet from the Databank Source Lines	Cleanup Program Site	Lead, other Petroleum, and total petroleum hydrocarbons affected soil Cleanup Status: Completed Case Closed as of 2/18/2014
Thakar Aluminum	1,275 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed Case Closed as of 9/14/1998
Six Pac Industries	115 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed Case Closed as of 1/8/1993
ARCO #1259	1,250 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 3/9/2004
R & S Service	1,050 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 2/8/2005
Sunkist Growers, Inc.	100 feet west of E. Grand Avenue adjacent to the Pedley Source Lines	LUST Cleanup Site	Polychlorinated biphenyls affected soil Cleanup Status: Completed Case Closed as of 12/30/1985
Orange Heights Orange Association	1,000 feet from the Pedley Source Lines	LUST Cleanup Site	Trichloroethylene affected soil Cleanup Status: Completed Case Closed as of 12/14/1992
IMCO Waste Disposal Area (Former)	300 feet from the Pedley Source Lines	DTSC Voluntary Cleanup	Metals and polychlorinated biphenyls affected soil Cleanup Status: Certified O&M- Land use restrictions only as of 6/21/2010

TABLE 4.9-2 (CONTINUED)
HAZARDOUS MATERIALS SITES IN THE VICINITY OF THE PROJECT

Site Name	Distance to Project Alignment[a]	Regulatory List[b]	Notes
San Clemente Business Park	150 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Diesel and gasoline affected soil Cleanup Status: Completed Case Closed as of 8/19/1994
Corona Nissan	700 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 1/18/1991
Lyon/Copley Association	1,350 feet from the Pedley Source Lines	Cleanup Program Site	Petroleum fuels and oils Cleanup Status: Completed Case Closed as of 7/20/2010
Econo Lube N Tune	650 feet from the Pedley Source Lines	LUST Cleanup Site	LUST – Waste oil affected groundwater Cleanup Status: Completed Case Closed as of 6/25/1996
MTA Truck School	320 feet from the Corona Substation	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed Case Closed as of 2/4/1994
River Road Car Wash	0.25 mile from the Mira Loma-Jefferson Line	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 4/26/2004
Corona MFG Company	150 feet from the Mira Loma-Jefferson Line	Cleanup Program Site	Inactive as of January 1, 1965 Media affected is not specified in site files.
Dallape Dairy	East of River Road, adjacent to the Mira Loma-Jefferson Line	LUST Cleanup Site	Cleanup Status: Completed Case Closed as of 7/10/1995
Pietermsma Dairy (Former)	650 feet from the Mira Loma-Jefferson Line	DTSC Voluntary Cleanup	Chlordane affected soil Certified as of 6/20/2010
Vander Laan Dairy	830 feet from the Mira Loma-Jefferson Line	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed Case Closed as of 9/1/1999
Flamingo Dairy	740 feet from the Mira Loma-Jefferson Line	LUST Cleanup Site	LUST – Diesel affected soil Cleanup Status: Completed Case Closed as of 4/7/1999
R.T. Lee Construction	200 feet from the Mira Loma-Jefferson Line	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 8/26/1992
Shakel Property	350 feet from the Mira Loma-Jefferson Line	Cleanup Program Site	Cleanup Status: Completed Case Closed as of 5/5/2006

NOTES:
[a] The distances shown represent the approximate distance to closest portion of the Project.
[b] GeoTracker and EnviroStor webpages identify regulatory lists maintained by the California State Water Resources Board and the California Department of Toxic Substances Control, respectively.

SOURCE: CEH&S Environmental Engineering, 2015; SWRCB, 2016, DTSC, 2016.

4.9.1.3 Wood Treatment Products

The Project would include removal of 54 wood poles along the Archibald-Chino line. The wood poles could be treated with chemicals such as pentachlorophenol, creosote, and chromated copper arsenate. Typically, these chemicals are applied to utility wood poles during manufacturing to protect wood from rotting due to insects and microbial agents. These chemicals, for certain quantities, are considered to be hazardous materials, which require specific handling and disposal protocol prescribed by state and federal hazardous materials regulations (see *Regulatory Setting*, below). Additionally, the base of the treated wood poles may be wrapped with copper naphthenate paper, also known as CuNap wrap.[1] This paper has been accepted as a wood preservative for several decades and has been employed in non-pressure treatments of wood and other products. Copper naphthenate is a common preservative and its use has increased recently in response to environmental concerns associated with other wood treatment products.

4.9.1.4 Wildfire Hazards

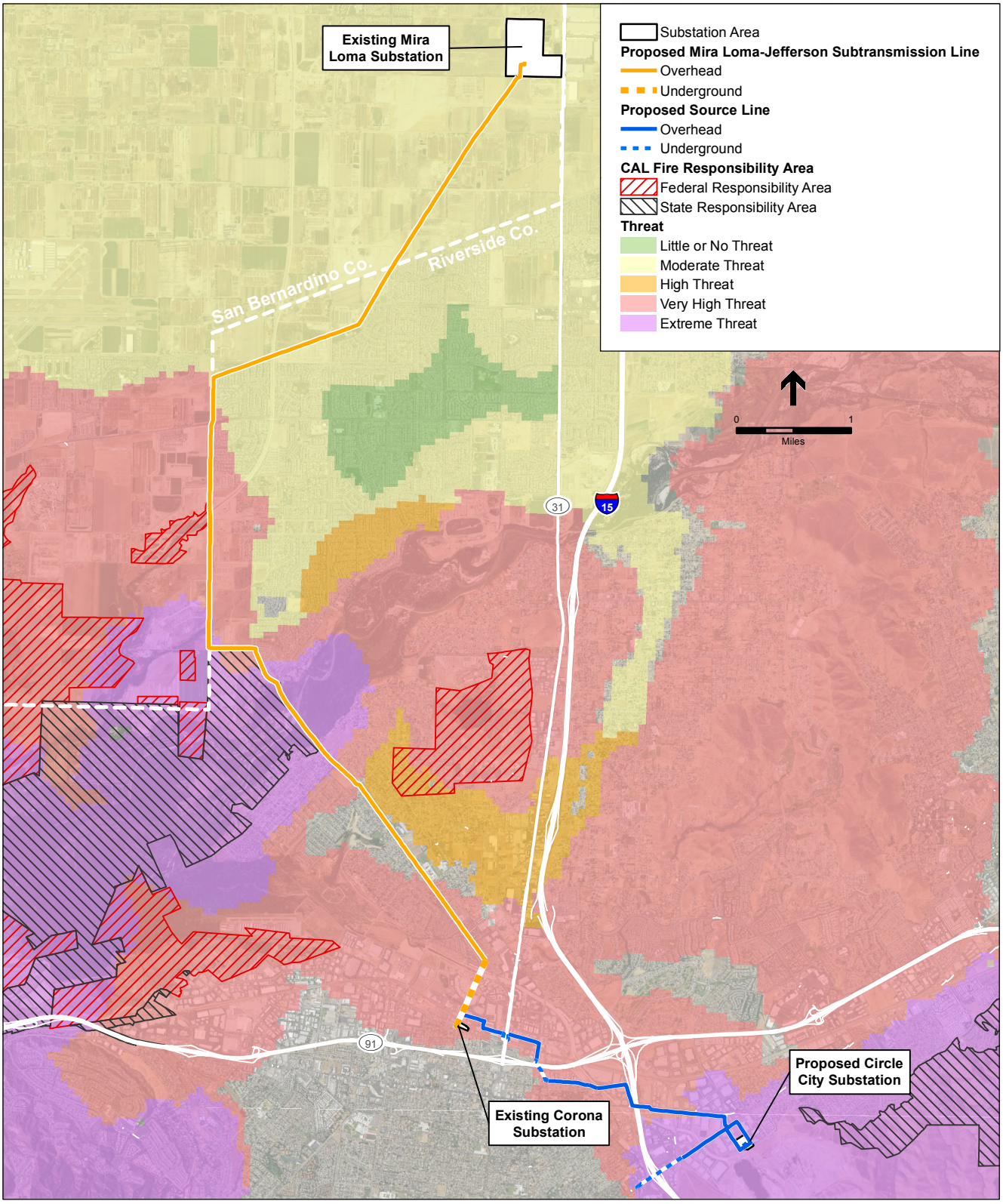
The California Department of Forestry and Fire Protection (CAL FIRE) has developed a statewide rating of wildland fire threat based on a combination of potential fire behavior (related to available fuels) and expected fire frequency (see **Figure 4.9-1**, *Wildland Fire Threats in the Project Area*). Most of the proposed Mira Loma-Jefferson subtransmission line alignment and source line alignments are within or immediately adjacent to areas with moderate, high, and very high fire threat classifications. There is an area of extreme fire threat classification along the proposed Mira Loma-Jefferson subtransmission line alignment in the vicinity of the Santa Ana River due to the presence of dense vegetation. Additionally, the Circle City Substation site and portions of the proposed source lines area within an area of extreme fire threat (CAL FIRE, 2006).

4.9.1.5 Electric and Magnetic Fields

Electromagnetic fields (EMFs) are associated with electromagnetic radiation, which is energy in the form of photons. Radiation energy spreads as it travels and has many natural and human-made sources. The electromagnetic spectrum, the scientific name given to radiation energy, includes light, radio waves, and x-rays, among other energy forms. Electric and magnetic fields are common throughout nature and are produced by all living organisms. Concern over EMF exposure, however, generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems.

Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation added to natural background sources are low.

[1] CuNap wrap is a self-contained delivery system for copper napthenate, the internationally recognized wood preservative that fights the damaging effects of moisture, decay, and insect attack.



SOURCE: SCE, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.9-1

Wildland Fire Threats in the Project Area

Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs. Power frequency EMF is a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. In August of 2004, the CPUC opened an Order Instituting Rulemaking to update the Commission's policies and procedures related to electric and magnetic fields emanating from regulated utility facilities. The final decision, D.06-01-042, was issued in January 2006. The conclusions and findings included the following:

> "We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value."

This continues to be the stance of the CPUC regarding standards for EMF exposure. Since the decision was issued, the State has not determined that any risk would merit adoption of any specific limits or regulations regarding EMF levels from electric power facilities. In the interim, the CPUC Decision 06-01-042 requires that no-cost and low-cost steps be incorporated into project design to reduce EMF. The decision directs that no-cost mitigation measures be undertaken, and that low-cost options be implemented through the project certification process. Four percent of total project budgeted cost is the benchmark in developing EMF mitigation guidelines, and mitigation measures should achieve some noticeable reductions.

With regard to indirect effects on health, EMF of sufficient magnitude can impact operation of a few older model pacemakers, thus causing the pacemaker to revert to asynchronous pacing. However, asynchronous pacing can occur associated with exposure to transmission line voltages of 400 kV or higher (St. Jude Medical, 2012). Given that the proposed Project would include subtransmission facilities rated at 66 kV and less, the issue of asynchronous pacing is not addressed further in this EIR.

4.9.1.6 Schools

The Project would be located within 0.25 mile of five schools, including:

- Tutor Time, a day care and preschool south of Magnolia Avenue and east of Rimpau Avenue, approximately 0.20 mile southwest of the proposed Databank Source Lines alignment;
- Auburndale Intermediate School, a middle school, located along River Road, located adjacent to the Mira Loma-Jefferson subtransmission line alignment;

- Victress Bower Elementary School along W. Parkridge Avenue east of River Road, located 0.20 mile northeast of the Mira Loma-Jefferson subtransmission line alignment along River Road;
- George Washington Elementary School along W. Parkridge Avenue east of River Road, located 0.20 mile northeast of the Mira Loma-Jefferson subtransmission line alignment along River Road; and
- Colony High School, located at E Riverside Drive approximately 0.2 mile northwest of the existing Mira Loma Substation.

4.9.1.7 Airports

The nearest public airports are the Chino Airport, located approximately 0.7 mile northwest of the proposed Mira Loma-Jefferson subtransmission line alignment, and the Corona Municipal Airport, located approximately 1.1 miles to the southwest of the alignment. In addition, Ontario International Airport is located approximately 0.9 mile northeast of a potential staging yard located at the Southern California Edison (SCE) Ontario Service Center. Chino Airport contains three runways, the longest of which measures approximately 7,000 feet (AirNav, 2018a). Corona Municipal Airport contains one runway, measuring approximately 3,200 feet in length (AirNav, 2018b). As depicted in **Figure 4.9-2**, *Airport Safety Zones Map*, portions of the Project would be located within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for both the Chino Airport and Corona Municipal Airport. Ontario International Airport contains two runways, the longest of which measures approximately 12,000 feet. The nearest private-use airport is Lake Mathews Airport, located approximately 6.3 miles southeast of the proposed Circle City Substation site.

4.9.1.8 Regulatory Setting

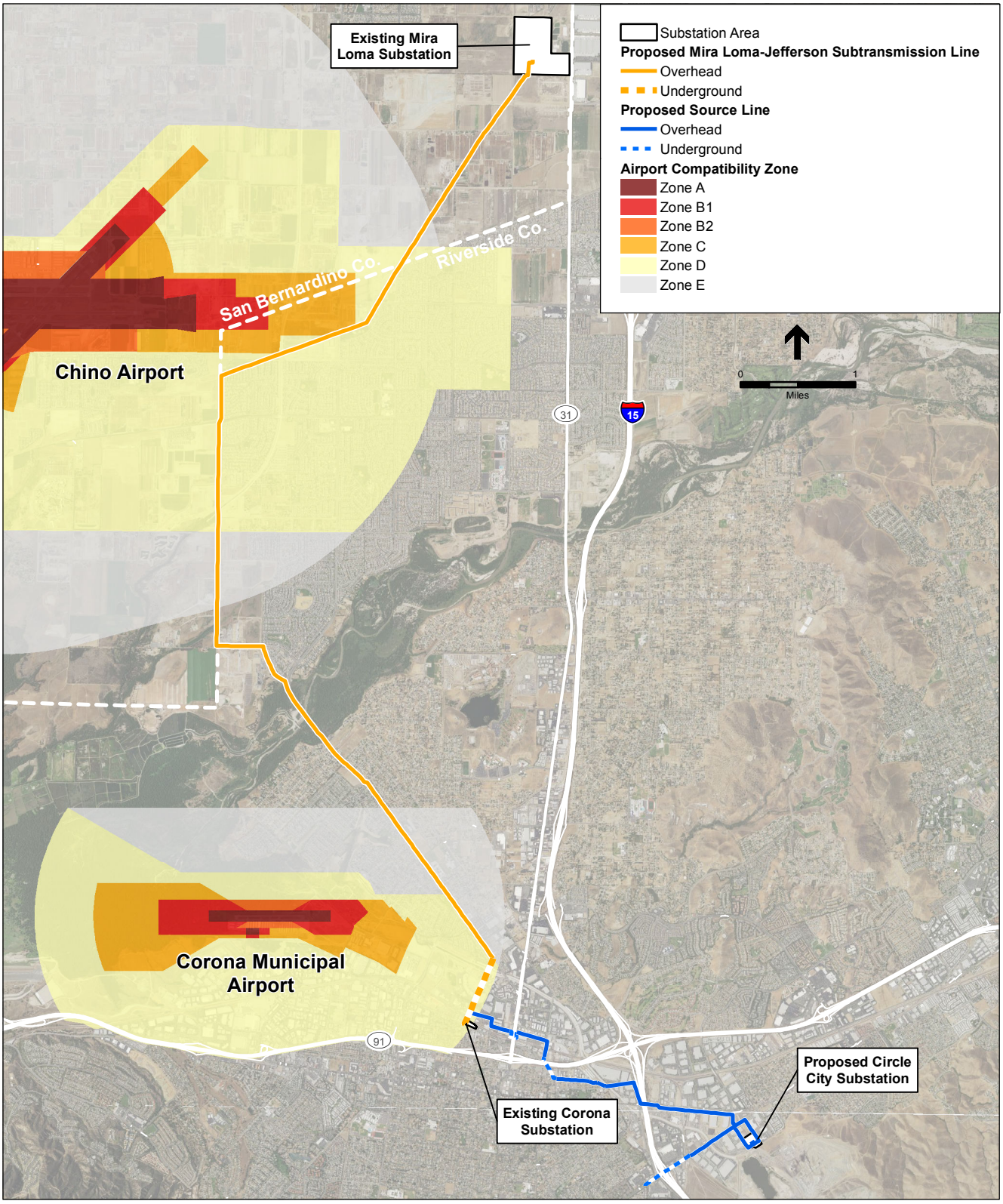
Federal

Occupational Safety and Health Administration

The federal Occupational Safety and Health Administration (OSHA) enforces regulations covering the handling of hazardous materials in the workplace. The regulations established in the Code of Federal Regulations (CFR) Title 29 are designed to protect workers from hazards associated with encountering hazardous materials at the work site. The regulations require certain training, operating procedures, and protective equipment to be used at work sites where hazardous materials could be encountered.

Resource Conservation and Recovery Act

Under the federal Resource Conservation and Recovery Act (RCRA), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements and is approved by the U.S. Environmental Protection Agency (USEPA). The USEPA approved California's RCRA program, referred to as the Hazardous Waste Control Law (HWCL) in 1992.



SOURCE: SCE, 2016

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.9-2

Airport Compatibility Zones in the Project Area

Toxic Substance Control Act

The Toxic Substances Control Act of 1976 was enacted by Congress to give the USEPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The USEPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. The USEPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was developed to protect the water, air, and land resources from the risk created by past chemical disposal practices. This act is also known as Superfund, and the sites listed under it are referred to as Superfund sites. Under CERCLA, the USEPA maintains a list, known as the Superfund Enterprise Management System (SEMS) [formerly the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)], of all contaminated sites in the nation that have in part or are currently undergoing clean-up activities. SEMS contains information on current hazardous waste sites, potential hazardous waste sites, and remediation activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL.

Federal Regulation 49 CFR Part 77

The Federal Aviation Administration (FAA) is the federal agency that identifies potential impacts related to air traffic and related safety hazards. The Federal Regulation 49 Code of Federal Regulation (CFR) Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the proposed construction or alteration on operating procedures;
- Determining the potential hazardous effect of the proposed construction on air navigation;
- Identifying mitigating measures to enhance safe air navigation; and
- Charting of new objects.

FAA FAR Part 77 includes the establishment of imaginary surfaces (airspace that provides clearance of obstacles for runway operation) that allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing adverse impacts to the safe and efficient use of navigable airspace. The regulations identify three-dimensional imaginary surfaces through which no object should penetrate.

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the USEPA seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations. Multiple sections of the CWA apply to activities near or within surface or ground water. Section 402(p) of the CWA regulates discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) Program. In California, NPDES permitting authority is delegated to and administered by the nine State Regional Water Quality Control

Boards (RWQCBs). Construction activities disturbing 1 acre or more of land, or that disturb less than 1 acre but are part of a larger common plan of development of 1 or more acres, are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbing Activities (Construction General Permit). This General Permit requires that storm water discharges and authorized non-storm water discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards (identified in the Basin Plan).

The Construction General Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must be developed for the specific project type, location, and characteristics, and must be submitted to the SWRCB along with the permit application (a Notice of Intent) before construction begins. A SWPPP for linear and underground/overhead projects (such as the proposed Project) is designed to ensure that: 1) all pollutants and their sources are controlled; 2) all non-stormwater discharges are identified and either eliminated, controlled, or treated; 3) site best management practices (BMPs) result in the reduction or elimination of pollutants in stormwater and authorized non-stormwater discharges; and 4) post-construction stabilization BMPs are completed.

State

California Code of Regulations

The California Code of Regulations (CCR), Title 22, Section 66261.20-24, contains technical descriptions of characteristics that would classify wasted material, including soil, as hazardous waste. When excavated, soils with concentrations of contaminants higher than acceptable levels must be handled and disposed of as a hazardous waste in accordance with CCR.

State Water Resources Control Board

The SWRCB and the Regional Water Quality Control Boards (RWQCBs) administer the requirements of the Clean Water Act that regulate pollutant discharges into waterways of the U.S. The Santa Ana Regional Water Quality Control Board (SARWQCB) enforces site cleanup regulations for illicit discharges that have resulted in contamination of groundwater in the Project area.

California Hazardous Materials Release Response Plans and Inventory Law

The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires businesses that store hazardous materials on-site to prepare a business plan and submit it to local health and fire departments. The business plan must include details of the facility and business conducted at the site, an inventory of hazardous materials that are handled and stored on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course.

California Occupational Safety and Health Administration

California OSHA (CalOSHA) is the state equivalent agency to the federal OSHA that regulates worker safety, which includes protection from hazardous materials.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, the California Environmental Protection Agency (CalEPA) adopted regulations, which implemented the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements, including: (1) hazardous waste generators and hazardous waste on-site treatment; (2) underground storage tanks (USTs); (3) aboveground storage tanks (ASTs); (4) hazardous materials release response plans and inventories; (5) risk management and prevention programs; and (6) Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level and the agency responsible for implementation of the Unified Program is called the Certified Unified Program Agency (CUPA). In the Project area, the San Bernardino County Fire Department, Hazardous Materials Division, and the Riverside County Department of Environmental Health, Hazardous Materials Branch are the designated CUPAs.

Department of Toxic Substance Control

The DTSC is responsible for regulating the use, storage, transport, and disposal of hazardous substances in the state. DTSC maintains a Hazardous Waste and Substances Site List for site cleanup. This list is commonly referred to as the Cortese List. Government Code Section 65962.5 requires the CalEPA to update the Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Hazardous Waste Management and Handling

Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program complies with federal RCRA requirements. The USEPA must approve state programs intended to implement federal regulations. In California, DTSC, a department within CalEPA, regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. USEPA approved California's HWCL program in 1992. DTSC is the primary agency overseeing regulation of hazardous materials, but it can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

The DTSC hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe the management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in ordinary landfills. Hazardous waste manifests must be retained by the generator for a minimum of 3 years. Hazardous waste manifests provide a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the state. The generator must match copies of hazardous waste manifests with receipts from treatment, storage, and disposal facilities.

Aboveground Storage of Petroleum Products

The Aboveground Petroleum Storage Act of 1990 requires owners or operators of facilities that store petroleum products with a capacity of 1,320 gallons or more to file a storage statement with the SWRCB and prepare a spill prevention, control, and countermeasures (SPCC) plan. The plan

must identify appropriate spill containment or equipment for diverting spills from sensitive areas, as well as discuss facility-specific requirements for the storage system, inspections, recordkeeping, security, and personnel training.

The SWRCB requires registration of an AST at a construction site only if the tank is 20,000 gallons or larger, or if the aggregate volume of aboveground petroleum storage is over 100,000 gallons, which would not be applicable to the Project. For smaller temporary tanks used during construction, methods for controlling a release and measures to clean up an accidental release and prevent degradation of water quality are addressed in the construction storm water pollution prevention plan (SWPPP) that would be prepared for the Project, as described in Section 4.10, *Hydrology and Water Quality*.

Underground Storage Tanks

State laws governing USTs specify requirements for permitting, monitoring, closure, and cleanup associated with these facilities. Regulations set forth construction and monitoring standards for existing tanks, release reporting requirements, and closure requirements. In the Project area, the San Bernardino County Fire Department, Hazardous Materials Division, and the Riverside County Department of Environmental Health, Hazardous Materials Branch has regulatory authority for permitting, inspection, and removal of USTs. Any entity proposing to remove a UST must submit a closure plan to the regulating agency prior to tank removal. Upon approval of the UST closure plan, the regulating agency would issue a permit, oversee removal of the UST, require additional subsurface sampling if necessary, and issue a site closure letter when the appropriate removal and/or remediation has been completed.

Hazardous Materials Transportation

The State of California has adopted U.S. Department of Transportation (USDOT) regulations for the intrastate movement of hazardous materials; state regulations are contained in 26 CCR Section 13-1160.2. In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR §13-1160). Both regulatory programs apply in California.

The two state agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). The CHP enforces hazardous materials and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill.

Common carriers are licensed by the CHP, pursuant to California Vehicle Code Section 32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

Every hazardous waste package type used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel. Every package is not put through every test. However, most packages must be able to be kept under running water for a time without leaking, dropped fully loaded onto a concrete floor, compressed from both sides for a period of time, subjected to low and high pressure, and frozen and heated alternately.

Hazardous Materials Emergency Response

Pursuant to the Emergency Services Act, California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including the USEPA, CHP, California Department of Fish and Wildlife, the RWQCBs (in this case the SARWQCB), the local air districts (in this case, the South Coast Air Quality Management District), and local agencies.

Pursuant to the Business Plan Law, local agencies are required to develop "area plans" for the response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the Business Plans submitted by people who handle hazardous materials. An area plan must include pre-emergency planning and procedures for emergency response, notification, and coordination of affected governmental agencies and responsible parties, training, and follow up.

Utility Notification Requirements

Title 8, Section 1541 of the CCR requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electric, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to conducting an excavation. The California Government Code (§ 4216 et seq.) requires owners and operators of underground utilities to become members of and participate in a regional notification center. According to Section 4216.1, operators of subsurface installations who are members of, participate in, and share in the costs of a regional notification center are in compliance with this section of the code. Underground Services Alert of Southern California (known as DigAlert) receives planned excavation reports from public and private excavators and transmits those reports to all participating members of DigAlert that may have underground facilities at the location of excavation. Members will mark or stake their facilities, provide information, or give clearance to dig.

Fire Protection

The California Public Resources Code includes fire safety regulations that apply to state responsibility areas during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations: restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors[2] on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of

[2] A spark arrestor is a device that prohibits exhaust gases from an internal combustion engine from passing through the impeller blades where they could cause a spark. A carbon trap commonly is used to retain carbon particles from the exhaust.

work in fire-prone areas. Additional codes require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line must maintain a firebreak clearing around and adjacent to any pole, tower, and conductors that carry electric current as specified in Sections 4292 and 4293.

General Order 95

General Order 95 includes rules and other requirements for overhead line design, construction, and maintenance, the proper application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation, or use of overhead lines and to the public in general.

Local

County of Riverside General Plan

The County of Riverside General Plan Safety Element provides specific policies to identify and reduce hazards to protect and guide future development within the County. The primary objective of the Safety Element is to reduce injuries, death, property damage, and economic and social impact from hazards. Related policies include natural hazard protocols and implementation of multiple regulatory plans such as the County of Riverside Hazard Mitigation Plan, Fire Protection Plan, and Emergency Medical Services (EMS) Strategic Master Plan. There are no hazards and hazardous materials policies that would be directly applicable to the proposed Project (County of Riverside, 2015).

County of Riverside Multi-Jurisdictional Hazard Mitigation Plan

The Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan is used to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and man-made hazards. Some topics discussed within the plan include risks of wildfires and fire protocols, hazardous material potential incidents, and proper transportation of hazardous materials. Covered within the Hazard Mitigation Plan are elements of the Riverside County Fire Department Fire Protection Plan, where the Fire Department, in correspondence with other cities within the County, secure resources and personnel to adequately respond to hazards, and the EMS Strategic Master Plan which establishes response rates, evacuation routes, and emergency situation preparedness.

County of San Bernardino General Plan

The Safety Element of the San Bernardino County General Plan is used to protect the health, safety, and welfare of the community of the County. The Safety Element identifies hazards and hazard abatement provisions to guide local decisions related to zoning and future development. The element contains general hazard and risk reduction strategies and policies to minimize potential dangers to residents, workers, and visitors to reduce the level of property loss resulting from potential disasters (County of San Bernardino, 2007). A related policy applicable to the Project includes:

> *Policy S2.3*: Ensure that environmental review is conducted for projects proposed on sites that have been identified as contaminated.

Certified Unified Program Agency (CUPA)

In 1993, Senate Bill (SB) 1082 was passed by the State Legislature to streamline the permitting process for those businesses that use, store, or manufacture hazardous materials. The passage of SB 1082 provided for the designation of a CUPA responsible for the permitting process and collection of fees. The CUPA is responsible for implementing at the local level the Unified Program, which serves to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs:

- Hazardous Waste;
- Hazardous Materials Business Plan;
- California Accidental Release Prevention Program;
- Underground Hazardous Materials Storage Tanks;
- Aboveground Petroleum Storage Tanks / Spill Prevention Control & Countermeasure Plans; and
- Hazardous Waste Generator and On-Site Hazardous Waste Treatment (tiered permitting) Programs.

The Riverside County Department of Environmental Health Hazardous Materials Branch is designated as the CUPA responsible for implementing the above-listed program elements in Riverside County. In the County of San Bernardino, the Hazardous Materials Division of the San Bernardino County Fire Department is designated as the CUPA responsible for implementing the above-listed program elements. The laws and regulations that established these programs require that businesses that use or store certain quantities of hazardous materials submit a Hazardous Materials Business Plan (HMBP) that describes the hazardous materials usage, storage, and disposal to the CUPA (SBCFD, 2016).

City of Corona General Plan

The Safety Element of the City of Corona General Plan identifies and evaluates natural and human-induced public safety risks that impact health, safety, and social well-being of the City. The Safety Element addresses natural hazards such as urban and wild land fires, and also human-induced risks such as hazardous material spills including transport, storage, and disposal (City of Corona, 2004). There are no hazards and hazardous materials policies that would be directly applicable to the Project.

City of Norco General Plan

The City of Norco General Plan, Safety Element identifies goals and policies to prevent the loss of life and property and minimize potential impacts of both natural and man-made hazards such as wild fires and release of hazardous materials (City of Norco, 2013). A related policy applicable to the Project is:

> *Policy 2.8.1b:* When determined feasible and/or necessary by the Fire Department, require established routes of transport to disposal of hazardous materials to avoid potential impact to sensitive land uses from materials being routinely transported.

City of Eastvale General Plan

The Safety Chapter of the Eastvale General Plan contains goals, policies, objectives, and actions to reduce or eliminate hazards. The Safety Chapter focuses on common natural hazards and also includes procedures for hazardous materials and waste and disaster preparedness (City of Eastvale, 2012). There are no hazards and hazardous materials policies that would be directly applicable to the Project.

4.9.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant effects on the environment associated with hazards and hazardous materials if it would:

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

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

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

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

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

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

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

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

i) Result in induced currents that cause harmful electric shocks.

4.9.3 Applicant Proposed Measures

SCE has identified the following applicant proposed measures (APMs) to minimize impacts associated with hazards and hazardous materials from the Project. The impact analysis assumes that the APMs would be implemented (i.e., part of the Project) to reduce hazards and hazardous materials-related impacts as discussed below.

APM-HAZ-01: Implement a Hazardous Materials Management Plan. SCE would prepare and implement a Hazardous Materials Management Plan (HMMP) during

construction of the Project. The plan would outline hazardous material handling, use, storage, and disposal requirements, as well as hazardous waste management practices. The plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations. The HMMP would include procedures to address hazardous material storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous material release containment/control procedures, hazard communication training, Personal Protective Equipment training, and release reporting requirements.

APM-HAZ-02: Fire Management Plan. SCE would prepare and implement a Fire Management Plan during construction of the Project. The plan would provide guidance for prevention, control, and extinguishment of fires. The plan also would provide smoking and fire-related rules, storage and parking areas, usage of spark arrestors on construction equipment, and fire-suppression tools and equipment. The plan would also include the following measure:

- Cease work during Red Flag Warning events in areas where grassland or other vegetation would be susceptible to accidental ignition by Project activities that could ignite a fire (such as welding or use of equipment that could create a spark). During Red Flag Warning events, as issued by the National Weather Service, all non-emergency construction and maintenance activities would cease in affected areas.

4.9.4 Impacts and Mitigation Measures

4.9.4.1 Approach to Analysis

Hazards and hazardous materials impacts would result from fluids used in construction equipment, from materials used and or stored at the construction sites, from encountering unexpected contaminated soil during construction, aviation hazards, from wildfires, and induced currents. Impact designations are discussed below. Feasible mitigation measures are recommended to reduce or avoid significant impacts.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Impact 4.9-1: Construction and operation and maintenance would require the use of hazardous materials that could pose a potential hazard to the public or the environment if improperly used or inadvertently released. *Less than significant with mitigation* (Class II)

Construction

Construction would require the use of limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, and oils to maintain vehicles and motorized equipment. An accidental spill of any of these substances could occur during handling and transfer from one container to another and could impact soil, water, and/or groundwater quality. Depending on the relative hazard of the material, an accidental spill could pose a hazard to construction workers, the public, and environment. The existing wood poles removed for the Project sites would be returned to the staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a municipal landfill that the RWQCB has approved for the disposal of treated wood waste. The use of hazardous materials

and substances during construction would be subject to the federal, state, and local health and safety requirements for the handling, storage, transportation, and disposal of hazardous materials, summarized in the Regulatory Setting. Proper implementation of these requirements would reduce the potential for the Project to pose a potential hazard to the public or the environment. Implementation of the SWPPP would reduce the chance of a spill and would have provisions to contain spills to avoid contamination of water bodies and groundwater. For further information regarding the SWPPP, refer to Section 4.10, *Hydrology and Water Quality*.

Pursuant to APM HAZ-01: *Implement a Hazardous Materials Management Plan*, prior to construction, all construction workers would receive training according to the HMMP. Among other things, the HMMP would outline hazardous material handling, use, storage, and disposal requirements, as well as hazardous waste management practices. The plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations. The HMMP would include procedures to address hazardous material storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous material release containment/control procedures, hazard communication training, Personal Protective Equipment training, and release reporting requirements. Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated BMPs would reduce this significant impact.

However, because APM HAZ-01 does not establish sufficient performance standards for the HMMP, this APM alone would not reduce potential hazardous materials impacts during construction to less than significant. Mitigation Measure 4.9-1 addresses performance standards and other mitigation requirements missing from APM HAZ-01 that would further reduce hazardous material impacts during construction to a less-than-significant level.

> **Mitigation Measure 4.9-1:** As identified in APM HAZ-01, SCE shall prepare and implement a Hazardous Materials Management Plan. The plan shall be prepared and submitted to CPUC for review and approval at least 30 days prior to the start of construction.
>
> The plan shall include, but not be limited to, the following requirements:
>
> 1) SCE shall prepare a Hazardous Substance Control and Emergency Response Plan (Plan) and implement it during construction to ensure compliance with all applicable federal, state, and local laws and guidelines regarding the handling of hazardous materials. If the Project would result in the storage or handling of a Threshold Quantity or greater of a hazardous substance as defined by the California Hazardous Materials Release Response Plan and Inventory Law, the Plan shall include preparation and implementation of a Hazardous Materials Business Plan that describes the hazardous materials usage, storage, and disposal to the appropriate Certified Unified Program Agency (San Bernardino County Fire Department, Hazardous Materials Division, and/or Riverside County Department of Environmental Health, Hazardous Materials Branch, as applicable). The Plan shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The Plan shall also include appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. The Plan shall be submitted to the CPUC for review and

approval prior to the commencement of construction activities. The Plan shall require that SCE and/or its contractors shall implement construction best management practices including but not limited to the following:

a. Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction.

b. Avoid overtopping construction equipment fuel gas tanks.

c. Use tarps and oil-absorbent pads under vehicles when refueling to contain and capture any spilled fuel.

d. During routine maintenance of construction equipment, properly contain and remove grease and oils.

e. Properly dispose of discarded containers of fuels and other chemicals.

f. Emergency spill supplies and equipment shall be kept at the project staging area and adjacent to all areas of work, and shall be clearly marked.

g. If potentially contaminated materials are encountered during excavation, work shall stop at that location and SCE's Spill Response Coordinator shall be called to the site to make an assessment and notify the proper authorities, including CPUC. The potentially contaminated soil shall be segregated into lined stockpiles or placed in dump trucks or roll-off containers, sampled, and tested to determine appropriate handling, treatment, and disposal options. If the soil is classified as hazardous, it shall be properly managed on location before being transported in accordance with United States Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility

2) SCE shall prepare and implement a Health and Safety Plan to ensure the health and safety of construction workers and the public during construction. The plan shall include information on the appropriate personal protective equipment to be used during construction, spill containment, emergency response, and other safety requirements consistent with OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) guidelines.

3) SCE shall ensure that the Workers Environmental Awareness Plan (WEAP) includes training on site-specific physical conditions to improve hazard materials release prevention and include a review of the Fire Management Plan (APM HAZ-02), Health and Safety Plan, and the Hazardous Substance Control and Emergency Response Plan. The CPUC mitigation monitor shall attend the first WEAP training program. SCE shall submit documentation to the CPUC prior to the commencement of construction activities that each worker on the project has undergone this training program.

Significance after mitigation: Less than significant.

Operation and Maintenance

Operation and maintenance of the Project may require the limited use of certain materials such as fuels, oils, solvents, and other chemical products that could pose a potential hazard to the public or the environment during routine transport, use, or disposal. Normal operation of the proposed

Circle City Substation, source lines, and subtransmission lines would be controlled remotely through SCE control systems, and manually in the field as required. During operation and maintenance of the Project, vehicles and equipment used for routine inspections and emergency repair would require the use of fuel and lubricants. Routine maintenance activities would include washing or replacing insulators, repairing or replacing other hardware components, tree trimming, and brush and weed control. While the Project would not require long-term operational use, storage, treatment, disposal, or transport of significant quantities of hazardous materials, hazardous materials would be used during maintenance activities.

The proposed Circle City Substation site would be equipped with transformer banks that would contain mineral oil. Because the quantity of oil stored would exceed 1,320 gallons, a SPCC Plan describing spill prevention measures would be required. This plan would be prepared and stamped by a Professional Engineer and a copy submitted to CPUC staff. Typical SPCC measures include secondary containment features such as curbs and berms designed to contain spills should they occur. These features would be part of SCE's final engineering design for the Project. As discussed above, because the Project would comply with federal and state hazardous materials laws and regulations; operation and maintenance impacts due to the routine transport, use, or disposal of hazardous materials would be less than significant.

Hazardous materials needed for maintenance activities would be stored and used in accordance with the product specifications and applicable regulations. Product specifications are described in detail on Material Safety Data Sheets (MSDS), which accompany every batch of materials considered to be hazardous. Information in the MSDS includes instructions on proper use and application of the material, accidental release measures, and handling and storage requirements. Applicable regulations specify storage and handling requirements such as proper container types and usage methods. MSDS would be available at construction work sites or in construction vehicles when doing routine maintenance.

Applicable regulations under Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. All transport of hazardous materials would be in compliance with applicable laws, rules, and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations. This impact would be less than significant for both the construction and operations phase of the Project.

Mitigation: None required.

---

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

For impacts related to a potential mineral oil spill at Circle City Substation, refer to the *Operation and Maintenance* discussion under Impact 4.9-1.

Impact 4.9-2: Construction could release previously unidentified hazardous materials into the environment. *Less than significant with mitigation* (Class II)

In addition to the use of hazardous materials, Project construction would entail ground-disturbing activities that could expose or unearth soil or groundwater contamination in the vicinity of the Project sites. The regulatory agency database search conducted for the Project identified 28 hazardous materials release sites within 0.25 mile of the Project sites and alignments. Sixteen LUST sites, three Cleanup Program Sites, and three Land Disposal Sites maintain a "case-closed" cleanup status, and no additional corrective action/cleanup activities are being conducted by DTSC or the RWQCB at these sites. Four permitted UST sites were also identified within 0.25 mile of the Project, and no violations have been reported for these sites. There are two open hazardous materials release sites within 300 feet of the Project site. The Downs Energy Site is identified as having soil affected by gasoline and is located at 1296 Magnolia Avenue in the City of Corona, adjacent to the proposed Databank Lines alignment. Soil contamination associated with this site does not appear to extend offsite and therefore it would not be expected to impact construction activities associated with the Project (SWRCB, 2016). The second site, the Corona Landfill Site, is identified as closed with monitoring and is located at 1462 Quarry Street in the City of Corona. Any contamination at this site would not be disturbed by the Project as the contamination does not extend off of the site. The potential for the Project to encounter soil or groundwater contamination associated with these sites is low.

However, while data obtained from the hazardous materials records searches for the Project indicate that no contamination has been identified along the proposed alignment, several nearby hazardous material sites have been identified. Contamination that may be associated with these sites may have migrated and could be uncovered or encountered during construction. There also could have been undocumented releases of hazardous materials (e.g., petroleum hydrocarbons from underground storage tanks, polychlorinated biphenyls (PCBs) from transformers at Mira Loma Substation) along the proposed alignments and sites that could have migrated into the vicinity of the Project site and could be uncovered or encountered during construction; which could cause a significant adverse impact to workers and/or the environment during construction activities.

As stated in Project Description Section 2.6.13, *Site Cleanup, Dust Control, and Waste Management*, the Project includes features to reduce potential impacts associated with releasing previously unidentified hazardous materials into the environment; however, this description does not include reporting to CPUC on implementation of these actions, and does not establish sufficient performance standards. Therefore, it cannot solely be relied on to conclude that impacts would be less than significant. These actions have been incorporated into Mitigation Measure 4.9-1 to ensure CPUC enforcement of their implementation.

If contaminated soil or groundwater were encountered during construction, it could be mobilized and spread throughout the environment, which would create a significant hazard impact to the public and/or environment. Mitigation Measure 4.9-1 would address appropriate response actions in the event that hazardous materials are released or encountered during excavation activities through the implementation of a Hazardous Substance Control and Emergency Response Plan. Through implementation of Mitigation Measure 4.9-1, this impact would be reduced to less than significant.

Additionally, during construction activities there would be a potential to encounter and damage subsurface utilities (e.g., a natural gas line) and/or structures (e.g., an UST) that could result in a release of a hazardous material. The potential for such incidents would be reduced by thoroughly screening for subsurface structures in areas prior to commencement of any subsurface work in compliance with California Government Code Section 4216 et seq., which requires the required use of DigAlert (Underground Services Alert of Southern California). Along with visual observations, a geophysical survey and line clearance by hand digging where necessary, and use of buried line locating equipment, SCE compliance with California Government Code Section 4216 et seq. would ensure that this impact is less than significant.

Mitigation: Implement Mitigation Measure 4.9-1.

Significance after Mitigation: Less than significant.

---

c) Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

Impact 4.9-3: Construction activities could release hazardous materials within the vicinity of an existing school. *Less than significant with mitigation* (Class II)

There are five schools located within 0.25 mile of the proposed subtransmission line and/or the existing Mira Loma Substation. There are no schools located within 0.25 mile of the Circle City Substation site.

Hazardous emissions resulting from construction of the Project would include the temporary and short-term generation of particulate matter less than or equal to 10 microns in diameter (PM_{10}) and diesel particulate matter (DPM) emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy-duty trucks. Impacts 4.3-6 and 4.3-7 in Section 4.3, Air Quality, discuss construction emissions of PM_{10} and DPM, respectively, that could expose sensitive receptors to harmful pollutant concentrations. As discussed under Impact 4.3-6, construction of the proposed Mira Loma-Jefferson subtransmission line would result in PM_{10} emissions that would exceed applicable Localized Significance Thresholds for PM_{10}, which would expose students and staff at Auburndale Intermediate School, a middle school located along River Road, to significant concentrations of PM_{10}. The construction-related PM_{10} impact at the school would be significant even with incorporation of air quality **Mitigation Measures 4.3-2a** and **4.3-2b**. Therefore, **Mitigation Measure 4.9-3**, which would require construction activities adjacent to the school to be conducted when students are not on campus, is recommended to reduce the impact to a less-than-significant level. Based on South Coast Air Quality Management District local source threshold screening tables, the other schools described in Section 4.9.1, Setting, are at sufficient distances (i.e., over 50 meters [164 feet]) from the proposed construction areas so impacts at these schools would be less than significant. As described in Air Quality Impact 4.3-7, the health (cancer) risk from the short-term DPM emissions along the proposed subtransmission line would be insignificant. Therefore, impacts from DPM emissions near schools would be less than significant.

In addition to hazardous emissions, minor spills of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, could occur during construction. If such spills were to occur within 0.25 mile of a school, they could result in a significant impact. However, with implementation of spill prevention and containment measures in **Mitigation Measure 4.9-1**, such spills would be limited in volume and would not migrate off-site. Following mitigation, this impact would be less than significant.

> **Mitigation:** Implement Mitigation Measures 4.3-2a, 4.3-2b, and 4.9-1.
>
> **Mitigation Measure 4.9-3:** SCE shall coordinate construction activities with the administration of Auburndale Intermediate School to ensure that construction activities associated with the Mira Loma-Jefferson 66 kV Subtransmission Line are not conducted within 50 meters (164 feet) of the school while students are on campus (e.g., during non-school hours and/or during breaks in the school year). SCE shall provide the CPUC with documentation of the coordination with the school administration at least 60 days before work would begin within the vicinity of the school.
>
> **Significance after Mitigation:** Less than significant.

---

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment. (No Impact)

Based on regulatory database searches conducted for the Project (see Section 4.9.1, *Setting*), the Project sites and alignments are not identified on any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and therefore construction, operation, and maintenance of the Project would not create a significant hazard to the public or the environment (No Impact).

---

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

Impact 4.9-4: Construction, operation, and maintenance of the Project could result in an aviation safety hazard for people residing or working in the project area. *Less than significant with mitigation* (Class II)

The Project is within 2 miles of two public airports, including the Chino Airport and Corona Municipal Airport, located approximately 0.7 mile and 1.1 miles northwest and southwest of the proposed Mira Loma-Jefferson subtransmission line alignment, respectively. As described above and depicted in Figure 4.9-2, *Airport Safety Zones Map*, portions of the Project would be located within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for both the Chino Airport and Corona Municipal Airport.

Title 14, Part 77 of the CFR states that FAA notification is necessary for construction projects greater than 200 feet in height or those located within 20,000 feet of a public use airport that exceed

a 100-to-1 surface ratio from any point on an airport's longest runway measuring more than 3,200 feet. The longest runway at Chino Airport measures approximately 7,000 feet. As the nearest Project poles would be located at a distance of approximately 4,600 feet from the Chino Airport and would be a maximum of 105 feet tall, the Project would exceed the 100-to-1 surface ratio for the Chino Airport. The Corona Municipal Airport contains one runway, which measures approximately 3,200 feet in length. Since the nearest Project poles would be located a distance of approximately 5,900 feet from the Corona Municipal Airport and are a maximum of 105 feet tall, the Project would also exceed a 100-to-1 surface ratio for the Corona Municipal Airport. Additionally, during construction, cranes required to install poles would likely be taller than the poles. Therefore, SCE would be required file notice with the FAA at least 45 days prior to beginning construction.

Baseline conditions along the proposed Mira Loma-Jefferson subtransmission line alignment include other towers and/or poles in SCE's existing utility ROW and/or public ROW. Existing light-weight steel (LWS) or wood poles would be removed and new taller LWS poles and tubular steel poles (TSPs) would be installed. It should be noted that the proposed new poles east of Hellman Avenue would be on the south or east side (opposite of Chino Airport) of the existing towers associated with the Mira Loma-Serrano No. 1 and No. 2 500 kV transmission lines and the Mira Loma-Olinda 220 kV Transmission Line. Nonetheless, the FAA would conduct its analysis of the Project structures and may recommend no changes to the design of the proposed structures; or it may request redesigning the proposed structures near the airports to reduce their height, marking the structures (including the addition of aviation lighting), or placing marker balls on wire spans. If SCE determines the FAA recommendations are not reasonable or feasible, in accordance with 14 CFR Part 77, Subpart E, it may petition the FAA for a discretionary review of its determination to address any issues. To ensure that the intent of the FAA recommendations with regard to aviation safety are incorporated as part of the Project, implementation of **Mitigation Measure 4.9-4** is suggested. Implementation of this measure would reduce this potentially significant impact to aviation safety to a less-than-significant level.

> **Mitigation Measure 4.9-4:** In the event that the Federal Aviation Administration (FAA) provides SCE with aviation safety recommendations for the project, SCE shall implement the recommendations to the extent feasible. If SCE determines that the recommendation is not feasible, SCE must consult with FAA to identify how the intent of the recommendation, in terms of aviation safety, can be achieved in a feasible manner to ensure that construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. SCE shall submit to the CPUC a detailed report identifying the specific reasons why it has determined that the recommendations are not feasible. The report shall include documentation of SCE's correspondences with FAA and present an FAA-agreed-upon solution to implement and achieve the aviation safety intent of the FAA recommendations that ensures construction, operation, and maintenance of the Project would not result in an aviation safety hazard for people residing or working in the project area. The report shall be submitted to the CPUC for approval at least 90 days prior to installation of any project component.
>
> **Significance after Mitigation:** Less than significant.

---

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area. (No Impact)

No private airports are located within the vicinity of the Project. The nearest private-use airport is Lake Mathews Airport, located approximately 6.3 miles southeast of the proposed Circle City Substation site; therefore, no impact would occur (No Impact).

Mitigation: None required.

---

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact 4.9-5: Construction of the Project could interfere with an emergency response or evacuation plan. *Less than significant with mitigation* (Class II)

Construction

All construction activities at substations would be within the fence lines of the facilities. Associated activities and vehicles at the substations would not reduce the width of access roads or driveways, or block roads or driveways, and thus would not impair emergency access to the substations.

Subtransmission line-related construction activities such as pole and duct bank/vault installation associated with the proposed Source Lines, pole removal and installation and duct bank/vault installation associated with the Mira Loma-Jefferson subtransmission line, and the Archibald-Chino-Corona underground crossover installation would require temporary lane closures, and would involve the movement of oversize vehicles that could affect emergency vehicle access to and through the Project construction areas. Temporary lane closures could also occur during stringing or removing the conductors across roadways, during the installation and removal of crossing structures, or during the installation of poles adjacent to roadways. Delays could occur along emergency access routes during these construction-related lane/road closures, resulting in a significant impact.

Implementation of Mitigation Measure 4.17-1 requires the construction contractor to coordinate all construction activities and associated lane closures with emergency service providers in and along the Project corridors to minimize disruption to emergency vehicle access to land uses along the corridors. Implementation of this measure would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels.

Operation and Maintenance

Once constructed, the Project would not include any uses or design features that would result in interference with any adopted emergency response plan or emergency evacuation plan. The transmission and source lines would not obstruct existing roads or access routes. As described in Section 2.5.1.8, Substation Access, the Circle City Substation would be accessible from two routes, one 24 feet in width and one 16 feet in width. This would provide adequate emergency access because either road would be wide enough to accommodate emergency vehicles, in the event that one access route becomes unusable. Therefore, the Project would not result in

significant impacts to emergency access during operation. The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and, thus, this impact would be less than significant.

> **Mitigation:** Implement Mitigation Measure 4.17-1 (see Impact 4.17-1 discussion in Section 4.17, *Transportation and Traffic*).
>
> **Significance after Mitigation:** Less than significant.

---

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

Impact 4.9-6: Construction could increase the probability of a wildfire. *Less than significant with mitigation* (Class II)

Most of the Project Area is within moderate to very high fire threat areas, as shown in Figure 4.9-1. A portion of the proposed Mira Loma-Jefferson subtransmission line alignment crosses an area of extreme fire threat in the vicinity of the Santa Ana River. Heat or sparks from construction vehicles and equipment could have the potential to ignite dry vegetation and cause a fire, particularly during the dry season. Therefore, depending on the time of year and location of construction activities, this would be a significant impact.

APM HAZ-02, *Fire Management Plan*, includes requirements for prevention, control, and extinguishment of fires. The Fire Management Plan includes measures to address smoking and fire rules, storage and parking areas, use of gasoline-powered tools, use of spark arresters on construction equipment, road closures, use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Implementation of a Fire Management Plan would reduce impacts related to exposure of people or structures to a significant risk of loss, injury or death involving wildland fires, but the impact would remain significant.

However, to ensure that significant wildland fire impacts associated with the Project are reduced to less than significant, implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and the availability of appropriate fire protection equipment.

> **Mitigation Measure 4.9-6:** SCE and/or its contractors shall prepare and implement a Fire Safety Plan to ensure the health and safety of construction workers and the public. SCE shall contact the appropriate fire departments (Riverside County Fire Department, San Bernardino County Fire Department, Corona Fire Department, Chino Valley Independent Fire District, and Ontario Fire Department) for consultation during plan preparation and shall include fire safety measures recommended by these agencies. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations. The plan shall include, but not be limited to, the following:

- SCE and/or its contractors shall have water tanks and/or water trucks sited/available in the Project area for fire protection.
- All construction vehicles shall have fire suppression equipment.
- All construction workers shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire.
- As construction may occur simultaneously at several locations, each construction site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
- Construction personnel shall be required to park vehicles away from dry vegetation.
- Prior to construction, SCE shall contact and coordinate with the appropriate fire departments to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks if water trucks are not used. SCE shall submit verification of its consultation with CAL FIRE and the local fire departments to the CPUC.
- SCE shall submit the plan along with all records of consultation with local fire departments, including any responses received from fire departments, to CPUC staff for approval at least 30 days prior to commencement of construction activities and shall be distributed to all construction crew members prior to construction of the Project.

Significance after Mitigation: Less than significant.

Impact 4.9-7: Operation could increase the probability of a wildfire. *Less than significant* (Class III)

During operation, the Project could increase the risk of wildland fires in the area. At Circle City Substation, the oil-insulated 66/12 kV transformers could pose a fire hazard in the rare event of a failure of transformer integrity; however, a Spill Prevention Control and Countermeasures (SPCC) Plan would be required to contain any spill in accordance with Title 40 Sections 112.1-112.7 of the Code of Federal Regulations (CFR). Typical SPCC secondary containment features include curbs designed and installed to contain spills, should they occur. Such features would also be effective in containing a fire in the rare event that oil ignites. In addition, the enclosed substation surface would be covered with crushed rock that would help contain a fire.

Outside the substation, electrical lines can start a fire if an object, such as a tree limb, kite, Mylar balloon, etc., simultaneously contacts the subtransmission line conductors and a second object, such as the ground or a portion of the supporting pole; if two conductors make contact; or if dust and/or dirt builds up on insulators such that a conductive path to a portion of the tower is created. To minimize the risk of trees falling on the subtransmission line or other accidental ignition of a wildland fire from the subtransmission line, SCE would follow State vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293, which require that certain vegetation management activities be performed and maintained for overhead conductors that traverse trees and vegetation to establish necessary and reasonable clearances measured between line conductors and vegetation under normal conditions.

Given proper ROW management, arcing between conductor phases is more likely than between a conductor and the ground. System component failures and accidents during maintenance activities can also cause line faults that result in arcing on subtransmission lines. Distribution and subtransmission lines are also subject to conductor-to-conductor contact, which can occur when extremely high winds force two conductors on a single pole to oscillate so excessively that they contact one another. This contact can result in arcing (sparks) that can ignite nearby vegetation.

Both distribution and subtransmission systems are designed to withstand high winds, and it is extremely rare for higher-voltage transmission structures to blow over. If this rare event does occur, the protection system on a subtransmission line is designed to shut off power flow in a fraction of a second. Distribution structure failures are also infrequent but due to their placement in narrower corridors in close proximity to trees and other tall vegetation they may be pushed down in storms by wind-blown trees.

The risk of ignitions and the risk of damage from a Project-related ignition are low, and as mentioned above, SCE would be required to implement state vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. As described in Section 2.7, Operation and Maintenance, SCE would inspect the subtransmission and distribution overhead facilities in a manner consistent with CPUC General Order 165, which would be a minimum of once per year via ground. Inspections would include corrosion, equipment misalignment, loose fittings, and other common mechanical problems. In addition, the Mira Loma-Jefferson subtransmission line and the proposed source line alignments would be primarily within urban areas, with dense vegetation only in the vicinity of the Mira Loma-Jefferson subtransmission line crossing of the Santa Ana River. However, the Project would result in the replacement of the old existing subtransmission line support structures in this area with new structures that would be less prone to failure. Consequently, implementation of the Project would not result in a significant risk of loss, injury, or death involving wildland fires; therefore, operational impacts would be less than significant.

Mitigation: None required.

---

i) Result in induced currents that cause harmful electric shocks.

Impact 4.9-8: Induced currents associated with operation of the Project could generate electrical shocks. *Less than significant with mitigation* (Class II)

Power line fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, fences, construction equipment, and vehicles. Transmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than five milliampere). When a person or animal comes in contact with a conductive object a perceptible current or small electric shock may occur. These small electric shocks cause no physiological harm; however, they may present a nuisance. Nuisance-related impacts associated with electrical shock would be significant.

Impacts related to electric shocks would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8.

> **Mitigation Measure 4.9-8:** As part of the siting and construction process, SCE shall identify objects, such as fences, metal buildings, pipelines, etc. that are within the 500 kV ROW that have the potential for induced voltages to cause a perceptible current or small electrical shock and shall implement electrical grounding of those metallic objects in accordance with Cal/OSHA Electrical Safety Orders at 8 CCR 2739. The identification of objects shall be provided to the CPUC at least 30 days prior to the commencement of construction, and shall document the thresholds of electric field strength and metallic object size at which grounding becomes necessary.
>
> **Significance after Mitigation:** Less than significant.

4.9.5 Alternatives

4.9.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts that would result under the Project, as discussed in Section 4.3.5, *Impacts and Mitigation Measures*, would not occur. Therefore, no hazards or hazardous materials impacts would occur under the No Project Alternative (No Impact).

4.9.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, no substation or associated facilities, including source lines, would be constructed, only the Mira Loma-Jefferson Subtransmission Line and associated facilities, as proposed. Alternative B would have similar construction impacts related to the transport, use, and disposal of hazardous materials that could affect workers, the public, or environment, or present a public health/safety risk. Development under Alternative B would result in less square footage than the proposed Project, which would reduce the amount of hazardous materials transported, used, and disposed of during construction and operation activities. Alternative B would include implementation of a HMMP pursuant to APM HAZ-01, but like the Project, Alternative B would require implementation of Mitigation Measure 4.9-1 to reduce potential hazardous materials impacts during construction to less than significant (Impact 4.9-1; Class II).

In contrast to the proposed Project, Alternative B would not require routine transport, use, or disposal required for the operation and maintenance of the Circle City Substation. However,

Alternative B would still require routine inspections and emergency repair for the subtransmission line. Therefore, the risk from hazardous materials that could pose a potential hazard to the public or the environment during operation and maintenance would be lower than the risk associated with the proposed substation (Impact 4.9-1; Class III).

Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impact 4.9-2; Class II).

Alternative B would be within 0.25 mile of five existing schools as described in Impact 4.9-3. Hazardous emissions resulting from construction of Alternative B would include the temporary and short-term generation of DPM emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy duty trucks. Alternative B would reduce the amount of construction and duration of construction since it would not include the substation or associated facilities, including source lines. As described for the Project, the health risk to people at Auburndale Intermediate School from short-term construction emissions of PM_{10} would be reduced to less than significant with implementation of Mitigation Measures 4.3-2a, 4.3-2b, and 4.9-3 (Impact 4.9-3; Class II); while DPM emissions along the proposed subtransmission line would be negligible with respect to cancer health risk (Impact 4.9-3; Class III). Minor spills of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, could occur during construction within 0.25 mile of a school. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 4.9-1 (Impact 4.9-3; Class II).

Alternative B would be within the footprint of the proposed Mira Loma-Jefferson subtransmission line. Based on regulatory database searches conducted for the alignment (see Section 4.9.1, *Setting*), no hazardous materials sites along the alignment are identified on any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and therefore construction, operation, and maintenance of the Alternative B would not create a significant hazard to the public or the environment (No Impact).

Construction, operation, and maintenance of the Mira Loma-Jefferson subtransmission line under Alternative B could result in the same aviation safety hazard for people residing or working in the area described in Impact 4.9-4. To ensure that the desired intent of the FAA recommendations with regard to aviation safety are incorporated as part of the Project, implementation of Mitigation Measure 4.9-4 is suggested. Impacts would be the same as the proposed Project, less than significant with mitigation (Class II).

Temporary lane closures could occur during construction in and adjacent to roadways that could affect emergency vehicle access to and through construction areas. Delays could occur along emergency access routes during these construction-related lane/road closures. This impact would be reduced under Alternative B because no work associated with the proposed substation source

lines would be conducted within and adjacent to roadways. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

As with the proposed Project, construction of Alternative B could increase the probability of a wildfire. A portion of the proposed Mira Loma-Jefferson subtransmission line alignment crosses an area of extreme fire threat in the vicinity of the Santa Ana River. Heat or sparks from construction vehicles and equipment could have the potential to ignite dry vegetation and cause a fire, particularly during the dry season. Therefore, depending on the time of year and location of construction activities, this would be a significant impact. As described for the Project, implementation of APM HAZ-02 would reduce potential impacts related to exposure of people or structures to a significant risk of loss, injury or death involving wildland fires. However, to ensure that potentially significant wildland fire impacts associated with implementation of Alternative B are reduced to less than significant, implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and the availability of appropriate fire protection equipment. Implementation of Alternative B would result in the same level of impact as the proposed project, less than significant with mitigation (Impact 4.9-6; Class II). Alternative B operational impacts related to wildfires would also be the same as the proposed Project, less than significant (Impact 4.9-7; Class III). During operations, the risk of ignition would be low and SCE would be required to implement state vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative and would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would include a half-mile-long underground conduit installation within Hellman Avenue. Similar to the proposed Project, equipment associated with construction of Alternative C1 could spill or leak oils, fuels, and/or lubricants, and construction activities could release previously unidentified hazardous materials in to the environment. However, since Alternative C1 would include construction of 0.5 mile of additional underground line, additional construction equipment and earth moving activities would be required. Therefore, the risk of spills or release of previously unidentified hazardous materials into the environment would be higher than those associated with the proposed overhead segment due to the increased length of underground line under Alternative C1. Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

There are no schools within 0.25 mile of the Alternative C1 underground segment; however, the overall impact on schools along the rest of the subtransmission line would be the same as the Project (Impact 4.9-3; Classes II and III).

The Alternative C1 alignment is within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plan for Chino Airport. Therefore, placing the subtransmission line underground would reduce potentially significant aviation safety impacts compared to the proposed overhead subtransmission line. There would be no aviation safety impact along the 0.5-mile underground portion of the alignment (No Impact); however, it should be noted that the overall aviation safety impact associated with the proposed Project would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to other segments of the proposed overhead subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures during construction activities along Hellman Avenue could affect emergency vehicle access to and through construction areas. This impact would be greater under Alternative C1 because the line would be installed underground within the road as opposed to overhead adjacent to the road under the Project. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

According to available regulatory documentation, there are no hazardous materials sites in the vicinity of this underground alternative alignment. Same as for the proposed overhead alignment, Alternative C1 is in an area of moderate and very high fire threat classification. Implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. The construction-related fire hazard impact would be reduced to less than significant (Impact 4.9-6; Class II). During operations, unlike the proposed overhead segment, there would be no risk that the underground segment could cause ignition of vegetation so the associated operational fire hazard impacts would be reduced for this alternative compared to the proposed Project. The risk of wildfire during operations would be reduced under Alternative C1, but the overall impact would continue to be less than significant (Impact 4.9-7; Class III). In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative and would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment from the SCE ROW down to River Road would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 mile underground) and would replace approximately 5.4 miles of overhead line that would be associated with the proposed Mira Loma-Jefferson subtransmission line. Impacts associated with hazards and hazardous materials would essentially be the same as identified for the proposed Project. Similar to the proposed Project, equipment associated with construction of Alternative C2 could spill or leak oils, fuels, and/or lubricants, and construction activities could release previously unidentified hazardous materials

into the environment. However, since Alternative C1 would include construction of 1.2 miles of additional underground line, more construction equipment and earth moving activities would be required for this alternative. Therefore, the risk of spills or release of previously unidentified hazardous materials in the environment would be higher than those associated with the proposed overhead segment due to the increased length of underground line under Alternative C2. Nonetheless, compliance with applicable federal, state, and local regulations, and implementation of the SWPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. Like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

There are five hazardous materials sites within 0.25 mile of this alternative alignment (SWRCB, 2016; DTSC, 2016). As described in **Table 4.9-3**, the clean-up related to four of the LUST sites was completed between 1994 and 2007. One of the LUST sites is currently active, with ongoing remediation and monitoring taking place. This site has resulted in diesel contamination of groundwater and soil; however, it is approximately 950 feet from the Alternative C2 alignment (SWRCB, 2016). Therefore, the contaminated groundwater plume would not be expected to impact the Project site, and impacted soils would not be encountered at the Project site. Same as for the proposed Mira Loma-Jefferson subtransmission line alignment that the alternative alignment would replace; there are no hazardous materials sites along the alignment, resulting in no impact.

TABLE 4.9-3
HAZARDOUS MATERIALS SITES IN THE VICINITY OF ALTERNATIVE C2

Site Name	Distance to Alignment	Regulatory List	Notes
John and Bob's Service	150 feet	LUST Cleanup Site	LUST – Waste oil affected soil. Cleanup Status: Completed Case Closed as of 11/22/1994
Truck Plaza	150 feet	LUST Cleanup Site	LUST – Diesel affected soil. Cleanup Status: Completed Case Closed as of 8/29/1994
Private Residence	Adjacent to alignment	LUST Cleanup Site	LUST – Diesel and gasoline affected groundwater. Cleanup Status: Completed Case Closed as of 1/11/2007
Golden Coach Moving	950 feet	LUST Cleanup Site	LUST – Gasoline affected groundwater and soil Cleanup Status: Open – verification monitoring
Dallape Dairy	1,200 feet	LUST Cleanup Site	LUST – Gasoline affected soil Cleanup Status: Completed Case Closed as of 7/10/1995

SOURCE: SWRCB, 2016; DTSC, 2016.

There are two City of Eastvale schools within 0.25 mile of the Alternative C2 alignment. One of the schools, Clara Barton Elementary School, is located approximately 0.25 mile from the alternative alignment, and the other, Ronald Reagan Elementary School, is located approximately 0.20 mile from the alternative alignment. Hazardous emissions resulting from construction of the Project would include the temporary and short-term generation of PM_{10} and DPM emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy-duty trucks. Construction-related emissions near these schools would result from subtransmission line pole replacements along Archibald Avenue, which would proceed at a linear pace and would occur within the vicinity of the schools for longer than 2 weeks. Because the school sites would be at sufficient distances (e.g., over 1,000 feet) from construction areas and total emissions and duration of exposure would be relatively minor compared to the exposure periods used in health risk assessments, the health risk from the short-term PM_{10} and DPM emissions that would be associated with construction of the Alternative C2 segment would be negligible; however, the overall PM_{10} impact at Auburndale Intermediate School would remain less than significant with Mitigation Measures 4.3-2a, 4.3-2b, and 4.9-3 (Impact 4.9-3; Class II) and the DPM cancer health risk impact would remain less than significant (4.9-3; Class III). In addition to hazardous emissions, minor spills of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, could occur near the schools during construction; however, such spills would be limited in volume and would not migrate off-site. This impact would be less than significant with implementation of Mitigation Measure 4.9-1 (Impact 4.9-3; Class II). These short-term construction impacts associated with release of hazardous materials within the vicinity of an existing school would be greater under this alternative given that the segment of the proposed subtransmission that it would replace is not within the vicinity of any schools.

Similar to the proposed Mira Loma-Jefferson subtransmission line alignment, the Alternative C2 alignment is within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plan for Chino Airport. With the exception of the new pole that would transition the overhead line to underground in SCE's ROW at Archibald Avenue, the other overhead poles and conductor would be outside of the 100-to-1 surface ratio relative to the airport runway. The overall aviation safety impact under this alternative would be reduced relative to the proposed Project; however, given that the FAA would need to be notified about the one structure, to ensure that the desired intent of any FAA recommendations with regard to aviation safety are incorporated as part of the project, implementation of Mitigation Measure 4.9-4 is recommended. Implementation of this measure would reduce this potentially significant impact to aviation safety to a less-than-significant level (Impact 4.9-4; Class II).

Temporary lane closures during construction activities along Archibald Avenue could affect emergency vehicle access to and through construction areas. This impact would be the same as under the Project. Although the underground line installation within the road that would be associated with this alternative would involve more equipment in the road ROW, Archibald Avenue is a six-lane divided road that has more travel lanes than the two-lane Hellman Avenue along the proposed segment it would replace, so it would be better able to accommodate traffic disturbances during construction. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Same as for the proposed overhead alignment, Alternative C2 crosses areas of moderate to extreme fire threat classifications, and implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. The construction-related fire hazard impact would be reduced to less than significant (Impact 4.9-6; Class II). During operations, unlike the proposed overhead segment, there would be no risk that the underground segment under this alternative could cause ignition of vegetation and there would be no associated operational fire hazard impacts. The risk of wildfire during operations would be reduced under Alternative C2, but the overall impact would continue to be less than significant (Impact 4.9-7; Class III). In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative due to reduced amount of overhead lines that would be installed. The impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would involve construction of up to three subtransmission-level (66kV) battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project. Under Alternative C3, construction, operation, and maintenance-related impacts associated with hazardous materials would be similar to those that would result under the proposed Project. Similar to the proposed Project, equipment associated with construction and operation of Alternative C3 could spill or leak oils, fuels, and/or lubricants. In addition, construction activities associated with Alternative C3 could release previously unidentified hazardous material into the environment. None of the potential battery storage sites are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Furthermore, previous LUST sites within 0.25 mile of the sites maintain a “completed case-closed” status or “no further action” status. Due to the similar scope, this potential impact would be the same as identified for the proposed Project, Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, SPCC measures, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

There are two schools located within 0.25 mile of the battery storage and substation locations, including Christian Heritage School, approximately 270 feet from the 50 MW facility and Corona High School, about 500 feet from the 42 MW facility. Hazardous emissions resulting from construction of Alternative C3 would include the temporary and short-term generation of PM_{10} and DPM emissions from the use of off-road diesel equipment and from construction material deliveries and debris hauling using on-road heavy-duty trucks. Assuming the peak on-site emissions for the battery storage and substation facilities would be the same as for Circle City Substation, but due to the farther proximity (within 270 feet) to sensitive receptors, the maximum allowable emissions threshold for PM_{10} is 37 pounds per day. Using this threshold, peak on-site construction emissions associated with the 50 MW and 42 MW facilities would not expose

nearby schools to harmful concentrations of PM_{10}, resulting in less-than-significant impacts (Impact 4.9-3; Class III).

Regarding construction-related DPM emissions associated with these facilities, given their relatively short distances to the schools, it is assumed that the maximum incremental construction-related increase in carcinogenic risk would be substantially higher than the risk associated with construction of Circle City Substation, which would represent a significant health risk impact. While implementation of Mitigation Measure 4.3-2b would reduce diesel particulate emissions to the maximum extent feasible, the availability of construction equipment at the time of project construction that meets the highest USEPA-certified tiered emission standards is currently unknown. As a result, it cannot be established at this time that implementation of Mitigation Measure 4.3-2b would reduce health risk to below the 10 in one million significance threshold. Therefore, the significant impact on schools associated with construction of the 50 MW and 42 MW facilities under Alternative C3 would be unavoidable even with incorporation of mitigation (Impact 4.9-3; Class I).

In addition to hazardous emissions, minor spills of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, could occur during construction. If such spills were to occur within 0.25 mile of a school, they could result in a significant impact. However, with implementation of spill prevention and containment measures in Mitigation Measure 4.9-1, such spills would be limited in volume and would not migrate off-site. Following mitigation, this impact would be less than significant (Impact 4.9-3; Class II).

The Alternative C3 subtransmission line connection and telecommunication line alignments are not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport, and the poles and conductor would be outside of the 100-to-1 surface ratio relative to the airports runways. Unlike the proposed Mira Loma-Jefferson subtransmission line, there would be no aviation safety impact under this alternative.

Temporary lane closures during construction activities associated with the subtransmission line connection and telecommunication line alignments along West 6th Street, Ontario Avenue, S. Lincoln Avenue, W. Grand Boulevard, 10th Street, ~~and~~ Magnolia Avenue, etc., could affect emergency vehicle access to and through construction areas. Given the reduced mileage of subtransmission line under this alternative compared to the proposed Mira Loma-Jefferson subtransmission line, this impact would be the reduced compared to the Project. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Under Alternative C3, construction, operation, and maintenance-related risk of loss, injury or death involving wildland fires would be less than that of the proposed Project because the Mira Loma-Jefferson subtransmission line, which crosses areas of moderate to extreme fire threat classification, would not be built. Alternative C3's battery storage sites would not be situated within a mapped fire threat area. Nonetheless, APM HAZ-02 would apply to Alternative C3 as it

applies to all project components. Implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. This construction-related fire hazard impact would be reduced to less than significant with mitigation (Impact 4.9-6; Class II).

Lithium ion batteries are proposed to store energy. The batteries would be contained in pad-mounted enclosures. If the battery storage is not properly designed, lithium ion batters could heat to the point of thermal runaway (i.e., failure of a single cell within the system cascading into a fire and explosion). This technology requires cooling of the battery components (cells/modules). Alternative C3 would cool the battery components by maintaining the battery enclosure room temperature within a specific temperature range (around 68 degrees Fahrenheit) using traditional air conditioner units (compressor-based refrigerant systems). The battery enclosures would provide an additional level of protection by providing containment in the event of a fire. Under Alternative C3, SCE would implement a fire suppression system to reduce the risk of fire (SCE, 2018). Features such as electronic monitoring systems, alarms, and circuit breakers would be incorporated in the final design to lower the possibility of a thermal runaway chain reaction. Although the fire risk hazards associated with Alternative C3 would be greater than the Project, these features would ensure that impacts associated with wildland fire hazards during operation would be less than significant (Impact 4.9-7; Class III).

In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative due to reduced amount of overhead lines that would be installed. The impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

4.9.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would involve construction of a distribution-level (12 kV) battery storage facility instead of the Circle City Substation and associated source lines. Under Alternative D1, construction, operation, and maintenance-related impacts associated with hazardous materials would be similar to those that would result under the proposed Project. Similar to the proposed Project, equipment associated with construction and operation of the D1 could spill or leak oils, fuels, and/or lubricants; however, as with the proposed Project, compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, SPCC measures, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. Due to the smaller size of the battery storage facility relative to the proposed Circle City Substation, impacts would be reduced under this alternative. However, like

the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II). There are no schools within 0.25 mile of the Alternative D1 battery storage site; however, the overall impact on schools along the Mira Loma-Jefferson subtransmission line that may be implemented under this alternative would be the same as the Project (Impact 4.9-3; Classes II and III).

Same as the proposed Circle City Substation site, the Alternative D1 battery storage facility site is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport, and its associated hardware would be outside of the 100-to-1 surface ratio relative to the airports runways. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures along Magnolia Avenue, Railroad Street, Grand Avenue, Quarry Street, 6th Street, and other streets during construction activities associated with the distribution and/or telecommunications connections could affect emergency vehicle access to and through construction areas. This impact would be reduced under Alternative D1 because the road construction that would be associated with the proposed substation source lines would not occur. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Under Alternative D1, construction, operation, and maintenance-related risk of loss, injury, or death involving wildland fires would be the same as the proposed Project because like the proposed Circle City Substation it would be located in an area of extreme fire threat classification. Implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. This construction-related fire hazard impact would be reduced to less than significant with mitigation (Impact 4.9-6; Class II).

Lithium ion batteries are proposed to store energy under Alternative D1 and are described under Alternative C3. Alternative D1 would cool the battery components in the same way as Alternative C3. The battery enclosures would provide an additional level of protection by providing containment in the event of a fire. Under Alternative D1, SCE would implement a fire suppression system to reduce the risk of fire (SCE, 2018). Features such as electronic monitoring systems, alarms, and circuit breakers would be incorporated in the final design to lower the possibility of a thermal runaway chain reaction. These features would ensure that impacts associated with wildland fire hazards during operation would be less than significant (Impact 4.9-7; Class III).

In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative due to the reduced amount of overhead lines that would be installed compared to the proposed Project. The impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative D2: 66/12 kV Substation Site Alternative

Construction and operation of Alternative D2 would be similar in scope to that of the proposed Circle City Substation. Impacts associated with hazards and hazardous materials would essentially be the same as identified for the proposed Project. Similar to the proposed Project, equipment associated with construction and operation of the Alternative D2 could spill or leak oils, fuels, and/or lubricants; however, as with the proposed Project, compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, SPCC measures, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impact 4.9-1 and 4.9-2; Class II).

According to available regulatory documentation, a historical LUST site is adjacent to western side of the property along All American Way. The underground storage tank is reported to have leaked gasoline, but has been remediated and the case was closed in 1994 (CEH&S, 2015). Same as for the proposed substation site, there are no hazardous materials sites at the alternative substation site or schools within 0.25 mile of the site.

There are no schools within 0.25 mile of the Alternative D2 site or the associated source line alignments; however, the overall impact on schools along the Mira Loma-Jefferson subtransmission line that may be implemented under this alternative would be the same as the Project (Impact 4.9-3; Classes II and III).

Same as the proposed Circle City Substation site, the Alternative D2 site is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport, and its associated poles and infrastructure would be outside of the 100-to-1 surface ratio relative to the airports runways. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures associated with of construction of substation source lines could affect emergency vehicle access to and through construction areas. This impact would be the same as under the Project. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Like the proposed substation site, the alternative substation site is on vacant within an area with extreme fire threat classification. The site does include some vegetation that could pose a fire hazard and APM HAZ-02 would apply to Alternative D2 as it applies to all project components. Implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. This construction-related fire hazard impact would be the same as the Project, reduced to less than significant with mitigation (Impact 4.9-6; Class II). During operations, the risk of ignition at the substation site is low and SCE would be required to implement state vegetation and

tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. Operational fire hazard impacts associated with Alternative D2 would be the same as the Project, less than significant (Impact 4.9-7; Class III). Potential impacts related to perceptible currents or small electric shocks would be the same as the Project with implementation of Mitigation Measure 4.9-8 (Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would be approximately 300 feet longer and would include an additional 800 feet of underground line compared to the proposed Pedley Source Lines segment. Impacts associated with hazards and hazardous materials would essentially be the same as identified for the proposed Project, but the risk of spills or release of previously unidentified hazardous materials into the environment would be incrementally higher based on the greater length of underground line segment under this alternative. Similar to the proposed Project, equipment associated with construction of Alternative E1 could spill or leak oils, fuels, and/or lubricants; however, as with the proposed Project, compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

According to available regulatory documentation, there are two historical LUST sites in the vicinity of the alternative alignment (one at a distance of 800 feet and one at a distance of 575 feet) along E. Sixth Street. The underground storage tanks are reported to have leaked gasoline, but have been remediated and the case was closed in 2004 and 2005 (SWRCB, 2016). Same as for the proposed Pedley Source Lines alignment, there are no hazardous materials sites along the alignment or schools within 0.25 mile of the alignment.

There are no schools within 0.25 mile of the Alternative E1 alignment; however, the overall impact on schools along the Mira Loma-Jefferson subtransmission line that may be implemented under this alternative would be the same as the Project (Impact 4.9-3; Classes II and III).

Same as the proposed Pedley Source Lines alignment, the Alternative E1 alignment is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport, and its associated poles and infrastructure would be outside of the 100-to-1 surface ratio relative to the airports runways. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures associated with of construction of the source lines under this alternative could affect emergency vehicle access to and through construction areas. This impact would be greater than under the Project due to the increased underground line work in roads under Alternative E1. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts

associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Same as the proposed Pedley Source Lines alignment, Alternative E1 is within an area with very high fire threat classification. APM HAZ-02 would apply to Alternative D1 as it applies to all Project components, and implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. This construction-related fire hazard impact would be reduced to less than significant (Class II). During operations, the risk of ignition would be low and SCE would be required to implement state vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. Operational fire hazard impacts associated with the alternative would be less than significant (Class III). In addition, although there would be no potential impacts related to perceptible currents or small electric shocks associated with the underground segment, the overall impact associated with the overhead segments of the source lines and the Mira Loma-Jefferson subtransmission line would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines; however, it includes an underground line segment from just west of I-15 to the proposed Circle City Substation site. This alternative would include approximately 1.5 miles of additional underground line compared to the proposed Pedley Source Lines. Impacts associated with hazards and hazardous materials would essentially be the same as identified for the proposed Project. Similar to the proposed Project, equipment associated with construction of Alternative E2 could spill or leak oils, fuels, and/or lubricants, and construction activities could release previously unidentified hazardous materials into the environment. However, since Alternative E2 would include construction of 1.5 miles of additional underground line, additional construction equipment and earth moving activities would be required. Therefore, the risk of spills or release of previously unidentified hazardous materials into the environment would be higher than those associated with the proposed overhead segment. Nonetheless, compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

According to available regulatory documentation, there is one historical LUST site in the vicinity of the underground alternative alignment at a distance of 115 feet along E. Sixth Street. The underground storage tank is reported to have leaked diesel, but has been remediated and the case was closed in 1993 (SWRCB, 2016). There are no hazardous materials sites along the alignment or schools within 0.25 mile of the alignment.

There are no schools within 0.25 mile of the Alternative E2 underground alignment; however, the overall impact on schools along the Mira Loma-Jefferson subtransmission line that may be implemented under this alternative would be the same as the Project (Impact 4.9-3; Classes 11 and III).

Same as the proposed Pedley Source Lines overhead alignment, the Alternative E2 underground alignment is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures associated with of construction of the source lines under this alternative could affect emergency vehicle access to and through construction areas. This impact would be greater than under the Project due to the increased underground line work in roads under Alternative E2. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Same as for the proposed overhead alignment, Alternative E2 is within areas of very high and extreme fire threat classification. APM HAZ-02 would apply to Alternative E2 as it applies to all project components, and implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. The construction-related fire hazard impact would be reduced to less than significant (Impact 4.9-6; Class II). During operations, unlike the proposed overhead segment, there would be no risk that the underground segment could cause ignition of vegetation and there would be no associated operational fire hazard impacts; however, the overall operational fire hazard impacts associated with the aboveground segments of the source lines and the Mira Loma-Jefferson subtransmission line would be less than significant (Impact 4.9-7; Class III).

In addition, although there would be no potential impacts related to perceptible currents or small electric shocks associated with the underground segment, the overall impact associated with the overhead segments of the source lines and the Mira Loma-Jefferson subtransmission line would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would include 1.3 miles of overhead lines in a double circuit configuration, which would be 0.1 mile longer than the proposed Databank Source Lines. However, unlike the proposed Databank Source Lines, which would include nearly 0.5 mile of underground subtransmission line installation, this alternative would include no underground line installation activities. Similar to the proposed Project, equipment associated with construction of Alternative E3 could spill or leak oils, fuels, and/or lubricants, and construction activities could release

previously unidentified hazardous materials in to the environment. However, since Alternative E3 would include no underground line construction, less construction equipment and earth moving activities would be required. Therefore, the risk of spills or release of previously unidentified hazardous materials into the environment would be lower than those associated with the proposed Databank Source Lines. Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials release and releasing previously unidentified hazardous material into the environment. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impacts 4.9-1 and 4.9-2; Class II).

According to available regulatory documentation, there is a historical Cleanup Program site adjacent to the southern end of the alternative alignment at the corner of Old Temescal Road and Compton Avenue. The reported contaminates of concern include petroleum fuels and oils, but has been remediated and the case was closed in 1999 (SWRCB, 2016). In addition, there is one historical LUST site in the vicinity of the alternative alignment at a distance of 1,000 feet along Old Temescal Road. The underground storage tank is reported to have leaked diesel, but has been remediated and the case was closed in 1990 (SWRCB, 2016).

There are no schools within 0.25 mile of the Alternative E3 alignment; however, the overall impact on schools along the Mira Loma-Jefferson subtransmission line that may be implemented under this alternative would be the same as the Project (Impact 4.9-3; Classes II and III).

Same as the proposed Databanks Source Lines alignment, the Alternative E3 alignment is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures associated with of construction of the source lines under this alternative could affect emergency vehicle access to and through construction areas. Although Alternative E3 would require an overhead crossing of I-15 that could temporarily affect interstate traffic during conductor stringing operations, it would require less underground construction work than the proposed Project (avoiding open trenching in Magnolia Avenue), resulting in an overall decrease in impacts compared to the proposed Project. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Same as for the proposed overhead alignment, Alternative E3 is not in an area of extreme fire threat classification. APM HAZ-02 would apply to Alternative D1 as it applies to all Project components, and implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. The construction-related fire hazard impact would be reduced to less than significant (Impact 4.9-6; Class II). During operations, the risk of ignition would be low

and SCE would be required to implement state vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. Compared to the proposed Databank Source Lines, operational fire hazard impacts associated with the alternative would be slightly increased due to the additional length of overhead lines; however, the impact would continue to be less than significant (Impact 4.9-7; Class III).

In addition, the potential for impacts related to perceptible currents or small electric shocks associated with Alternative E3 would be increased compared to the Project given the longer length of overhead line compared to the proposed Databank Source Lines. The impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 includes only the Databank Source Lines to supply power to Circle City Substation. Similar to the proposed Project, equipment associated with construction of Alternative E4 could spill or leak oils, fuels, and/or lubricants, and construction activities could release previously unidentified hazardous materials in to the environment. However, since Alternative E4 would include less trenching and excavation, less construction equipment and earth moving activities would be required. Therefore, the risk of spills or release of previously unidentified hazardous materials into the environment would be lower than those associated with the proposed Project. Compliance with applicable federal, state, and local regulations, and implementation of the SWPPP, HMMP, and all the associated best management practices would reduce potential impacts related to an inadvertent hazardous materials. However, like the Project, implementation of Mitigation Measure 4.9-1 would be required to reduce impacts to less than significant (Impact 4.9-1; Class II).

According to available regulatory documentation, the Downs Energy Site is identified as having soil affected by gasoline and is located at 1296 Magnolia Avenue in the City of Corona, adjacent to the proposed Databank Lines alignment. Soil contamination associated with this site does not appear to extend offsite and therefore this site would not be expected to impact construction activities associated with the Alternative E4. The second site, the Corona Landfill Site, is identified as closed with monitoring and is located at 1462 Quarry Street in the City of Corona. Any contamination at this site would not be disturbed by the Alternative E4 as the contamination does not extend off of the site. However, as for the Project, if previously unknown contaminated soil or groundwater were encountered and disturbed during construction, it could create a significant hazard to the public or environment. With implementation of Mitigation Measure 4.9-1, which requires the implementation of a Hazardous Substance Control and Emergency Response Plan including appropriate response actions in the event that hazardous materials are released or encountered during excavation activities, this impact would be reduced to less than significant (Impact 4.9-2; Class II).

There is a daycare facility located within 0.25 mile of the Databank Source Lines; however, at a distance of 0.2 mile, there is sufficient distance from the proposed construction areas so local PM_{10} emissions impacts at the daycare would be less than significant (Impact 4.9-3; Class III).

Alternative E4 would produce reduced DPM emissions associated with line construction compared to the proposed Project. Because the total emissions and duration of exposure at any one sensitive receptor location would be relatively minor compared to the exposure periods used in health risk assessments, the cancer health risk from the short-term DPM emissions that would be associated with construction of the Alternative E4 would be negligible, and this impact would be less than significant (Impact 4.9-3; Class III).

The Alternative E3 source lines alignment is not within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for Chino Airport or Corona Municipal Airport. However, it should be noted that the overall aviation safety impact associated with this alternative would continue to be less than significant with implementation of Mitigation Measure 4.9-4 relative to the Mira Loma-Jefferson subtransmission line (Impact 4.9-4; Class II).

Temporary lane closures associated with of construction of the source lines under this alternative could affect emergency vehicle access to and through construction areas. Alternative E4 would require less new underground construction work than the proposed Project, resulting in an overall decrease in impacts compared to the proposed Project. Implementation of Mitigation Measure 4.17-1 would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels (Impact 4.9-5; Class II).

Same as for the proposed overhead alignment, Alternative E4 is in an area of extreme fire threat classification. APM HAZ-02 would apply to Alternative E1 as it applies to all Project components, and implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. The construction-related fire hazard impact would be reduced to less than significant (Impact 4.9-6; Class II). During operations, the risk of ignition would be low and SCE would be required to implement state vegetation and tree clearing requirements, including CPUC General Order 95 and PRC Section 4293. Compared to the proposed Project, operational fire hazard impacts associated with the alternative would be decreased due to the reduced length of overhead lines; however, the impact would continue to be less than significant (Class III). In addition, potential impacts related to perceptible currents or small electric shocks would be decreased under this alternative due to reduced amount of overhead lines that would be installed. The impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 4.9-8 (Impact 4.9-8; Class II), which would require electrical grounding of metallic objects, such as fences, metal buildings, pipelines, etc., within the 500 kV ROW.

References – Hazards and Hazardous Materials

AirNav, 2018a. KCNO Chino Airport, Chino, California, USA. Updated March 29, 2018. Available online at: http://www.airnav.com/airport/KCNO. Accessed April 24, 2018.

AirNav, 2018b. KAJO Corona Municipal Airport, Corona, California, USA. Updated March 29, 2018. Available online at: h http://www.airnav.com/airport/KAJO. Accessed April 24, 2018.

California Department of Forestry and Fire Protection (CAL FIRE), 2006. Fire Threat. Available online at: http://frap.fire.ca.gov/data/frapgismaps/pdfs/fthreat_map.pdf.

CEH&S Environmental Engineering, 2015. Phase I Environmental Site Assessment, Circle City Substation Project. February 6.

Chino Airport. 2011. Airport Master Plan. Available online at: http://www.chinohills.com/chino-airport-master-plan-documents/. Site visited June 14, 2016.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 10, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on June 12, 2016.

City of Eastvale, 2012. City of Eastvale General Plan – Safety Element. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 12, 2016.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 14, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 12, 2016.

County of San Bernardino, 2007. County of San Bernardino General Plan. Available online at: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed on June 10, 2016.

St. Jude Medical, 2012. Technical Insight, Electromagnetic Interference and the Pacemaker Patient, September 2012.

Southern California Edison (SCE), 2013. Proponent's Environmental Assessment, Circle City Substation and Mira-Loma-Jefferson 66 kV Subtransmission Line Project, December 4, 2015.

SCE, 2018. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Question 15 for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, January 2018.

California State Water Resources Control Board (SWRCB), 2014a. Geotracker. Available online at: http://geotracker.waterboards.ca.gov/, accessed June 12, 2016.

Department of Toxic Substances Control (DTSC), 2016. EnviroStor Database. Available online at: http://www.envirostor.dtsc.ca.gov/public/, accessed June 12, 2016.

4.10 Hydrology and Water Quality

This section discusses the existing environmental and regulatory setting of the Project and alternatives, identifies impacts related to construction, operation, and maintenance of the Project and alternatives, and identifies mitigation measures for those impacts determined to be significant. Setting information presented in this section was compiled from SCE's Proponent's Environmental Assessment (PEA) (SCE, 2015), resource agency websites and databases, and Geographic Information System (GIS) data.

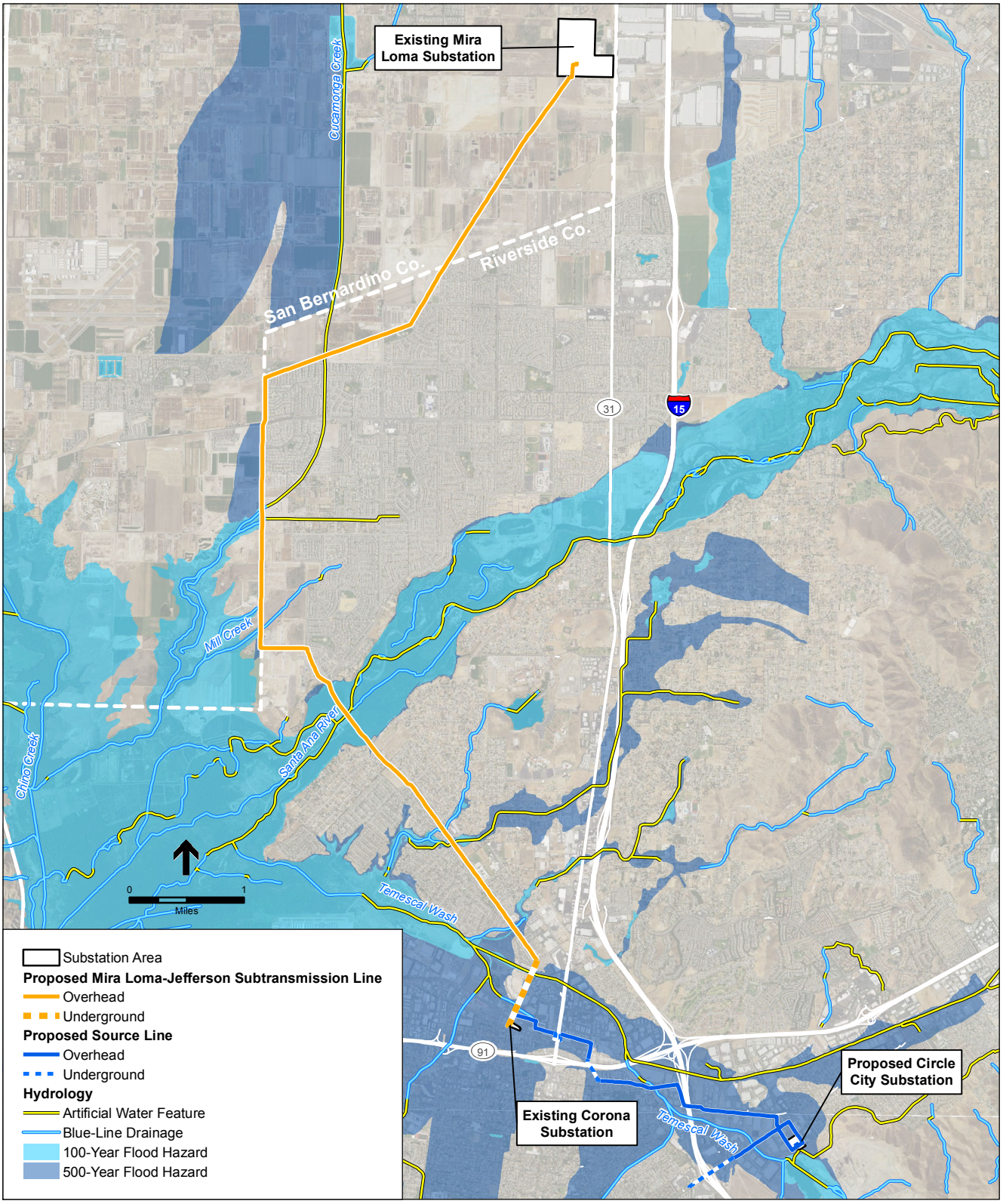
4.10.1 Setting

4.10.1.1 Surface Water Hydrology

The Project sites and alignments are within the Santa Ana River watershed, a 2,840 square-mile area extending west from the headwaters in the San Bernardino and San Jacinto Mountains to the Pacific Ocean (Santa Ana Watershed Project Authority, 2016). In the vicinity of the Project area, the watershed is comprised of a series of inland basins drained by surface streams generally flowing southwest toward the Santa Ana Mountains and Santa Ana Canyon (RWQCB, 2008). The climate in the Santa Ana River watershed region is Mediterranean, with dry summers and mild, wet winters. The average rainfall in the region is about 12 inches, most of it falling between November and March (Weatherbase, 2016). Prior to development, surface water in the region flowed year round. Surface waters have been diverted for agricultural and domestic uses since the region began to develop; treated wastewater has replaced some of the flows in some streams (RWQCB, 2008).

The proposed Project alignments cross multiple channelized and unchannelized tributaries to the Santa Ana River, as well as the Santa Ana River itself, as shown in **Figure 4.10-1**. The Circle City Substation site is just northeast of the Temescal Wash. The Temescal Wash is channelized from this area for approximately 4 miles before it drains into a riparian unchannelized area that flows to the Santa Ana River. Each of the proposed Project alignments (i.e., the Databank Source Lines, the Pedley Source Lines, and the Mira Loma-Jefferson subtransmission line) cross the channelized Temescal Wash before it reaches the Santa Ana River. The Mira Loma-Jefferson Subtransmission line alignment crosses the Santa Ana River east of the River Road Bridge. Once across the Santa Ana River, the proposed alignment continues northwest to the Riverside County line and turns north, crossing Mill Creek and the channelized Cucamonga Creek. The proposed alignment crosses channelized Cucamonga Creek once more before terminating at the Mira Loma Substation in Ontario. All of the channels crossed by the Project alignments drain to the Santa Ana River.

Approximately 4 miles west of the crossing of the Santa Ana River by the Mira Loma-Jefferson subtransmission line alignment, the river has cut through the Santa Ana Mountains (forming Santa Ana Canyon) and flows onto the Orange County coastal plain (RWQCB, 2008). In 1941 the Prado Dam was constructed at the eastern end of the Santa Ana Canyon through the Santa Ana Mountains (Orange County Public Works, Flood Division, 2016). The dam controls flows from the Santa Ana River and several tributaries.



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584

Figure 4.10-1
Surface Hydrology and Special
Flood Hazard Areas in the Project Area

As noted above, most of the annual rainfall in the Project area occurs in the winter, and most of it can fall in 1 to 2 days, resulting in major floods and widespread damage (RWQCB, 2008). In the mountainous headwaters of Temescal Wash and other Santa Ana River tributaries, a combination of steep slopes and high rates of rainfall rapidly concentrate runoff, causing flows with high velocities and large peak discharges (County of Riverside, 2000). These flows often contain large amounts of debris due to the topographic relief and lack of vegetative cover. During major floods, flood water carries heavy debris and causes considerable damage from deposition. In addition, considerable damage is caused by erosion and scouring by high velocity flows. Nearly all of the streams in the area have been channelized (usually a concrete channel designed to rapidly move large volumes of water with minimal property damage [e.g., from channel scour]) to protect the developed areas from winter flooding (RWQCB, 2008). Stormwater runoff from urbanized areas in the cities of Corona, Norco, Chino, Eastvale, and Ontario either flows indirectly (through storm drain systems) or directly into local flood control channels, waterways, creeks, the Santa Ana River, and ultimately to the Prado Basin.

Additional surface water control facilities in the region besides the Prado Dam include Lake Elsinore and Lake Mathews, although Lake Mathews is a reservoir designed for storage of Colorado River water and not for flood control. Lake Elsinore, located 16 miles south of the Project area, was a naturally-occurring lake that is now managed to remain approximately 6 square miles in surface area. Lake Elsinore occasionally overflows into the Temescal Wash during torrential rains or extended wet weather (RWQCB, 2008). Lake Mathews is located 4.5 miles southeast of the Project area and is the western terminus for the Colorado River Aqueduct (MWD, 2016). Flood control and channel characteristics of these surface water features are described below.

Santa Ana River

The Santa Ana River drains an approximately 1,694 square mile area. The main stem of the Santa Ana River is divided by the California Regional Water Quality Control Board (RWQCB) into six reaches. Reaches are designated by RWQCB for some rivers and creeks to generally define separate hydrologic and water quality units. The proposed Mira Loma-Jefferson subtransmission line alignment crosses Reach 3 of the Santa Ana River (RWQCB, 2008). The river is effluent-dominated, due to the diversions of water for residential and agricultural use along with the increase in size of the inland cities between 1970 and 1990 (RWQCB, 2008). However, Reach 3 is generally natural and unmodified (RWQCB, 2008). The Santa Ana River is dry most of the year (County of Riverside, 2000). In the last century, large floods have occurred on the Santa Ana River on the average of once every 5 years, and the River Road Bridge was washed out during the floods of 1969. Most of the larger watercourses traversing developed areas in Riverside County have been improved to control flooding. Figure 4.10-1 shows the flood hazard areas in the vicinity of the Project sites and alignments. The flood elevation of the Santa Ana River in the vicinity of the proposed Mira Loma-Jefferson subtransmission line alignment is 552 feet NAVD88. The proposed source line alignments and the Circle City substation are within the 500-year flood zone. The Project alignment traverses the Santa Ana River corridor, which is within the 100-year flood zone.

The one-percent flood water surface elevation for the Prado Dam Basin, which collects water during storm events, is 549 feet NAVD88[1] (FEMA, 2014). The U.S. Army Corps of Engineers (USACE) has raised the dam embankment, and is currently increasing the height of the dam spillway (Orange County Public Works, 2016).

Cucamonga Creek/Mill Creek

The Cucamonga Creek watershed is approximately 92 square miles in size. Dominant sources of flows in Reach 1 of Cucamonga Creek, which is crossed by the proposed Mira Lima-Jefferson subtransmission line alignment and stretches from south of the San Gabriel Mountains to the Prado Basin, include urban, commercial/industrial, and agricultural land uses as well as two regional wastewater treatment facilities (RWQCB, 2013). All of Reach 1 is concrete lined. The concrete channel ends near Prado Flood Control Basin, where the stream name changes to Mill Creek (RWQCB, 2008).

Temescal Wash

Temescal Wash has a drainage area of approximately 250 square miles at its confluence with the Santa Ana River (FEMA, 2014). From the headwaters at Lake Elsinore, the Temescal Wash flows northwest to the Santa Ana River, draining the Temescal Valley. Rare torrential rains or extended wet cycles have produced overflows of Lake Elsinore that flow through Temescal Wash to the Santa Ana River (RWQCB, 2008). Damaging floods occurred in 1938, 1943, and 1969. Temescal Wash/Channel presently exists in various states of management from Magnolia Avenue through the northeastern part of Corona. The management varies from concrete sections in the southeast part of Corona to a natural channel from Lincoln Avenue to the Prado Flood Control Basin (City of Corona, 2004). Just south of the Circle City Substation site, the Temescal Wash collects in an irregularly-shaped basin that may have been filled after aggregate mining in the area during the early 1980s (Miller, Shumway and Hill, 1991; SCE, 2015). Temescal Wash is dry most of the year.

Lake Mathews

The Circle City Substation site and the proposed alignments are within the inundation area of the dam that creates Lake Mathews, located 7 miles southeast of Corona (City of Corona, 2004). The Mathews Dam (on Lake Mathews), built in 1918, drains a 40-square-mile area. The dam is 264 feet tall and can store 222,400 acre-feet of water (County of Riverside, 2000). Failure of this dam would cause flooding along the Temescal Wash (City of Corona, 2004).

San Antonio Creek Dam

The northern portion of the proposed Mira Loma-Jefferson subtransmission line alignment that extends from the Riverside/San Bernardino County line to the Mira Loma Substation, is within the San Antonio Creek Dam Failure Inundation Area (City of Ontario, 2006). The San Antonio Creek Dam is located on San Antonio Creek, approximately 12 miles north of the proposed alignment.

[1] North American Vertical Datum of 1988

4.10.1.2 Groundwater

The Project area is entirely within the Upper Santa Ana Valley watershed and groundwater basin, which covers an approximately 1,000-square-mile area in Riverside and San Bernardino counties. The Project alignments traverse two subbasins of the Upper Santa Ana Valley groundwater basin: the Chino Subbasin and the Temescal Subbasin.

The 240-square-mile Chino Subbasin is bounded on the east by the Rialto-Colton fault (near Fontana); on the southeast by the contact with impermeable rocks forming the Jurupa Mountains and low divides connecting the exposures; on the south by contact with impermeable rocks of the Puente Hills and by the Chino fault; on the northwest by the San Jose fault; and on the north by impermeable rocks of the San Gabriel Mountains and by the Cucamonga fault (DWR, 2006a). San Antonio Creek and Cucamonga Creek drain the surface of the subbasin southward to join Santa Ana River (DWR, 2006a). Annual mean precipitation across the surface of the subbasin averages about 17 inches (DWR, 2006a). Groundwater recharge to the subbasin occurs by direct infiltration or precipitation on the subbasin floor, by infiltration of surface flow, and by underflow of groundwater from adjacent basins (DWR, 2006a). Five recharge facilities are located in the northern portion of the Subbasin (DWR, 2006a). Holocene and upper Pleistocene[2] alluvium are the primary water-bearing units in the Chino Subbasin (DWR, 2006a). The Chino Subbasin has been an adjudicated basin since 1978.

The proposed Mira Loma-Jefferson subtransmission line alignment traverses the southern portion of this Subbasin. Groundwater levels between 2011 and 2015 measured in wells monitored by the U.S. Geological Survey (USGS) in and around the Santa Ana River, Mill Creek, and Eastvale varied in depth below ground surface (bgs) from just below the surface (1 foot bgs) adjacent to Santa Ana River to 128 feet bgs along the northern border of Eastvale. Groundwater levels were measured at around 35 feet bgs in areas adjacent to Mill Creek and Cucamonga Creek in spring of 2014 and spring of 2012-2014, respectively (DWR, 2016).

The Temescal Subbasin underlies the portion of the project alignment south of the Santa Ana River. The Santa Ana River and a set of low hills of crystalline rock near Norco mark the northern boundary of this Subbasin (DWR, 2006b). The eastern part of the subbasin is bounded by nonwater-bearing crystalline rocks of the El Sobrante de San Jacinto and La Sierra Hills (near Home Gardens). The subbasin is bounded on the west by the Santa Ana Mountains and the south by a constriction in the alluvium of Temescal Wash. Average annual precipitation ranges from 12 to 16 inches per year (Weatherbase, 2016; DWR, 2006b). Dominant recharge to the groundwater reservoir is from percolation of precipitation on the valley floor and infiltration of stream flow within tributaries exiting the surrounding mountains and hills (DWR, 2006b).

Groundwater levels measured by the USGS in Corona southwest of the Temescal Wash ranged from approximately 100 to 200 feet bgs between 2011 and 2015. Closer to the Prado Flood Control Basin boundary, groundwater was encountered at around 16 feet bgs when levels where

[2] The Holocene and Pleistocene are geologic epochs, indicating the age of the earth materials discussed. Holocene-age earth materials were deposited in the last 10,000 years, while Pleistocene-age materials were deposited between 2.6 and 0.01 million years ago.

highest (during spring of 2012). During geotechnical site investigations in 2012 at the Circle City Substation site, well borings up to 35 feet deep did not encounter groundwater (TDBU, 2012).

The flood plain behind Prado Dam has unique hydraulic characteristics. Flood control operations at the dam, coupled with an extremely shallow groundwater table and an unusually thin aquifer, significantly affect surface flows and subsurface flows in the area (RWQCB, 2008). Any groundwater in storage behind the dam is forced to the surface because the foot of Prado Dam extends to bedrock and subsurface flows cannot pass through the barrier created by the dam and the surrounding hills (RWQCB, 2008). Most of the rising Chino Basin groundwater in the Prado area is high in total dissolved solids (TDS), nitrate, and other constituents, largely reflecting heavy present and historic agricultural water use in the area (RWQCB, 2008).

Currently the City of Corona, which would supply water to the Circle City Substation, receives approximately 45 percent of its total water production from local groundwater. Corona operates wells in the Temescal, Bedford, and Coldwater groundwater subbasins. Of the 23 wells operated by the City of Corona, 18 wells are located in the Temescal Subbasin (City of Corona, 2004). The remaining 55 percent of Corona's water supply comes from the Colorado River Aqueduct and the State Water Project (City of Corona, 2004).

4.10.1.3 Water Quality

Surface and groundwater quality in the Santa Ana River Region are greatly influenced by historic and current land uses. Historic irrigated agriculture as well as municipal and industrial use of water increased the amount of mineralization (i.e., TDS) in the waters. TDS and nitrate concentrations are increased both by the reduction in total volume of return water (due to evapotranspiration) and by the direct application of these salts in fertilizers. Dairy operations, which began in the region in the 1950s and continue today, also contribute large amounts of salt to the basin (RWQCB, 2016). During non-storm periods the flow in the Santa Ana River is dominated by effluent from publically owned treatment works (RWQCB, 2010). The RWQCB has managed the Santa Ana River Region to control, in particular, TDS and nitrogen. High levels of TDS and nitrate adversely affect the uses of ground and surface waters in the region. The mineralization of the region's waters, and its impact on beneficial uses, remains a problem.

4.10.1.4 Regulatory Setting

Federal

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the United States Environmental Protection Agency (USEPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations. Multiple sections of the CWA apply to activities near or within surface or ground water.

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material to waters of the U.S., including wetlands (33 U.S.C. § 1344). The USACE issues site-specific individual or general (i.e., Nationwide) permits for such discharges.

All discharges to surface waters or groundwater within the state of California, which generally encompasses waters of the U.S. (as defined by the USACE), are currently subject to RWQCB regulatory jurisdiction. Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a certification that the discharge would comply with the applicable CWA provisions (33 U.S.C. § 1341). If a federal permit is required, such as a USACE Section 404 Nationwide Permit for dredge and fill discharges, the project proponent must also obtain a Water Quality Certification from the RWQCB.

Section 402(p) of the CWA regulates discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) Program. In California, NPDES permitting authority is delegated to and administered by the nine RWQCBs. In addition to their responsibility to issue and enforce compliance with NPDES permits, the RWQCBs are responsible for preparation and revision of the relevant regional Water Quality Control Plan, also known as the Basin Plan (discussed further under State regulations).

Section 303(d) of the CWA requires that each State identify water bodies or segments of water bodies that are "impaired" (i.e., do not meet one or more of the water quality standards established by the State, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology). USEPA must approve the 303(d) List before it is considered final. Inclusion of a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a Total Maximum Daily Load (TMDL) for that water body and a plan to control the associated pollutant/stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a water body can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. **Table 4.10-1** lists the impaired water bodies in the Project area, including the pollutants that cause the impairments, and the potential sources of the pollutants.

TABLE 4.10-1
303(D) LIST OF IMPAIRED WATER BODIES IN THE PROJECT VICINITY

Impaired Water Bodies	Pollutants	Potential Source Category
Cucamonga Creek Reach 1	Cadmium, Copper, Lead, Zinc	Source Unknown
	Coliform Bacteria	Unknown Nonpoint Source
Santa Ana River Reach 3 – Prado Dam to Mission Blvd. in Riverside	Copper, Lead	Source Unknown
	Pathogens	Dairies
Mill Creek (Prado Area)	Nutrients	Agriculture, Dairies
	Pathogens, Total Suspended Solids	Dairies
Chino Creek Reach 1a	Nutrients	Agriculture, Dairies
	Pathogens	Agriculture, Dairies, Urban Runoff/Storm Sewers
Temescal Creek Reach 1a and 1b	pH	Source Unknown

SOURCE: RWQCB, 2016.

Once a water body is placed on the 303(d) List of Water Quality Limited Segments, it remains on the list until a TMDL is adopted and the water quality standards are attained or there are sufficient data to demonstrate that water quality standards have been met and delisting should take place.

Federal Antidegradation Policy

The federal Antidegradation Policy, established in 1968 under Section 303 of the Clean Water Act, is designed to protect existing uses and water quality and national water resources. Implementation of antidegradation by the states is based on a set of procedures to be followed when evaluating activities that may impact the quality of the waters of the U.S. Antidegradation implementation is an integral component of a comprehensive approach to protecting and enhancing water quality of both surface water and groundwater.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) determines flood elevations and floodplain boundaries based on USACE studies. FEMA also distributes the flood insurance rate maps used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains.

Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations. Those regulations enable FEMA to require municipalities participating in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

The National Flood Insurance Program, which identifies the 100-year flood hazard area, sometimes further divides the one percent annual chance floodplain on a river into a floodway and floodway fringe (FEMA, 2014). The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights (FEMA, 2014). Figure 4.10-1 shows the flood hazard areas in the vicinity of the Project sites and alignments, described in greater detail above.

State

Porter-Cologne Water Quality Control Act

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine RWQCBs. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility of granting CWA NPDES permits and Waste Discharge Requirements (WDRs) for certain point-source and non-point discharges to waters. The Porter-Cologne Act allows the California SWRCB to adopt statewide Water Quality Control Plans and Basin Water Quality Control Plans, which serve as the legal, technical, and programmatic basis of water quality regulation statewide or for a particular region. The water quality control plans limit impacts on water quality from a variety of sources. The Basin Plan for the Santa Ana River and the relevant permits are described below in this section.

Water Quality Control Plan (Basin Plan)

The Water Quality Control Plan for the Santa Ana River Basin (or Basin Plan) establishes water quality objectives and beneficial uses for waters in the Santa Ana River basin. The Santa Ana RWQCB implements the Basin Plan. The Basin Plan (2008, with updates in February 2016) designates beneficial uses and water quality objectives for "waters of the State," including surface waters and groundwater, and includes programs of implementation to achieve the water quality objectives. A beneficial use is one of the various ways that water can be used for the benefit of people and/or wildlife. There are 20 beneficial uses recognized in the Santa Ana River Region. **Table 4.10-2** lists the beneficial uses that the Basin Plan has identified for the water bodies in the Project area.

TABLE 4.10-2
BENEFICIAL USES OF SANTA ANA RIVER AND APPLICABLE TRIBUTARIES

Water Body	Existing Beneficial Uses
Santa Ana River Reach 3 – Prado Dam to Mission Blvd. in Riverside	Agricultural Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, Rare Threatened or Endangered Species, Spawning Reproduction and Development
Cucamonga Creek Reach 1	Groundwater Recharge, Non-Contact Water Recreation, Limited Warm Freshwater Habitat, Wildlife Habitat, (Excepted from Municipal and Domestic Supply; Water Contact Recreation not attainable)
Mill Creek (Prado Area)	Contact Water Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, Threatened or Endangered Species (Except from Municipal and Domestic Supply)
Chino Creek Reach 1a	Contact Water Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, Spawning Reproduction and Development (Except from Municipal and Domestic Supply)
Temescal Creek Reaches 1a and 1b	Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat (Except from Municipal and Domestic Supply; Water Contact Recreation not attainable)
Temescal Creek Reach 2	Agricultural Supply, Industrial Service Supply, Groundwater Recharge, Water Contact Recreation, Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat (Except from Municipal and Domestic Supply)

SOURCE: RWQCB, 2016.

The beneficial uses that have been identified for the water bodies listed above are used to set water quality objectives for these water bodies in the Basin Plan. Where numerical objectives are specified, they generally represent the levels that will protect beneficial uses. In other cases, an objective may prohibit the discharge of specific substances, may tolerate natural or "background" levels of certain substances or characteristics but no increases over those values, or may express a limit in terms of not impacting other beneficial uses. An adverse effect or impact on a beneficial use occurs where there is an actual or threatened loss or impairment of that beneficial use.

General De Minimus Permit for Discharges to Surface Waters (Order No. R8-2009-0003)

The Santa Ana RWQCB adopted this Order for discharges to surface water of various types of wastes that pose an insignificant threat to water quality. The types of discharges regulated under this order include construction dewatering wastes (except stormwater dewatering at construction

sites, which is regulated under either the State's General Construction Activity permit or under an applicable Municipal Storm Sewer System permit), wastes associated with well installation, discharges from fire hydrant testing or flushing, swimming pool discharge, and other similar types of wastes that pose a de minimus threat to water quality yet technically must be regulated under waste discharge requirements. Discharges to inland surface waters, estuarine, and ocean waters within the Santa Ana Region are authorized under this permit. Each new discharger must submit an application for the proposed discharge at least 45 days before the start of the new discharge. The discharge specifications impose specific effluent limitations to assure that authorized discharges are not creating adverse impacts on receiving water quality. Discharge limitations established by this Order require authorized dischargers to compare effluent data, generated through routine monitoring, to effluent limitations. When adverse impacts are identified following exceedance of effluent limitation(s), and/or violation of discharge prohibitions and provisions, dischargers are either directed to mitigate impacts, discharge to sewer or stop the discharge, and/or to seek coverage under an individual NPDES permit.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities (Order 2009-0009-DWQ)

Construction activities disturbing 1 acre or more of land, or that disturb less than 1 acre but are part of a larger common plan of development of 1 or more acres, are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbing Activities (Construction General Permit). This General Permit requires that storm water discharges and authorized non-storm water discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards (identified in the Basin Plan).

The Construction General Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must be developed for the specific project type, location, and characteristics, and must be submitted to the SWRCB along with the permit application (a Notice of Intent) before construction begins. A SWPPP for linear and underground/overhead projects (such as the proposed Project) is designed to ensure that: 1) all pollutants and their sources are controlled; 2) all non-stormwater discharges are identified and either eliminated, controlled, or treated; 3) site best management practices (BMPs) result in the reduction or elimination of pollutants in stormwater and authorized non-stormwater discharges; and 4) post-construction stabilization BMPs are completed.

The SWPPP provides specific construction-related BMPs to prevent soil erosion and loss of topsoil. BMPs implemented could include, but would not be limited to: physical barriers to prevent erosion and sedimentation (boundary protection), construction of sedimentation basins, dewatering procedures, limitations on work periods during storm events, use of swales, protection of stockpiled materials and demolition waste management, and a variety of other measures that would substantially reduce or prevent erosion and runoff from occurring during construction. Post-construction requirements require that construction sites match pre-project hydrology conditions to ensure that the physical and biological integrity of aquatic ecosystems are sustained in their existing condition, unless the site is located within an area subject to the post-construction standards of an active Phase I or II municipal separate storm sewer system (MS4) permit that has

an approved stormwater management plan. The post-construction standards include structural and nonstructural control measures to ensure that all disturbed areas are stabilized, and to reduce pollutants in storm water discharges.

A SWPPP must be prepared before construction begins. Implementation of the SWPPP starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, which includes stabilization of all disturbed soils, the applicant must submit a Notice of Termination to the SWRCB notifying the agency that construction is completed. Monitoring, reporting, and training requirements for management of stormwater pollutants are also required under the permit. The disturbance to areas associated with construction of structures and facilities for a project would require coverage under a General Construction Permit.

NPDES Permits and Waste Discharge Requirements Applicable to the Project

Order Nos. R8-2010-0033 (NPDES No. CAS 618033) and R8-2010-0036 (NPDES No. CAS 618036) require~~s~~ co-permittees of ~~this~~ these Orders to be responsible for managing the Urban Runoff program within ~~its~~ their jurisdiction. Co-permittees of R8-2010-0033 are local agencies, including the Riverside County Flood Control and Water Conservation District, the County of Riverside, and other incorporated cities of Riverside County within the Santa Ana Region, including the cities of Corona, Eastvale, and Norco. Co-permittees of R8-2010-0036 are also local agencies, including San Bernardino County Flood Control District and the cities of Chino and Ontario. Co-permittees to ~~this~~ these Orders have multiple additional responsibilities, including maintaining adequate legal authority to control the contribution of pollutants to the MS4, implementing management programs and appropriate BMPs, seeking sufficient funding for urban runoff program management, and ensuring that applicants for encroachment permits for permanent connection to MS4 facilities are notified of their obligations to comply with Storm Water ordinances. Pursuant to ~~this~~ these permits, projects with certain characteristics that must seek discretionary approval of maps or permits from the co-permittees are required to prepare a Water Quality Management Plan (WQMP). As noted below in the *Local* regulations discussion, local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the California Public Utilities Commission's (CPUC) jurisdiction. The Project would not seek discretionary permits from local agencies; for this reason, the Project would not require preparation of a Water Quality Management Plan.

The co-permittees are also required to develop a Watershed Action Plan ~~(RBF Consulting, 2012)~~. One component of this Watershed Action Plan is the Hydromodification[3] Management Plan, which includes delineation of existing unarmored or soft-armored stream channels in the Permit Area that are identified to be vulnerable to hydromodification from development projects ~~(RBF Consulting, 2012)~~. As described in this permit, if all downstream conveyance channels from a

[3] Hydromodification is generally defined as changes in channel form associated with alterations in flow and sediment due to past or proposed future land-use alteration.

development site that drain to an adequate sump[4] are engineered and regularly maintained[5] to ensure design flow capacity, and no sensitive stream habitat areas will be affected, then the development would not result in significant effects to downstream channels and aquatic habitats (that is, would not cause a hydrologic condition of concern). As a means of streamlining management efforts, the Riverside County Flood Control and Water Conservation District (RCFCWCD) mapped areas that are not considered susceptible to hydromodification from development (RBF Consulting, 2012). The San Bernardino County Flood Control District has similarly mapped area not considered susceptible to hydromodification from development, and makes this information available on its Geodatabase.[6]

It is through the review and approval of project-specific WQMPs that the co-permittees ensure projects do not pose a hydrologic condition of concern. For this reason, SCE would not be required to determine whether a hydrologic conditions of concern would be created due to the Project. However, for purposes of this analysis, the hydromodification susceptibility information developed for the Watershed Action Plans is used to identify channels susceptible to hydromodification. Two segments of the proposed Mira Loma-Jefferson subtransmission line alignment traverse areas with potentially susceptible stream channels: one along River Road south of the Santa Ana River corridor, and another in the vicinity of Mill Creek along the border of Riverside and San Bernardino counties (RBF Consulting, 2012, RBF Consulting, 2011; San Bernardino County Department of Public Works, 2018).

California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake under the jurisdiction of the California Department of Fish and Wildlife (CDFW). Project plans that are sufficient to indicate the nature of a project for construction must be submitted to CDFW if the project would:

- substantially divert, obstruct, or change a streambed;
- use material from the streambeds; or
- result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement that can flow into a stream.

For projects affecting the bed, bank, or flow of water under CDFW jurisdiction, applicants must submit a notification of lake or streambed alteration to CDFW. The department may issue an agreement if its staff members determine that the activity may substantially adversely affect fish and wildlife resources.

---

4 An adequate sump is a large river, reservoir, or basin that provides significant regional flood protection for the downstream watershed areas and mitigates flows such that any new development or significant redevelopment project upstream will not cause a significant change in the downstream flow conditions. The MS4 permit identifies Prado Dam, Lake Elsinore, Canyon Lake, and the Santa Ana River as adequate sumps.

5 Defined as a stream channel facility constructed for storm water conveyance that is owned and maintained by a responsible agency and is not susceptible to adverse impacts from hydromodification.

6 The Geodatabase (also called the Stormwater Facility Tracking Tool) is available online at http://permitrack.sbcounty.gov/WAP/.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014, effective January 1, 2015, gives local agencies the authority to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources. The SGMA establishes a definition of sustainable groundwater management, establishes a framework for local agencies to develop plans and implement strategies to sustainably manage groundwater resources, prioritizes basins with the greatest problems (ranked as high- and medium-priority) and sets a 20-year timeline for implementation (Water Education Foundation, 2015). The initial basin prioritization under SGMA uses the prioritization conducted by the California Department of Water Resources (DWR) in 2014 under the California Statewide Groundwater Elevation Monitoring program. The Temescal subbasin is ranked as medium-priority (DWR, 2014). Development of a Groundwater Sustainability Plan is not required for the Chino subbasin because it is adjudicated (Water Education Foundation, 2015).

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the proposed Project. Pursuant to CPUC General Order (G.O.) 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

Riverside County General Plan

The Riverside County General Plan contains multiple policies related to hydrologic hazards. Relevant policies include:

> *Policy S 4.2a*: All residential, commercial and industrial structures shall be flood-proofed from the 100-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement.
>
> *Policy S 4.4a*: Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.
>
> *Policy S 4.4b*: Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge.

City of Chino General Plan

The Project alignment along the border of Riverside and San Bernardino counties, in Chino, would be built in the Prado Dam Inundation Area once the reservoir area behind Prado Dam is

increased. The Chino General Plan identifies the following policy regarding the Prado Dam Inundation Area:

> *Policy P1*: The City shall continue to allow only those uses below the 566-foot inundation line that are approved by the Army Corps of Engineers.

City of Corona General Plan

The Corona General Plan includes multiple flood control policies, listed below.

> *Policy 7.6.4:* Monitor demands on the stormwater system and manage development to mitigate impacts and/or facilitate improvements to the storm drainage system.
>
> *Policy 7.6.5:* Ensure the provision of storm water conveyance and storage control facilities to be constructed coincident with new development.
>
> *Policy 7.6.6:* Require new development to prepare hydrologic studies to assess storm runoff impacts on the local and sub regional storm drainage systems, and, if warranted, require new development to provide adequate drainage facilities and to mitigate increases in stormwater flows and/or cumulative increases in regional flows. Developers of proposed projects are to submit a final drainage plan for the City Engineer's review and approva1.

The Corona General Plan also includes water quality policies. These policies include:

> *Policy 7.7.3*, which requires new developments to minimize impervious areas that are connected to piped or channelized drainage systems; and
>
> *Policy 7.7.7*, which requires developers to obtain a NPDES permit prior to moving construction equipment onto a development site.

City of Norco Municipal Code

The City of Norco Municipal Code specifies that proof of compliance with NPDES General Permits (such as the Construction Activity General Permit) may be required in a form acceptable to the City Engineer prior to issuance of any City grading, building, or occupancy permits.[7]

City of Eastvale General Plan

The City of Eastvale General Plan includes multiple policies related to flood and inundation hazards. These include:

> *Policy S-4*: Development in floodplains or floodways shall not obstruct flows or adversely affect upstream or downstream properties with increased floodwater volumes, velocities, erosion backwater effects, or concentrations of flows.
>
> *Policy S-5*: Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access.

---

7 Norco Municipal Code Section 15.70.100 et seq.

Policy S-6: All residential, commercial, and industrial structures shall be flood-proofed from the 200-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement.

Policy S-7: Critical facilities should be constructed at an elevation to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies.

City of Ontario General Plan

The City of Ontario General Plan includes the following policy related to flood hazards:

Policy S2-4: We prohibit the development of new essential and critical facilities in the 100-year floodplain.

The Ontario General Plan also includes the following policies related to water quality, listed below,

Policy ER1-7: We require the control and management of urban run-off, consistent with Regional Water Quality Control Board regulations.

4.10.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant hydrology and water quality effects on the environment if it would:

a) Violate any water quality standards or waste discharge requirements;

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

c) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site;

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

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or

j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

4.10.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts on hydrology and water quality.

4.10.4 Impacts and Mitigation Measures

4.10.4.1 Approach to Analysis

This impact discussion assesses impacts on hydrology and water quality based on the potential for the Project to result in physical hydrologic or hydrogeologic changes during construction or operation, using existing site conditions as a baseline for comparison. While land disturbance associated with Project activity would progress along the Project alignments and may not occur at one time, for purposes of this analysis it is assumed that total land disturbance would occur at once. As the Project would disturb more than 1 acre of land, the Project includes preparation of a SWPPP and implementation of BMPs in accordance with requirements of the Construction General Permit (described above in Section 4.10.2).

a) Violate any water quality standards or waste discharge requirements?

f) Otherwise substantially degrade water quality?

Impact 4.10-1: The Project would discharge stormwater and groundwater in compliance with water quality standards. *Less than significant* (Class III)

Construction-related Stormwater Discharges

During construction, the Project would disturb more than one acre of land along the Project alignment. As required under the Construction General Permit and discussed in Section 4.10.2, above, and *Chapter 2, Project Description*, SCE or its contractor would prepare a SWPPP containing BMPs selected to reduce potential releases of water quality pollutants (such as sediment, oils, and refuse) during construction of all facilities, including Circle City Substation, pole installation sites, underground conduit/vaults, and access roads. Construction staging yards and work areas would be graded such that water would run toward the direction of the natural drainage. Construction of access roads may include cut and fill slopes, benched grading, drainage, and erosion control improvements, and slope stability improvements. All of these activities would require coverage under the Construction General Permit. SCE would also prepare and implement a Hazardous Materials Management Plan (pursuant to APM HAZ-01) during construction, which would outline hazardous material handling, use, and storage requirements as well as include procedures to implement in the case of hazardous material release. Personnel would be trained on the individual responsibilities under the Clean Water Act, the SWPPP, site-specific BMPs, the locations of Material Safety Data Sheets for the project, and steps to take in case of a hazardous

materials spill or leak or the discovery of groundwater contamination. Implementation of this Plan, along with the best management practices identified in the SWPPP, would reduce the potential for water quality degradation during Project construction to less-than-significant levels.

Once excavation and other construction activities are complete, SCE would fill pits or foundation holes left by relocated facilities and regrade construction areas to match the surrounding grade as described in Section 2.6.6.1, *Removal of Existing Structures*. This would replicate the pre-Project drainage pattern, reducing the risk of affecting water quality once construction is complete. Post-construction stormwater performance standards in the Construction General Permit would also apply to the Project, as it is not within the jurisdiction of local agencies. These post-construction performance standards aim to stabilize all disturbed areas and protect water quality. All areas within which the SWPPP applies would thus be restored to meet these requirements to result in less-than-significant impacts.

Construction workers would generate wastewater over the approximately 18-month construction duration of the proposed Project. However, the minimal amount of wastewater generated during the construction period would be contained within portable restrooms and treated and disposed of by a licensed contractor. No wastewater would be discharged from the site.

Compliance with the Construction General Stormwater Permit, including the associated permit enforcement requirements, would ensure that water quality impacts due to discharge of construction-related stormwater runoff to nearby surface waters would be less than significant.

Groundwater Dewatering During Construction

Construction activities would include excavation for poles, foundations, vaults, and duct bank installations as well as excavation required for construction of the Circle City Substation. Excavation depths would range from 5 feet below ground surface for underground duct bank trenching to 50 feet below ground surface for H-frame augering. In the southern portion of the Project area, depths of groundwater are such that the potential to encounter groundwater during excavation is low; however, shallower groundwater levels have been recorded in the vicinity of the Prado Basin and Santa Ana River. Groundwater could be encountered during excavation in these shallower groundwater level areas. Also, during construction of the tubular steel pole foundations in areas of soft soil or below the groundwater table, mud slurry would be used to prevent sidewalls from sloughing and then would be displaced by concrete as foundations are poured. The displaced slurry would be collected in a pit adjacent to the foundation or vacuumed into a truck and then pumped out to be reused or discarded at an appropriate offsite disposal facility. Dewatering and control of concrete and mud slurry would be reviewed during preparation of the SWPPP and BMPs designed to control the release of mud slurry along with other potential water quality pollutants into the environment. The SWPPP and BMPs would be implemented in accordance with the Construction General Permit requirements.

SCE has indicated that groundwater encountered during excavation would either be dispersed onsite or disposed of at a licensed facility if the groundwater is suspected of being contaminated

or degraded.[8] To disperse pumped groundwater during construction onsite, SCE would be required to obtain coverage under the General De Minimus Permit for Discharges to Surface Waters (Order No. R8-2009-0003) from the Santa Ana RWQCB. To secure coverage for groundwater dewatering under this permit, an application prepared by new dischargers must include a site characterization study at least 45 days prior to the start of new discharge to identify the potential for the dewatered groundwater to contain contaminants, as well as a report that characterizes the constituents in the groundwater, the amount of water to be discharged, the location(s) of discharge, a description of any proposed treatment technology, the affected receiving water, and the path from the point(s) of discharge to the receiving water(s). Coverage under this permit also includes requirements for pumped groundwater (effluent) monitoring, and specifies actions SCE would take if effluent characteristics do not meet the limitations identified in this general permit, including routing effluent to the sewer system or otherwise mitigating the effects of effluent limitation exceedances.

Compliance with the De Minimus Permit, including the associated permit enforcement requirements, would ensure that water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related pumped groundwater to nearby surface waters would be less than significant.

Project Operations

While the City of Corona is a co-permittee of the NPDES Permit and WDRs for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region Area-Wide Urban Runoff Management Program (Order No. R8-2010-0033), this Order would not apply to the development of the proposed Circle City Substation because local agency review would not include discretionary actions (such as issuing a subdivision map or a discretionary permit). However, prior to construction, SCE would prepare final engineering drawings for grading and drainage at the substation site, and submit these drawings to the City of Corona to obtain a ministerial grading permit if required. If required by the City of Corona, an approximately 700-foot extension of the existing storm drain system in the form of surface swales would be installed to discharge stormwater from the Circle City Substation site and accept flows to Leeson Lane, where a catch basin would be installed. SCE has indicated that an alternative to the surface swales would include the installation of an approximately 1,300-foot-long buried drain pipe through the eastern access corridor. A collection basin or headwall would also be required in the substation property's southeast corner to direct off-site drainage into the applicable drainage improvements.

The aboveground transformers at the proposed Circle City Substation would contain mineral oil in excess of 1,320 gallons. As such, there would be a potential for hazardous oil to leak. In order to minimize impacts associated with potential hazardous leaks, the proposed Circle City Substation would include a secondary containment system to prevent an oil leak and/or spill from entering any nearby waterways. The containment facilities are described further in Chapter 2,

[8] Data Request Set A1512007 ED-SCE-02 Response to Question 28 "Should groundwater be encountered, SCE would disperse it on site, or dispose of it at a licensed facility if the groundwater is suspected of being contaminated or degraded. The following facilities accept water: DeMenno/Kerdoon (2000 N. Alameda Street Compton, CA 90222) and Crosby & Overton (1610 W. 17th Street Long Beach, CA 90813)."

Project Description and Section 4.9, *Hazards and Hazardous Materials*. As discussed in Section 4.9, a spill prevention, control, and countermeasures plan describing spill prevention measures would also be implemented in compliance with the Aboveground Petroleum Storage Act of 1990. Due to the installation of containment facilities, an accidental spill would be contained on site and would not result in a water quality violation related to contaminated stormwater. Impacts associated with long-term stormwater discharges from the proposed Circle City Substation site would be less than significant.

In addition to the project components at the Circle City Substation, new permanent access roads would be constructed in two locations: along the Project alignment just south of the Mira Loma substation, and extending into the Santa Ana River corridor from the north to the location of the northern H-frame. One new access road would be built in an area draining to Cucamonga Creek, the other would drain to the Santa Ana River. Consistent with applicable General Orders (95 and 128), during Project operation SCE would conduct annual inspections of the source lines, the Mira Loma-Jefferson subtransmission line, and the telecommunication facilities. Access roads could be used during these inspections and during maintenance activities. The Santa Ana RWQCB has indicated that low-impact development BMPs included in a WQMP would treat discharges from urban stormwater pollutants, including 303(d) listed pollutants (such as sediments, oil and grease, and metals that could be released by maintenance vehicle use of these access roads) such that a project implementing these BMPs would not cause or contribute to an exceedance of receiving water quality objectives (RWQCB, 2012). While the Project would not be required to prepare a WQMP, as part of the post-construction requirements in the Construction General Permit SCE would be required to implement BMPs similar to those required in a WQMP, such as impervious area disconnection and vegetated swales, which would encourage runoff infiltration or otherwise reduce net loading of sediment or polluted runoff to water bodies (SWRCB, 2016). Implementation of post-construction requirements that encourage infiltration of runoff from the access roads would effectively control water quality pollutants such that operation and maintenance of the proposed Project would result in less-than-significant impacts to water quality and waste discharge.

Mitigation: None required.

---

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

Impact 4.10-2: The Project would result in discharge and use of groundwater. *Less than significant* (Class III)

Construction

As described above in Impact 4.10-1, groundwater could be encountered during construction at the Project sites and in areas along the proposed alignments, and groundwater encountered would

be pumped and dispersed onsite or disposed of at an off-site disposal facility, in accordance with applicable laws, including the General De Minimus Permit from the Santa Ana RWQCB (Order No. R8-2009-0003). The Project-specific SWPPP would also include BMPs addressing dewatering, designed to ensure the dewatering occurs in compliance with RWQCB permits and that dewatering discharges do not cause erosion at the discharge point. Groundwater recharge in the region occurs via direct infiltration into or precipitation on the valley floor sediments, in which the Project would be constructed. When conducted in compliance with RWQCB permits, dispersion of pumped groundwater onto surface areas near construction sites would effectively replace the groundwater removed, resulting in no net change in aquifer volume or groundwater table level. If groundwater is disposed of at an off-site facility, groundwater would be removed but the impact would be temporary relative to the annual cycle of precipitation and insignificant given the duration of construction (18 months) and excavation depths. Impacts to groundwater supplies would therefore be less than significant.

Staging yards of varying size in up to seven locations would be cleared of vegetation and/or graded, then compacted to 90 percent relative density. Gravel or crushed rock may also be placed on the staging yards; however, none of the staging yards or work areas would be newly paved for construction use. No new impervious surfaces would be constructed for use solely during construction (all new impervious surfaces are addressed below under Operation); thus, construction activities would not substantially interfere with groundwater recharge.

Operation

Once operational, the Project would require limited amounts of water to support occasional restroom use at the Circle City Substation (the substation would not be manned). Groundwater provides 45 percent of the City of Corona's water supply. SCE would apply to the City of Corona for water service at the Circle City Substation, and would not install any wells. The Temescal Subbasin is not an adjudicated groundwater basin, nor is it identified as critically overdrafted by the DWR. Due to the limited water use expected (as discussed in Section 4.18, Utilities and Service Systems), the Project's long-term impact on groundwater supplies would be less than significant.

If required by the City of Corona, stormwater drainage features in the form of either surface swales or a buried drainage pipe would be installed along the eastern side of the Circle City Substation site. To the extent that these features capture and route stormwater offsite, the amount of water infiltrating into the groundwater system would be reduced by the Project; however, the site would not be paved but instead covered with crushed rock, which would be relatively permeable and thus would not redirect stormwater to the drainage features such that substantial interference with groundwater recharge would occur and affect the elevation of the groundwater table.

As part of the Project, 13.2 acres of access roadway would be constructed or replaced, some of which would be paved. Paved portions of access roads would intercept precipitation and reduce groundwater recharge if the water is conveyed from the roadways to armored or culverted stormwater collection facilities or pipes. Access roads would include drains to culverts that may drain directly to these impervious channels, intercepting water that otherwise would have

infiltrated into the groundwater. However, as part of the post-construction requirements in the Construction General Permit, SCE would be required to replicate the pre-project water balance (the amount of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event; and for areas greater than 2 acres, pre-construction drainage density shall be preserved. The types of practices identified in the Construction General Permit that can be used to achieve these post-construction performance standards include impervious area disconnection and vegetated swales, which would encourage runoff infiltration. Implementation of post-construction requirements that encourage infiltration of runoff from new impervious surfaces would reduce the impact of new and replacement access roads to a less-than-significant level.

Mitigation: None required.

---

c) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site;

Impact 4.10-3: The Project would temporarily alter drainage patterns, including in the Santa Ana River, and would permanently alter drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation. *Less than significant* (Class III)

Alteration of the drainage pattern in an area can cause substantial on- or off-site erosion in multiple ways. Increasing drainage density (such as building a series of stormwater drains or other small drainage features to drain an area previously drained by one or two streams) and increasing hydraulic efficiency (by creating impervious surfaces, constructing concrete channels/culverts, diverting surface water into pipes, or otherwise increasing the rate at which surface water drains from an area) result in more frequent and more voluminous bankfull discharges because more water arrives in downstream channels at once. Increased discharge has relatively greater power to erode a channel, and will generally cause channel degradation by incision (deepening) of the channel as well as by bank erosion. Development that reduces the amount and size of sediment delivered to surface streams also results in channel erosion. Development activities can also result in channel aggradation (sediment buildup). During construction, if sediment at the construction site is not adequately protected from surface runoff, the sediment loads delivered to downstream water bodies can increase substantially and cause aggradation. These unmitigated high volumes and velocities of discharges from stormwater facilities associated with new development into natural watercourses from developed areas without needed controls can alter the natural rate of change of a stream and may cause stream bank erosion and physical modifications (RBF Consulting, 2012).

Circle City Substation

Construction of the Circle City Substation would include grading and other earthmoving activities that would alter the existing drainage pattern across the site, which slopes very gently down to the north. No streams or rivers cross the site. As discussed under Impact 4.10-1, SCE would be required to implement SWPPP BMPs at the Project construction sites, including at the Circle City

Substation site, that would serve to reduce the amount of sediment eroded by surface waters. By protecting the construction site from erosion, as well as by controlling the flow of storm water across the construction area, the BMPs would reduce the impacts of construction on the drainage pattern of the site to less-than-significant levels.

At the end of construction, the Circle City Substation site would be graded to maintain a one percent slope to drain to the north, similar to the existing site topography. The Project may also include stormwater management features if required by the City of Corona, including either surface swales with a standard catch basin or a buried drain pipe to collect stormwater, and a collection basin or headwall at the southeast corner of the property to direct offsite drainage to the applicable drainage improvements. A proposed 8-foot-high perimeter wall would be constructed around the substation. A detention or retention basin just north and/or south of the perimeter wall would be included if needed to control site drainage. A paved road would be built to access the substation, along with the approximately 4-acre substation facility on the currently disturbed and partially paved site. These features would affect the drainage pattern of the site, but generally in ways designed to compensate for the creation of impervious surface at the site. For example, the detention or retention basin(s) along the northern and/or southern sides of the perimeter wall would collect and control the movement of stormwater runoff such that the time of concentration would not be reduced (by slowing down the water such that it does not contribute to erosive storm flows in downstream channels). In addition, the Circle City Substation is within an area mapped as draining to channels not susceptible to hydromodification (RBF Consulting, 2012). Stormwater drainage from the Circle City Substation would flow through engineered and maintained conveyance facilities to the Santa Ana River, an adequate sump. Long-term impacts of operation on the drainage pattern of the site would be less than significant.

Linear Facilities

Construction of the proposed linear Project facilities, such as the source lines, Mira Loma-Jefferson subtransmission line, and distribution getaways, would temporarily alter drainage patterns across the construction areas, including activity in the Santa Ana River corridor during construction and installation of two H-frames and ~~one~~ eleven light-weight steel (LWS) poles. While many of the streams in the area are dry most of the year, if construction activities or earthwork occur in the Santa Ana River channel during periods when water would be present, construction activities could displace water flows, potentially causing erosion and sedimentation in the channel. Similar to construction at the Circle City Substation, SCE would implement SWPPP BMPs at Project construction sites along the linear facilities (subtransmission lines, duct bank systems, vaults, etc.) that would serve to reduce the amount of sediment eroded by surface waters and would control stormwater such that potential erosion and sedimentation on- and offsite would be reduced. The SWPPP would also apply to construction staging areas, construction of access roads, and former sites of relocated facilities. Staging yards and work areas would be graded such that water would run toward the direction of natural drainage, and drainage would be designed to prevent ponding and erosive water flows, which would further reduce the effect of construction on drainage patterns.

Dewatering may be required during construction, and SCE proposes to disperse this water onsite or, if contaminated, to pump the groundwater and haul it to licensed locations for treatment.

Dispersion on site could result in on- or off-site erosion and sedimentation if it would occur in an uncontrolled manner; however, as described in Impacts 4.10-1 and 4.10-2, SCE would be required to secure a De Minimus Permit in addition to preparing a SWPPP in compliance with the Construction General Permit, which would include erosion and sediment control provisions protective of water quality. Compliance with permit conditions would reduce the impact of dispersion of groundwater to less-than-significant levels.

Because most of the proposed linear facilities would replace existing facilities and/or would be installed within roadway ROWs, the linear facilities generally would not alter nearby drainage patterns, including the two LWS poles and two H-frame structures associated with the proposed Mira Loma-Jefferson subtransmission line that would replace the existing structures within or along the banks of the Santa Ana River channel. The segment of the proposed subtransmission line that would have poles within areas mapped as draining to channels susceptible to hydromodification would replace existing poles or structures and would not create new impervious surface. Sites of removed structures would be compacted and smoothed to match the surrounding grade. The aspects of the Project that would result in altered drainage patterns include new paving of driveway approaches for ingress/egress between paved and unpaved access roads, new paved access roads, and portions of the ROW surrounding new poles or towers cleared of vegetation. In addition, repair or other maintenance of the proposed facilities could occur in undisturbed areas, temporarily altering local runoff patterns. New access and spur roads created for the Project would result in a total of 13.2 acres of new impervious area, but would not traverse any existing stream channels. The new and improved access roads would be within areas mapped as draining to channels not susceptible to hydromodification. In addition, as part of the post-construction requirements in the Construction General Permit, SCE would be required to, at a minimum, stabilize all disturbed areas such that erosion does not result in water quality degradation. For these reasons, erosion and sedimentation impacts from permanent alterations of drainage patterns associated with linear Project facilities would be less than significant.

Mitigation: None required.

---

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

Impact 4.10-4: The Project would alter existing drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation, which could result in flooding. *Less than significant* (Class III)

As discussed above in Impacts 4.10-1 and 4.10-2, during construction of Project facilities SCE would implement SWPPP BMPs to control surface runoff and to reduce effects of alteration of stream flows near the H-frames in the Santa Ana River during temporary ground disturbance. Implementation of the BMPs would reduce the potential for Project activities to affect surrounding drainage patterns, thus reducing the likelihood of on- or offsite changes in flooding potential.

Proposed Access Roads

As discussed above in Impact 4.10-3, the Project would permanently disturb approximately 13.2 acres by constructing roads and driveways and clearing vegetation. For the purposes of this analysis it is assumed that these permanently disturbed areas would be impervious. Increasing the amount of impervious surface exacerbates flood risk, since runoff and precipitation cannot infiltrate into the ground. Pre- and post-development runoff rates, volumes, and peak discharges have not been calculated for the Project; this analysis is limited to a qualitative discussion of changes to surface runoff associated with the Project. Permanent access roads would increase impervious surface area along the Project alignment and would be expected to increase runoff locally. However, the Project does not include construction of substantial areas of directly connected impervious surface and new roadways would not traverse existing stream channels. All temporary access roads, permanent access roads, and existing access roads to be improved would be located adjacent to undeveloped areas and would include stormwater management features designed to control runoff (such as berms, drains to culverts, and over-side drains). New permanent access roads would be constructed in two locations: along the Project alignment just south of the Mira Loma Substation, and extending into the Santa Ana River corridor from the north to the location of the northern H-frame. The vicinity of the access road near the Mira Loma Substation drains to channels considered not susceptible to hydromodification (and thus not susceptible to associated changes in runoff conveyance capacity). The Santa Ana River is considered an adequate sump and therefore the addition of runoff from the access road would not affect the conveyance capacity of the river. Further, as part of the post-construction requirements in the Construction General Permit, SCE would be required to, at a minimum, stabilize all disturbed areas to minimize post-construction changes in drainage patterns. Therefore, the proposed access roads would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. The impact would be less than significant.

Circle City Substation

The Circle City Substation site would include stormwater detention and/or retention features, which would reduce (or counteract) the effect of the newly created impervious surface by reducing the peak flow volume leaving the site during storm events. Should the City of Corona require it, the paved areas created by the Project (at the Circle City Substation and the access roads to the site) would collect stormwater into new pipelines and/or collection basins, draining to the engineered and maintained Temescal Wash. Because the impervious areas created by the Project north of the Circle City Substation would not substantially alter runoff generation, and because SCE would work with the City of Corona to ensure stormwater collected at the Circle City Substation is adequately collected and routed to engineered and maintained facilities, the alteration of drainage patterns resulting from the Project would have a less-than-significant impact related to on- or offsite flooding.

Mitigation: None required.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (No Impact)

There is no potential for the proposed Project to impact stormwater drainage systems or provide additional sources of polluted runoff not addressed in the context of the other criteria. All potential impacts concerning runoff and erosion resulting from implementation of the Project are addressed under criteria a), c), d) and f). (No Impact)

---

f) Otherwise substantially degrade water quality?

This impact criterion is combined with and addressed above under criterion a).

---

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (No Impact).

The Project would not include construction of any new housing. Therefore, no impact would occur.

---

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Impact 4.10-5: The Project would place structures within the 100-year flood hazard area. *Less than significant* (Class III)

The Project would include the replacement of existing H-frames and LWS poles in the Santa Ana River corridor, which is within the 100-year floodplain (see Figure 4.10-1). No other Project facilities would be located within the 100-year floodplain. Because the H-frame structures and LWS poles would replace existing structures and poles, the Project would not substantially increase impedance of flood flows, and the impact would be less than significant.

Mitigation: None required.

---

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Impact 4.10-6: The Project could expose construction workers to flooding in the event of dam failure. *Less than significant* (Class III)

The Project would not affect existing levees, dams, or other flood control mechanisms, nor would it affect the potential for significant risk of loss, injury, or death resulting from flooding. The

Project would not include work that could jeopardize the function or safety of existing dams, levees, or other flood control devices.

Since the Project would not involve impacts to an existing dam or other flood control mechanism, workers would only be exposed to any risk involving flooding in the event of an actual dam failure. Construction activities would temporarily bring workers into the inundation area of the dams impounding Lake Mathews. Since the dam is 1.5 miles away from the Project site, there would be some time to be warned of a failure at Mathews Dam and workers would be able to move to higher ground or move outside of the inundation area. Inundation from the dam would be 40 minutes to Corona city limits (City of Corona, 2004). In the event of a dam failure, the inundation zone widens before entering the Project area, thereby reducing the depth of the water and resulting potential for damage or injury within the Project site. In addition, workers would only have the potential for exposure for the period of time they would be working on that particular section of the proposed Mira Loma-Jefferson subtransmission line, Pedley Source Lines, and Databank Source Lines in the vicinity of Temescal Wash. The impact would be less than significant because the risk of loss, injury, or death as a result of dam failure would not substantially increase during construction given the distance between the construction areas and Lake Mathews, the relatively small area of exposure, and the relatively short period of time workers would actually be in that potential inundation zone.

Mitigation: None required.

---

j) Inundation by seiche, tsunami, or mudflow.

Impact 4.10-7: The Project could expose workers to potential mudflows in the case of dam failure. *Less than significant* (Class III)

The Project would not result in inundation by seiche, tsunami, or mudflow. Seiches are waves in a semi-enclosed or enclosed body of water such as a lake, reservoir, or harbor. There are no enclosed water bodies within the project area. Tsunamis are waves caused by an underwater earthquake, landslide, or volcanic eruption. The Project area is located in an inland area that is not susceptible to tsunamis, which generally occur in areas along the shoreline and for a small distance inland. Mudflows generally result from volcanic activity, catastrophic dam failure, or a large volume precipitation event on saturated soils. The Project would not be located in an area of volcanic activity. As discussed above in criteria i), the Project would exacerbate the existing mudflow hazard by temporarily bringing workers into the inundation area of the dams impounding Lake Mathews; however, the Project area is 1.5 miles from the nearest dam, and the period of worker exposure to the hazard would be of limited duration. For these reasons, the impact would be less than significant.

Mitigation: None required.

4.10.5 Alternatives

4.10.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts to hydrology and water quality that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, would not occur. Therefore, there would be no impact under the No Project Alternative (No Impact).

4.10.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Alternative B would include construction and operation of the Mira Loma-Jefferson 66 kV Subtransmission Line and associated facilities as proposed, but would not include construction and operation of the proposed Circle City Substation or its associated facilities. The impacts associated with hydrology and water quality would be the same as those identified for the proposed facilities, but reduced due to the smaller total area of ground disturbance, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. Plans SCE would implement to control water contaminants during construction (such as the SWPPP, BMPs, and the Hazardous Materials Management Plan) would ensure that water quality degradation impacts would be less than significant (Impact 4.10-1; Class III).

Construction and operation impacts on groundwater would be reduced compared to those under the proposed Project given the reduced impervious surface area under this alternative and implementation of dewatering permit requirements (Impact 4.10-2; Class III).

A reduced amount of land disturbance would occur with this alternative and the disturbed areas would drain to channels not susceptible to hydromodification. The total area of impervious surface created by Alternative B would be reduced compared to that of the proposed Project. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements including applicable stormwater controls during construction and for post-construction ground stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns at and near the sites (Impact 4.10-3; Class III).

Impervious access roads would include stormwater management features designed to control runoff, and these features would drain to channels whose conveyance capacity would not be substantially altered by this alternative, similar to as discussed above in Impact 4.10-4.

Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity would be less than significant (Class III), and that this alternative would not contribute substantial amounts of additional polluted runoff to stormwater.

Same as the proposed Project, activities associated with the replacement of existing H-frames and LWS poles in the Santa Ana River corridor would be within a 100-year floodplain; however, these activities would not substantially increase impedance of flood flows and the associated impact would be less than significant (Impact 4.10-5; Class II). This alternative would result in fewer workers being exposed to flooding because the substation source lines would not be constructed; however, workers along the Mira Loma-Jefferson subtransmission line alignment in the vicinity of the Temescal Wash would be exposed to flooding and mudflow in the event that a dam on Lake Mathews fails. These impacts are considered less than significant (Impact 4.10-6 and 4.10-7; Class III).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 differs from the proposed Mira Loma-Jefferson subtransmission line in that it includes a half-mile-long underground conduit installation within Hellman Avenue from its intersection with American Heroes Park to its intersection with Pine Avenue/Schleisman Road. This alternative would result in more excavation than estimated for the proposed Project. Due to the depth to groundwater in the area and proposed shallow depth of excavation, it is unlikely that groundwater would be encountered that would require dewatering measures. However, if dewatering is required this alternative could result in a relatively larger impact on groundwater depletion compared to the proposed Project if the pumped water is not allowed to infiltrate near the site of excavation due to restrictions with permits or encountering contaminated groundwater (Impact 4.10-2; Class III). The greater extent of excavation would increase the total area potentially exposed to erosion due to increased ground disturbance relative to the proposed Project; however, this additional potential impact on water quality and drainage patterns would remain less than significant with implementation of the Construction General Permit BMPs (Impacts 4.10-1, 4.10-3, and 4.10-4; Class III). All the other construction, operation, and maintenance-related impacts to hydrology and water quality that would result from implementation of Alternative C1 would be the same as those that would result under the proposed Project (Impacts 4.10-5 through 4.10-7; Class III), as discussed in Section 4.10.4, *Impacts and Mitigation Measures*.

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 differs from the proposed Mira Loma-Jefferson subtransmission line in that it consists of an underground and overhead line extending, instead of along Hellman Road, south along Archibald Avenue, crossing the Santa Ana River, continuing south to the intersection of Corydon Avenue and River Road. For purposes of this analysis it is assumed that similar temporary and permanent access roads (and road improvements) would be required as part of this alternative. It is also assumed that between Archibald Avenue (the northwest bank of the Santa Ana River) and Bluff Street (the southeast bank of the Santa Ana River) SCE would replace the existing towers in the Santa Ana River corridor. Under Alternative C2, construction, operation, and maintenance-related impacts to hydrology and water quality that would result from

implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

The greater extent of excavation under this alternative would increase the total area potentially exposed to erosion due to increased ground disturbance relative to the proposed Project. Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. The plans (such as the SWPPP, BMPs, and the Hazardous Materials Management Plan) SCE would implement to control water contaminants during construction would ensure that the potential for substantial water quality degradation impacts would be less than significant (Impact 4.10-1; Class III). Stormwater along this alternative alignment would not drain to any channels on the 303(d) List of Water Quality Limited Segments north of the Santa Ana River.

This alternative would result in more excavation that may require groundwater dewatering compared to the proposed Project. Due to the depth to groundwater in the area and proposed shallow depth of excavation, it is unlikely that groundwater would be encountered that would require dewatering measures. However, if dewatering is required this alternative could result in a relatively larger impact on groundwater depletion compared to the proposed Project if the pumped water is not allowed to infiltrate near the site of excavation due to restrictions with permits or encountering contaminated groundwater. The same dewatering permit requirements would apply as would apply for the proposed Project, however, so the impact would remain less than significant (Impact 4.10-2; Class III). Operation impacts on groundwater would be similar to those under the proposed Project, as similar amounts of impervious surface would be created (Impact 4.10-2; Class III).

Similar to the proposed Project, the areas disturbed under this alternative would drain to channels not susceptible to hydromodification. The total area of impervious surface created by Alternative C2 would be similar to that of the proposed Mira Loma-Jefferson subtransmission line, and the individual impervious areas would be disconnected. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements, including requirements both for stormwater controls during construction and for post-construction site stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns along the alternative alignment (Impact 4.10-3; Class III).

The subtransmission line alignment north of the Santa Ana River would result in ground disturbance in areas mapped as draining to channels not susceptible to hydromodification (RBF Consulting, 2012). Impervious access roads would include stormwater management features designed to control runoff, and these features would drain to channels whose conveyance capacity would not be substantially altered by this alternative, as the channels are not susceptible to hydromodification. Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity are less than significant (Impact 4.10-4; Class III), and that this alternative would not contribute substantial amounts of additional polluted runoff to stormwater.

This alternative would include the replacement of existing towers within a 100-year floodplain in the Santa Ana River corridor. Because the new towers would replace existing towers, this alternative would not create newly impeded flood flows and the impact would be less than significant (Impact 4.10-5; Class III). As the location of this alternative's construction work would be substantially the same as for the proposed Mira Loma-Jefferson subtransmission line, and worker exposure to flooding or mudflows caused by dam failure would be of limited duration, the impacts would be the same as the proposed Project, less than significant (Impacts 4.10-6 and 4.10-7; Class III).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would result in the construction of up to three battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project. Under Alternative C3, construction, operation, and maintenance-related impacts associated with hydrology and water quality would be similar to or reduced compared with those that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. Plans SCE would implement to control water contaminants during construction (such as the SWPPP, BMPs, and the Hazardous Materials Management Plan) would ensure that water quality degradation impacts would be less than significant (Impact 4.10-1; Class III).

Construction and operation impacts on groundwater would be increased compared to those under the proposed Project, as greater amounts of permanently disturbed impervious surfaces would be created in areas where recharge may occur (at the battery and substation facilities instead of along linear facilities). The same dewatering permit requirements would apply during construction, and SCE would submit grading and drainage engineering drawings for the battery and substation facilities to the City of Corona (a permittee of Order No. R8-2010-0033); the impact would therefore be less than significant (Impact 4.10-2; Class III).

A reduced amount of land temporarily disturbed would occur with this alternative and the disturbed areas would drain to channels not susceptible to hydromodification. The total area of impervious surface created by this alternative would be reduced compared to that of the proposed Project, and the individual impervious areas would be disconnected. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements, including requirements both for stormwater controls during construction and for post-construction ground stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns at and near the site (Impact 4.10-3; Class III).

Assuming the City of Corona would specify the sizing of any stormwater drainage system installed as part of the Alternative C3, sufficient system capacity would be available to accommodate new site runoff. Impervious access roads would include stormwater management features designed to control runoff, and these features would drain to channels whose conveyance

capacity would not be substantially altered by this alternative, similar to as discussed above in Impact 4.10-4. Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity would be less than significant (Class III).

Similar to the proposed substation site, none of the Alternative C3 battery storage and substation structures would be within a 100-year floodplain. This alternative would not result in impeded flood flows and there would be no associated impact. Unlike the Mira Loma-Jefferson subtransmission line component of the proposed Project, this alternative would not result in the placement of structures within the 100-year flood hazard area. This alternative would result in fewer workers being exposed to flooding because the Mira Loma-Jefferson subtransmission line would not be constructed; however, workers along the subtransmission line and telecommunication line alignments for the 40 MW battery storage and substation facility in the vicinity of the Temescal Wash would be exposed to flooding and mudflow in the event that a dam on Lake Mathews fails. These impacts are considered less than significant (Impact 4.10-6 and 4.10-7; Class III).

4.10.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would result in the construction of a battery storage facility, distribution connections, and ~~a~~ two telecommunication connections instead of the proposed Circle City Substation and associated source lines components of the Project. The battery storage facility would be constructed immediately adjacent to the proposed Circle City Substation site and the telecommunications lines would be constructed~~ion~~ along the same alignments as the proposed Databank Source Lines and the proposed Circle City Substation site to the existing Corona Substation telecommunication line described for Alternative E4. Under Alternative D1, construction, operation, and maintenance-related impacts associated with hydrology and water quality would be the same as the proposed Project at and around the Circle City Substation site as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below; however, overall ground disturbance associated with this alternative would be greatly reduced compared to the proposed Project as Circle City Substation and associated source lines components of the proposed Project would not be built.

The reduced extent of ground disturbance under this alternative would decrease the total area potentially exposed to erosion relative to the proposed Project. Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. Plans SCE would implement to control water contaminants during construction (such as the SWPPP, BMPs, and the Hazardous Materials Management Plan) would ensure that water quality degradation impacts would be less than significant (Impact 4.10-1; Class III).

Construction and operation impacts on groundwater would be reduced compared to those under the proposed Project, as reduced amounts of impervious surface would be created and the same dewatering permit requirements would apply (Impact 4.10-2; Class III).

A reduced amount of temporary and permanent land disturbance would occur with this alternative and the disturbed areas would drain to channels not susceptible to hydromodification. The total area of impervious surface created by Alternative D1 would also be reduced compared to that of the proposed Project. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements, including requirements both for stormwater controls during construction and for post-construction ground stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns at and near the sites (Impact 4.10-3; Class III).

Assuming the City of Corona would specify the sizing of any stormwater drainage system installed as part of Alternative D1, sufficient system capacity would be available to accommodate new site runoff. Similar to the proposed Circle City Substation, stormwater drainage from the battery storage facility would flow through engineered and maintained conveyance facilities to the Santa Ana River, an adequate sump. Long-term impacts of operation on the drainage pattern of the site would be less than significant, similar to as discussed above in Impact 4.10-4. Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity would be less than significant (Class III), and that this alternative would not contribute substantial amounts of additional polluted runoff to stormwater.

Similar to the proposed substation site, none of the structures of Alternative D1 would be within a 100-year floodplain and construction of the battery storage facility under this alternative would not result in impeded flood flows and there would be no associated impact. Construction of the battery storage facility would not expose workers to flooding and mudflow in the event of dam failure. Same as the proposed Circle City Substation, there would be no impact associated with the battery storage facility relative to these topics; however, implementation of Alternative D1 includes construction of the Mira Loma-Jefferson subtransmission line, so overall Impacts 4.10-5 through 4.10-7 would be less than significant (Class III).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would differ from the proposed Project by locating the Circle City Substation at a parcel just east of the proposed substation site. All linear project components, as well as access road sizes and locations would be the same as described for the proposed Project, with the exception of a short re-route option for the Databank Source Lines. Under Alternative D2, construction, operation, and maintenance-related impacts to hydrology and water quality that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. Plans SCE would implement to control water contaminants during construction (such as the SWPPP,

BMPs, and the Hazardous Materials Management Plan) would ensure that water quality degradation impacts would be less than significant (Impact 4.10-1; Class III).

Construction and operation impacts on groundwater would be similar to those under the proposed Project, as similar amounts of impervious surface would be created and the same dewatering permit requirements would apply (Impact 4.10-2; Class III).

A similar amount of land disturbance would occur with this alternative and the disturbed areas would drain to channels not susceptible to hydromodification. The total area of impervious surface created by the Alternative D2 would be similar to that of the proposed Project, and the individual impervious areas would be disconnected. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements, including requirements both for stormwater controls during construction and for post-construction ground stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns at and near the site (Impact 4.10-3; Class III).

Assuming the City of Corona would specify the sizing of any stormwater drainage system installed as part of Alternative D2, sufficient system capacity would be available to accommodate new site runoff. Impervious access roads would include stormwater management features designed to control runoff, and these features would drain to channels whose conveyance capacity would not be substantially altered by this alternative, similar to as discussed above in Impact 4.10-4. Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity would be less than significant (Class III), and that this alternative would not contribute substantial amounts of additional polluted runoff to stormwater.

Similar to the proposed substation site, the substation site under Alternative D2 would not be within a 100-year floodplain. Construction of the substation under this alternative would not expose workers to flooding and mudflow in the event of dam failure. Same as the proposed Circle City Substation, there would be no impact associated with the battery storage facility relative to these topics; however, implementation of Alternative D2 includes construction of the Mira Loma-Jefferson subtransmission line, so overall Impacts 4.10-5 through 4.10-7 would be less than significant (Class III).

Alternative E1: Quarry Street 66 kV Source Lines Segment

Alternative E1 would differ from the proposed Pedley Source Lines by traveling along Quarry Street, parallel to and south of the proposed Project route on 3rd Street. This alternative would result in more excavation than estimated for the proposed Project. Due to the depth to groundwater in the area it is unlikely that substantial additional groundwater dewatering would be required; however, if dewatering is required this alternative could result in a relatively larger impact on groundwater depletion compared to the proposed Project if the pumped water is not allowed to infiltrate near the site of excavation (Impact 4.10-2; Class III). The greater extent of excavation would increase the total area potentially exposed to erosion due to increased ground disturbance relative to the proposed Project; however, this additional potential impact on water quality and drainage patterns would remain less than significant with implementation of the Construction General Permit BMPs (Impacts 4.10-1, 4.10-3, and 4.10-4; Class III). All other construction, operation, and maintenance-

related impacts to hydrology and water quality that would result under Alternative E1 would be to the same as those that would result under the proposed Project (Impacts 4.10-5 through 4.10-7; Class III), as discussed in Section 4.10.4, *Impacts and Mitigation Measures*.

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would differ from the proposed Project in that it would result in installation of an underground line segment along the proposed Pedley Lines route from just west of Interstate 15 to the proposed Circle City Substation site. This alternative would result in more excavation than estimated for the proposed Project. Due to the depth to groundwater in the area and proposed shallow depth of excavation, it is unlikely that groundwater would be encountered that would require dewatering measures. However, if dewatering is required this alternative could result in a relatively larger impact on groundwater depletion compared to the proposed Project if the pumped water is not allowed to infiltrate near the site of excavation due to restrictions with permits or encountering contaminated groundwater (Impact 4.10-2; Class III). The greater extent of excavation would increase the total area potentially exposed to erosion due to increased ground disturbance relative to the proposed Project; however, this additional potential impact on water quality and drainage patterns would remain less than significant with implementation of the Construction General Permit BMPs (Impacts 4.10-1, 4.10-3, and 4.10-4; Class III). All other construction, operation, and maintenance-related impacts to hydrology and water quality under Alternative E2 would be to the same as those that would result under the proposed Project (Impacts 4.10-5 through 4.10-7; Class III), as discussed in Section 4.10.4, *Impacts and Mitigation Measures*.

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would differ from the Proposed Project by traveling west from the proposed substation site, crossing Sherborn Street and I-15, and continuing south on Compton Avenue to Old Temescal Road. In addition to draining to the same channels as the proposed Project, the components of Alternative E3 would drain to an engineered, fully hardened channel along Compton Avenue (RBF Consulting, 2012). It would result in installation of impervious surfaces only in areas mapped as draining to channels not susceptible to hydromodification (RBF Consulting, 2012). All activities would be required to comply with Construction General Permit requirements for post-construction site stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns along the alternative alignment (Impacts 4.10-3 and 4.10-4; Class III). Under Alternative E3, all other construction, operation, and maintenance-related impacts to hydrology and water quality that would result from implementation would be the same as those that would result under the Proposed Project (Impacts 4.10-1, 4.10-2; and 4.10-5 through 4.10-7; Class III), as discussed in Section 4.10.4, *Impacts and Mitigation Measures*.

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would include the same facilities as the proposed Project, without the Pedley Source Lines and with an additional underground telecommunications line between the Circle City and Corona Substations. The same soil types affected by construction activities of the proposed Project would be affected by this alternative. Under Alternative E4, construction, operation, and

maintenance-related impacts associated with hydrology and water quality would be similar to those that would result under the proposed Project, as discussed in Section 4.10.4, *Impacts and Mitigation Measures*, and summarized below.

Like the proposed Project, construction of this alternative would not violate water quality standards or otherwise significantly degrade water quality because the same permit requirements and applicant proposed measures would apply to construction and operation of this alternative. Plans SCE would implement to control water contaminants during construction (such as the SWPPP, BMPs, and the Hazardous Materials Management Plan) would ensure that water quality degradation impacts would be less than significant (Impact 4.10-1; Class III).

Construction and operation impacts on groundwater would be similar to those under the proposed Project, as similar amounts of impervious surface would be created and the same dewatering permit requirements would apply (Impact 4.10-2; Class III).

Less land disturbance would occur with this alternative and the disturbed areas would drain to channels not susceptible to hydromodification. The total area of impervious surface created by Alternative E4 would be similar to that of the proposed Project, and the individual impervious areas would be disconnected. All activities would be required to comply with Construction General Permit and De Minimus Permit requirements, including requirements both for stormwater controls during construction and for post-construction ground stabilization. For these reasons, this alternative would have a less-than-significant effect on drainage patterns at and near the sites (Impact 4.10-3; Class III).

Although not required for the Databank Source Lines, the Circle City Substation and impervious access roads would include stormwater management features designed to control runoff, and these features would drain to channels whose conveyance capacity would not be substantially altered by this alternative, similar to as discussed above in Impact 4.10-4. Compliance with permit conditions would ensure that the effects of construction on stormwater conveyance system capacity would be less than significant (Class III), and that this alternative would not contribute substantial amounts of additional polluted runoff to stormwater.

Same as the proposed Project, the Databank Source Lines would not be constructed within a 100-year floodplain; however, implementation of Alternative D2 includes construction of the Mira Loma-Jefferson subtransmission line, so overall Impact 4.10-5 would be less than significant (Class III). Construction of the Databank Source Lines under this alternative would expose workers to flooding and mudflow in the vicinity of the Temescal Wash in the event that a dam on Lake Mathews fails (Impact 4.10-6 and 4.10-7). This impact would be reduced because no workers would be subject to flooding or mudflow in the vicinity of Temescal Wash along the Pedley Source Lines alignment.

References – Hydrology and Water Quality

California Department of Water Resources (DWR), 2006a. Upper Santa Ana Valley Groundwater Basin, Chino Subbasin, in *California's Groundwater Bulletin 118*. Last update January 20, 2006.

DWR, 2006b. Upper Santa Ana Valley Groundwater Basin, Temescal Subbasin, in *California's Groundwater Bulletin 118*. Last update January 20, 2006.

DWR, 2014. CASGEM Basin Summary for the Chino Subbasin (Number 5-22.15). May 30, 2014.

DWR, 2016. Groundwater elevation data for wells in the vicinity of Eastvale, Chino, Norco, and Corona, California. Groundwater Information Center Interactive Map Application. Available online: https://gis.water.ca.gov/app/gicima/, accessed June 1, 2016.

City of Corona, 2004. *City of Corona General Plan Technical Background Report*. March.

City of Ontario, 2006. Figure S-2 Flood Hazards, in *The Ontario Plan: A Framework for the Future*.

County of Riverside, 2000. *Natural Hazard Mapping, Analysis, and Mitigation: a Technical Background Report in Support of the Safety Element of the New Riverside County 2000 General Plan*. August.

Federal Emergency Management Agency (FEMA), 2014. *Flood Insurance Study Volume 1 of 4: Riverside County, California and Incorporated Areas*. Revised August 18. Flood Insurance Study Number 06065CV001B.

Metropolitan Water District of Southern California (MWD), 2016. Lake Mathews. Available online: http://www.mwdh2o.com/AboutYourWater/Storage-And-Delivery/Reservoirs/Lake-Mathews, accessed June 14, 2016.

Miller, R.V., D.O. Shumway, and R.L. Hill, 1991. *Mineral Land Classification of the Temescal Valley Area, Riverside County, California.* California Division of Mines and Geology, Special Report 165.

Natural Resources Conservation Service (NRCS), 2018. Soil data for Western Riverside Area, California, accessed using Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, on April 13, 2018.

Orange County Public Works, Flood Division, 2016. Prado Dam. Available online: http://ocflood.com/sarp/prado, accessed June 5, 2016.

RBF Consulting, 2012. *Hydromodification Susceptibility Documentation Report and Mapping: Santa Ana Region*. Prepared for Riverside County Flood Control and Water Conservation District. January.

Regional Water Quality Control Board (RWQCB), 2008. *Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin*. Updated February 2008.

RWQCB, 2010. National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside, and the Incorporated Cities of Riverside County within the Santa Ana Region. Area-Wide Urban Runoff Management Program. Order No. R8-2010-0033. Adopted January 29, 2010.

RWQCB, 2012. *Water Quality Management Plan: A Guidance Document for the Santa Ana Region of Riverside County*. Approved October 22, 2012.

RWQCB, 2013. *Use Attainability Analysis Cucamonga Creek – Reach 1*. October 4.

RWQCB, 2016. *Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin*, *Chapter 5*. Updated February 2016 to include approved amendments.

Santa Ana Watershed Project Authority, 2016. Map of the Santa Ana River Watershed, available online: http://www.sawpa.net/, accessed June 5, 2016.

Southern California Edison (SCE), 2015. *Proponent's Environmental Assessment Circle City Substation and Mira Loma-Jefferson 66kV Subtransmission Line Project*. December 4, 2015.

State Water Resources Control Board (SWRCB), 2016. Storm Water Program. Linear Construction – Frequently Asked Questions. Available online: http://www.waterboards.ca.gov/water_issues/programs/stormwater/linearfaq.shtml, accessed May 2, 2017.

TDBU Geotechnical Engineering Group, 2012. *Geotechnical Investigation Report Circle City 66kV Substation Leeson Lane and Magnolia Avenue, Corona, California*. July 20, 2012.

Water Education Foundation, 2015. *The 2014 Sustainable Groundwater Management Act: A Handbook to Understanding and Implementing the Law*. 2015.

Weatherbase, 2016. Corona, California Weather. Available online: http://www.weatherbase.com/weather/weather.php3?s=130240&cityname=Corona-California-United-States-of-America, accessed May 10, 2016.

This page intentionally left blank

4.11 Land Use and Planning

This section addresses impacts to land uses in the study area. The analysis considers impacts resulting from the construction, operation, and maintenance of the Project and alternatives. Land use issues include compatibility of the Project and alternatives with adjacent land uses, and conflicts with applicable plans and policies. This evaluation is based on review of local and regional land use plans and policies.

4.11.1 Setting

4.11.1.1 Environmental Setting

The Project would cross portions of northwestern Riverside and southwestern San Bernardino counties. The Project would primarily be located in the City of Corona, as well as the cities of Eastvale, Norco, Chino, and Ontario. The cities of Corona, Eastvale, and Norco are located in Riverside County, and the cities of Chino and Ontario are located in San Bernardino County. The Project would be built within existing Southern California Edison (SCE) rights-of-way (ROWs), easements, and/or public ROW where SCE is in franchise. Existing land uses that would occur within and adjacent to the Project area are described below for each of the jurisdictions. **Figure 4.11-1**, *General Plan Land Use Designations in Corona and Norco*, and **Figure 4.11-2**, *General Plan Land Use Designations in Ontario, Chino, and Eastvale*, depict the general land use designations and local jurisdictions found within 1 mile of the proposed Project alignments.

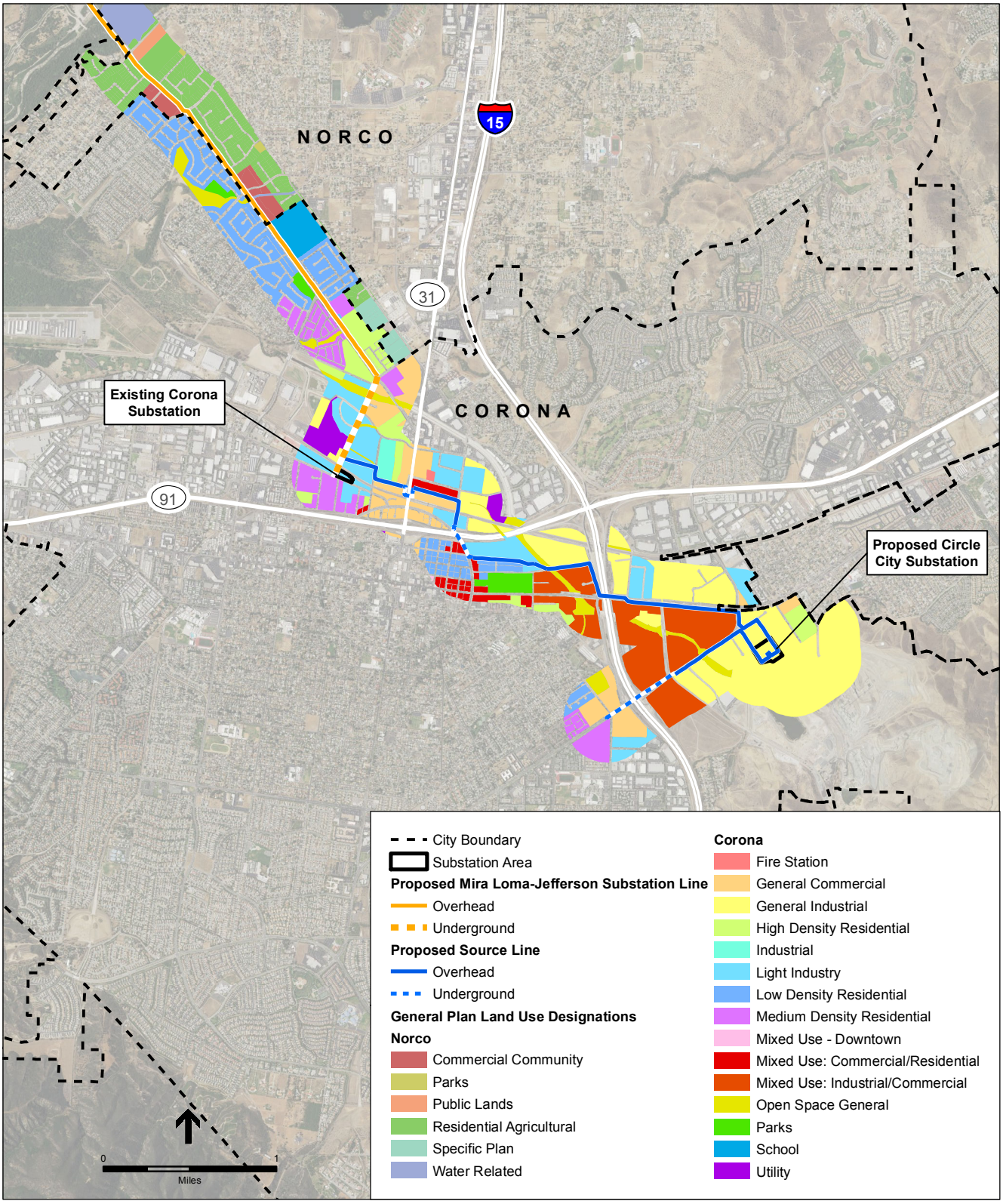
Riverside County

The majority of Project activities, including construction of the proposed Circle City Substation, the installation of the proposed Pedley and Databank Source Lines, and the construction of the southern-most 1.7 miles of the Mira Loma-Jefferson subtransmission line, would be conducted within the City of Corona, located within Riverside County. The City of Corona is located at the base of the Santa Ana Mountains and is the most developed area that would be crossed by the Project's subtransmission alignments. The Project's subtransmission alignments would cross residential, commercial, and industrial uses in four City of Corona specific plan areas, including the Downtown Revitalization, North Main Street District, Corona Magnolia, and The Township.

The Mira Loma-Jefferson subtransmission line would cross the City of Eastvale for 3.7 miles in the area south of Bellgrave Avenue at the San Bernardino County line, and the route would turn south on Hellman Avenue at American Heroes Park (north of Schleisman Road). Continuing south, the subtransmission line would cross back into the City of Eastvale from the boundary of the City of Chino on River Road to 0.1 mile north of Bluff Street (south of the Santa Ana River). This portion of the line would cross residential, industrial, and agricultural land uses.

The Mira Loma-Jefferson subtransmission line would also cross unincorporated Riverside County south of the Santa Ana River for 0.1 mile between the City of Norco's northern boundary and the City of Eastvale's southern boundary. This portion of the line would cross open space land uses within the Temescal Canyon Area Plan boundaries.

Within Riverside County, the proposed Mira Loma-Jefferson subtransmission line would cross 1.3 miles of the western edge of the City of Norco within residential and public facility land uses.

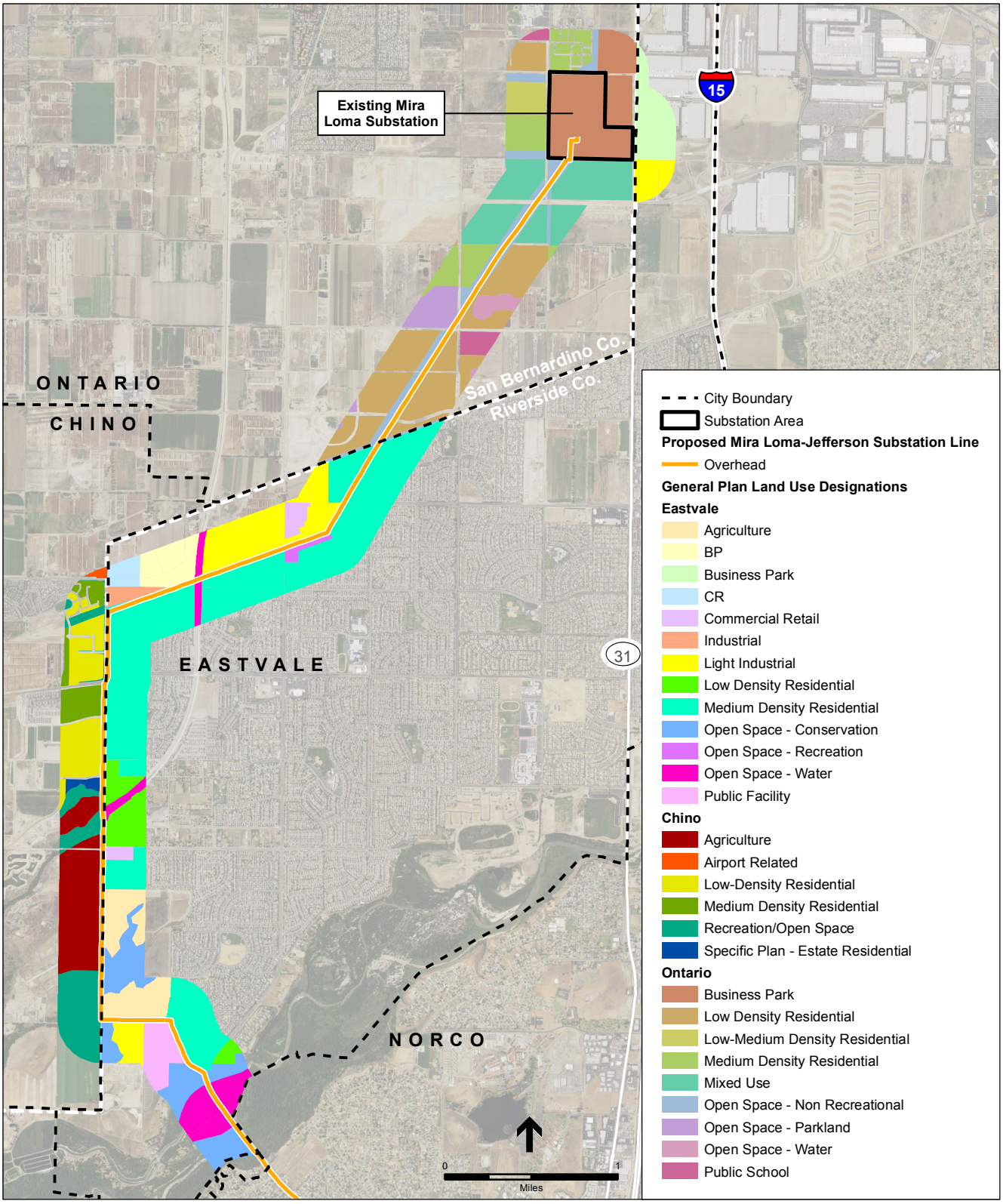


SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.11-1

General Plan Land Use Designations in Corona and Norco



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.11-2

General Plan Land Use Designations in Ontario, Chino, and Eastvale

San Bernardino County

The Project would be located within the southwestern corner of incorporated areas of San Bernardino County. Hellman Avenue divides the City of Eastvale in Riverside County from the City of Chino in San Bernardino County, which is located on the western side of the street. The Mira Loma-Jefferson subtransmission line would travel through the eastern edge of the City of Chino, along the western side of Hellman Avenue (south of Schleisman Road) for 2.0 miles within The Preserve Specific Plan area. The Mira Loma-Jefferson subtransmission line would cross undeveloped and agricultural land along the southern portion of Hellman Avenue, and smaller areas of residential land just south of Schleisman Road.

Between the City of Eastvale boundary and the existing Mira Loma Substation, the Mira Loma-Jefferson subtransmission line would be within the City of Ontario for 2.1 miles. The Mira Loma-Jefferson subtransmission Line would be located in the southeastern portion of the city, just north of Riverside County and the City of Eastvale. This portion of the line would cross two approved specific plan areas within the New Model Colony. The New Model Colony is the portion of the former San Bernardino County Agricultural Preserve that was annexed by the city in 1999. The New Model Colony encompasses 8,200 acres and is bordered by Riverside Drive to the north, Milliken Avenue and Hamner Avenue to the east, the Riverside County line and Merrill Avenue to the south, and Euclid Avenue to the west. The subtransmission line would originate at the existing Mira Loma Substation, which is located north of the Rich-Haven Specific Plan area. The line would then travel in a southwesterly direction, through the southwestern corner of the Grand Park Specific Plan area, through the eastern portion of the Subarea 29 Specific Plan area, and adjacent to the Subarea 29 Specific Plan Amendment area.

Table 4.11-1, *Jurisdictions Crossed by the Proposed Project*, provides a summary of the distance/area of the proposed Project components that would be located within each jurisdiction.

TABLE 4.11-1
JURISDICTIONS OF THE PROJECT SITES AND ALIGNMENTS

Proposed Project Component	City/County	Distance/Area*
Circle City Substation	Corona, Riverside County	19.5 acres
Source Lines	Corona, Riverside County	4.7 miles
Mira Loma-Jefferson 66 kilovolt (kV) Subtransmission Line	Ontario, San Bernardino County	2.1 miles
	Eastvale, Riverside County	3.7 miles
	Chino, San Bernardino County	2.0 miles
	Unincorporated Riverside County	0.1 mile
	Norco, Riverside County	1.3 miles
	Corona, Riverside County	1.7 miles

* The total length of the Mira Loma-Jefferson 66 kV Subtransmission Line includes 10.3 miles of new construction, as well as 0.6 mile of existing underground duct where the line would be installed north of Corona Substation to River Road.

SOURCE: County of Riverside, 2015a; County of San Bernardino, 2007; City of Chino, 2010; City of Ontario, 2015a.

4.11.1.2 Regulatory Setting

Federal

There are no federal land use regulations that would be applicable to the Project.

State

California Public Utilities Commission General Order 131-D

The California Public Utilities Commission (CPUC) has sole and exclusive jurisdiction over the siting and design of the proposed Project or an alternative because it authorizes the construction, operation, and maintenance of investor-owned public utility facilities. Although such projects are exempt from local land use and zoning regulations and discretionary permitting (i.e., would not require approval from a local decision-making body such as a planning commission or city council), General Order (GO) 131-D, Section XIV.B requires that in locating a project "the public utility shall consult with local agencies regarding land use matters." The public utility is required to obtain any required non-discretionary local permit, such as those ministerial local permits listed in **Table 1-2**, *Summary of Potential Permit Requirements*.

Local

As stated above, CPUC GO 131-D explains that local land use regulations would not apply to the Project or alternatives. However, for informational purposes, the goals and policies of local general plans and zoning designations pertaining to land use and electrical distribution facilities that would otherwise be relevant to the Project and alternatives are described below. See Figures 4.11-1 and 4.11-2 for the mapped land use designations in the vicinity of the proposed Project.

County of Riverside General Plan

South of the Santa Ana River, the Mira Loma-Jefferson subtransmission line would cross an unincorporated portion of Riverside County for 0.1 mile, within the Temescal Canyon Area Plan boundary and the Santa Ana River Corridor Policy Area. The purpose of this policy area is to ensure that any special policies associated with open space, flood control, or habitat protection is considered. The following policy in the Riverside County General Plan (County of Riverside, 2015a) pertains to public utility facilities:

> *Policy LU 5.4:* Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of "public facilities". This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.

The following policy from the Temescal Canyon Area Plan (County of Riverside, 2015b) pertains to utility lines:

> *Policy TCAP 5.12:* Discourage utility lines within the river corridor. If approved, lines shall be placed underground where feasible and shall be located in a manner to harmonize with the natural environment and amenity of the river.

County of Riverside Zoning

The portion of the Mira Loma-Jefferson subtransmission line that would cross an unincorporated area of Riverside County is zoned as W-1 Watercourse, Watershed, and Conservation Area. Section 16.2(6) of the Riverside County Zoning Ordinance states that both private and public utilities are permitted uses within this designation.

Riverside County Airport Land Use Commission

The Riverside County Airport Land Use Commission (ALUC) prepares Airport Land Use Plans (ALUPs) for the airports within Riverside County in order to protect and promote the safety and welfare of residents of the airport vicinity and users of the airport while ensuring the continued operation of the airports. A portion of the Mira Loma-Jefferson subtransmission line that would be located within SCE's approximately 500-foot-wide easement is located in Riverside County 1.5 miles west of the Chino Airport. Although the Chino Airport is located in San Bernardino County, land use compatibility for the portion of the airport's influence area within Riverside County is discussed in Chapter 3 of the Riverside County ALUCP. The Project would be located within Compatibility Zone D (Primary Traffic Pattern), with some segments on the boundary between Zone D and Zone C (Extended Approach/ Departure), as delineated on Map CH-1, Chino Airport Compatibility Map (see Figure 4.9-2 in Section 4.9, *Hazards and Hazardous Materials*). Portions of the Project also would be located within Zone D of the Corona Municipal Airport. According to the countywide policies identified in the ALUCP, ALUC review is required for all objects taller than 70 feet within Zones C or D (Riverside County ALUC, 2004).

Western Riverside County Multiple Species Habitat Conservation Plan

Portions of the Project within Riverside County, including the proposed Circle City Substation and 11.4 miles of the proposed Pedley Source Line, Databank Source Lines, and Mira Loma-Jefferson subtransmission sine, are within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional plan focusing on conservation of species and their associated habitats in western Riverside County. This plan is one of several large, multijurisdictional habitat-planning efforts in southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. As described in this EIR Section 4.4, *Biological Resources*, portions of the Project would be located within MSHCP Criteria Cell areas. Section 7.3.9, *Future Facilities*, of Volume I of the MSHCP states that future facilities including electric utilities, should be located in the least environmentally sensitive feasible location and use roads, trails, and other disturbed areas to the greatest extent feasible. It also states that if no other routing is feasible, alignments should follow previously existing roads, easements, rights of way, and disturbed areas, minimizing habitat fragmentation (WRCRCA, 2003).

City of Corona General Plan

The Circle City Substation site is located within an area designated as *General Industrial* in the City of Corona General Plan (City of Corona, 2004). The proposed Pedley Source Lines alignment is within the following land use designations: *General Industrial, Mixed Use: Industrial/Commercial, Open Space General, Light Industrial, Low Density Residential, Mixed Use: Commercial/Residential,* and *General Commercial*. The proposed Databank Source Lines

alignment is within the following land use designations: *General Industrial, Open Space General, Mixed Use: Industrial/Commercial*, and *General Commercial.* The proposed Mira Loma-Jefferson subtransmission line alignment is within the following land use designations: *Light Industrial, General Commercial, Open Space General, High Density Residential, Medium Density Residential,* and *Low Density Residential*.

The following policies within the Land Use Element of the City of Corona General Plan pertain to electrical power line facilities:

> *Policy 1.15.1:* Accommodate existing schools, parks, government, fire and police facilities, utility, and institutional uses in accordance with the Land Use Plan's designations and applicable design and development policies.
>
> *Policy 6.1.14:* Ensure that, to the extent possible, all pipelines and electrical transmission lines are placed underground.
>
> *Policy 7.12.2:* Work with the Southern California Gas Company, SCE, and the city Department of Power and Water to ensure adequate electrical facilities are available to meet the demand of existing and future developments.
>
> *Policy 7.12.3:* Continue to provide for the undergrounding of new and existing electrical distribution lines unless it is determined not to be economically or practically feasible as a result of significant environmental or other constraints.
>
> *Policy 7.13.4:* Promote the extension of the regional fiber optic network into the city.

The proposed source lines and associated fiber optic cable, as well as the southern portion of the Mira Loma-Jefferson subtransmission line, would cross through four specific plan areas in the City of Corona, including: the Township in Corona Specific Plan, the Corona Magnolia Specific Plan, the Downtown Revitalization Specific Plan, and the North Main Street District Specific Plan, which all contain policies generally relating to preserving the aesthetic streetscape of the city and undergrounding of public utilities, where feasible (City of Corona, 1983; 2002a; 2011; and 2014b).

City of Corona Zoning and Municipal Code

The proposed Circle City Substation and the distribution getaways would be constructed on land zoned *Heavy Manufacturing (M3).* The proposed Pedley Source Lines alignment would cross land zoned *Light Manufacturing (M1), Heavy Manufacturing (M3), Flood Plain (FP1), Transitional Commercial District (TC), Mixed Use (MU),* and *Business Park (BP).* The proposed Databank Source Lines alignment would cross land zoned *General Manufacturing (M2), Heavy Manufacturing (M3), Flood Plain (FP1), Commercial (C),* and *Restricted Commercial (C2* and *C3).* The Mira Loma-Jefferson subtransmission line alignment would cross land zoned *Light Manufacturing (M1), Flood Plain (FP1), Multiple Family Residential (R3), Medium Density Residential (MDR), Single Family Residential (R1-7.2), Park (P),* and *School (S)* (City of Corona, 2014a). According to the Corona Municipal Code, public utility structures and installations are a conditionally permitted use in all zoning designations (§17.92.030).

City of Corona Rule 20A Underground Utility District

The CPUC Rule 20A Overhead Utility Conversion Program is administered by the three large investor-owned electric utilities in California. Under this program the utilities annually allocate funds to communities to convert overhead electric and telecommunication infrastructure to underground electric facilities. The program is essentially a utility credit program whereby each utility is given an allotment of credits to distribute to its respective municipalities every year. The utilities are responsible for the planning, design, and construction of removing overhead infrastructure and placement in an underground trench. The utility is compensated for project costs by collecting the municipality's accumulated credits and including them in subsequent general rate cases so that the electric rates charged to all customers within their service territory will cover the submitted Rule 20A expenses. Because ratepayers contribute the bulk of the costs of Rule 20A programs through utility rates, the conversion projects must be in the public interest by meeting one or more of the following criteria:

- Eliminate an unusually heavy concentration of overhead lines;
- Involve a street or road with a high volume of public traffic;
- Benefit a civic or public recreation area or area of unusual scenic interest;
- Be listed as an arterial street or major collector as defined in the Governor's Office of Planning and Research Guidelines (CPUC 2016, 2017).

In 2002, the City of Corona established Underground Utility District No. 10 using Rule 20A funds administered by SCE (City of Corona, 2002b). The proposed Project would be constructed along the following street segments within Underground Utility District No. 10:

- 6th Street from I-15 to El Camino Avenue; and
- Magnolia Avenue from Rimpau Avenue to Trademark Circle.

City of Eastvale General Plan

The land use designations that would be crossed by the proposed Mira Loma-Jefferson subtransmission line include *Agriculture*, *Business Park*, *Light Industrial*, *Open Space/Recreation*, *Open Space/Conservation*, *Medium Density Residential,* and *Open Space-Water* (City of Eastvale, 2015a). The following goal, policies, and actions within the Land Use Element and the Circulation and Infrastructure Element of the City of Eastvale General Plan pertain to utility facilities (City of Eastvale, 2012):

> **Goal C-3:** Maximize the use of existing infrastructure and utilities to provide for the logical, timely, and economically efficient expansion and replacement of infrastructure and services.
>
> > *Policy C-29:* Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.
> >
> > *Policy DE-16:* The City will seek to reduce the unsightly appearance of overhead and aboveground utilities by placing them underground as new development occurs.

> Action DE-16.1: To the extent feasible, new utility facilities, including electrical transformers, water backflow preventers, and similar items, should be located underground.
>
> Action DE-16.2: Require that development on sites with existing overhead utilities be required to place these facilities underground where consistent with the guidelines of the electrical utility.
>
> Action DE-16.3: As funding becomes available, the City will underground utilities in areas where development has already occurred.

The Mira Loma-Jefferson subtransmission line would also cross the southern portion of the Archibald-Cloverdale Policy Area. This policy area is intended to provide guidance in selecting from a range of potential options for development in the event that San Bernardino County's Comprehensive Land Use Plan for the Chino Airport is amended in the future to allow for potential commercial development. However, there are no policies that would be applicable to the Project (City of Eastvale, 2012).

City of Eastvale Zoning

The Mira Loma-Jefferson subtransmission line would cross through the following zoning designations in the City of Eastvale: *Watercourse, Watershed and Conservation Areas (W-1), One-Family Dwellings (R-1)*, *Light Agriculture (A-1)*, *Heavy Agriculture (A-2)*, *Planned Residential Developments (PRD)*, and *General Commercial (C-1/C-P)* (City of Eastvale, 2015b). There are no zoning codes pertaining to electric infrastructure projects that would be applicable to the Project.

City of Norco General Plan

The Mira Loma-Jefferson subtransmission line would cross through the City of Norco along River Road south of Bluff Road to Corydon Avenue within *Residential Agricultural* and *Commercial Community* land use designations (City of Norco, 2012a).

The City of Norco General Plan Land Use Element contains the following goal applicable to utility facilities (City of Norco, 2001).

> **Goal 2.5: Public and Community Uses.** The construction of public facilities that provide for the varied needs of the community, and establish the animal keeping lifestyle that is central to its citizens, should set the example for architectural and landscaping design standards for the entire community.

City of Norco Zoning

The Mira Loma-Jefferson subtransmission line would cross *A-1-20 (Agricultural Low Density 20,000 square feet), OS (Open Space),* and *C-G (Commercial General)* (City of Norco, 2012b). Section 17.24.120 of the Norco Municipal Code states that all utility lines and facilities shall be installed in accordance with CPUC standards within streets or easements.

City of Chino General Plan

The Mira Loma-Jefferson subtransmission line would cross *Agriculture~~, Neighborhood Commercial,~~* and *Open Space/Recreation Buffer Trail* land use designations. In addition, it would cross the following residential land use designations: *Medium Density Residential, High Density Residential, Residential Development (RD) 2, RD4.5* and *RD8* (City of Chino, 2017 ~~2015a~~). The entire extent of the proposed Mira Loma-Jefferson subtransmission line alignment in the City of Chino is within the City's The Preserve Specific Plan area. The following objective and policy within the Land Use Element of the City of Chino General Plan are applicable to utility facilities (City of Chino, 2010).

> *Objective LU-7.1:* Encourage new development at a rate that can be served by available and planned public infrastructure.
>
> *Policy P3:* Urban development shall occur only where the City can determine that urban public facilities and services exist or can be reasonably made available.

City of Chino Zoning

The Mira Loma-Jefferson subtransmission line and the potential staging area site along Hellman Avenue would be located within the following zoning designations in The Preserve Specific Plan area: *Agriculture/Open Space-Natural (AG/OS-N), ~~Neighborhood Commercial (CN),~~ Estate Residential Zone (ER), Low Density Residential (LDR), and Medium Density Residential (MDR)* (City of Chino, 2015b). The Chino Municipal Code states that minor and major utilities are a conditionally permitted use with all residential districts (§20.04.030), and within *Neighborhood Commercial* districts (§20.06.030). Section 20.08.040 states that major and minor utilities are not permitted within *Agriculture/Open Space-Natural* districts. However, Section 13.28.10(D) states that poles, overhead wires, and associated overhead structures used for the transmission of electric energy at nominal voltages in excess of 34.5kV are exempt from development restrictions because they are not included in Chino's jurisdiction.

City of Ontario General Plan

The existing Mira Loma Substation is located on lands designated as *Employment-Business Park*. One potential staging area site, measuring approximately 3 acres, is north of the existing Mira Loma Substation on land designated as *Business Park/Industrial* within the Edenglen Specific Plan area. The Mira Loma-Jefferson subtransmission line would be located within *Open Space-Non-Recreational* and *Open Space-Parkland* land use designations in the City of Ontario (City of Ontario, 2015a). In addition, a portion of the line would be located within the *Chino Airport Overlay*. The following policy within the Land Use Element of the City of Ontario General Plan pertains to coordination with the CPUC (City of Ontario, 2010).

> *Policy LU2-7:* Inter-jurisdictional Coordination. We maintain an ongoing liaison with IEUA, LAWA, Caltrans, Public Utilities Commission, the railroads and other agencies to help minimize impacts and improve the operations and aesthetics of their facilities.

In the City of Ontario, the Mira Loma-Jefferson subtransmission line would cross three approved specific plan areas, the Rich-Haven Specific Plan, the Grand Park Specific Plan, and the Subarea 29 Specific Plan, within an existing SCE easement. Portions of the proposed subtransmission line

would be located within the Rich-Haven (2007), Edenglen (2009), Grand Park Specific Plan (2013), and Subarea 29 (2008) Specific Plan. The four specific plans all contain policies pertaining to incorporation of transmission corridors, undergrounding electric transmission facilities, and the use of existing facilities for new development (City of Ontario, 2007, 2008, 2009, and 2013).

City of Ontario Zoning

The existing Mira Loma Substation and portions of the Mira Loma-Jefferson subtransmission line are located within land zoned as *Agricultural Preserve Specific Plan, Subarea 29 Specific Plan and Rich-Haven Specific Plan* (City of Ontario, 2015b). The Ontario Municipal Code states that the requirement to underground utilities "shall not abrogate any rights offsets, or claims which the owner or developer may have as to any utility or communication company" (§7-7.201). In addition, Section 7-7.301 states that infrastructure exceeding 34.5 kV is not within the regulatory jurisdiction of the City of Ontario.

4.11.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant land use effects on the environment if it would:

a) Physically divide an established community;

b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.11.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce project impacts on land use and planning.

4.11.4 Impacts and Mitigation Measures

4.11.4.1 Approach to Analysis

This impact analysis considers the land use impacts associated with the construction, operation, and maintenance of the Project.

a) Physically divide an established community. (No Impact)

As discussed in the Section 4.11.1, *Setting*, the Project would be within the cities of Corona, Eastvale, Norco, Chino and Ontario, and in unincorporated Riverside and San Bernardino counties. The proposed Circle City Substation and associated distribution getaways would be located on vacant, disturbed SCE fee-owned property in an industrial area that includes warehouses, commercial buildings, truck and equipment yards, light manufacturing, and a quarry.

Construction or operation of the substation would not create a new physical barrier to nearby land uses. The Project would be located mostly within existing ROWs, easements, public ROWs, and on existing SCE fee-owned property, mostly alongside existing transmission and/or subtransmission lines, and within existing substation boundaries. SCE would acquire new easement rights for a 30-foot-wide ROW to accommodate the Source Lines alignment for approximately 700 feet along public streets in the City of Corona. In addition, upgrades to SCE's existing, approximately 30-foot-wide, easement along River Road would be required for a distance of approximately 1.2 miles to accommodate the proposed Mira Loma-Jefferson subtransmission line. The construction of the proposed Mira Loma-Jefferson subtransmission line would replace an existing single-circuit subtransmission line with a double-circuit subtransmission line. The proposed Source Lines alignment would involve the construction of new lines along existing streets in the City of Corona. Neither the overhead or underground portions of these new lines would constitute a new physical barrier (division) between any existing communities, or restrict access to any community as access would still be available underneath or over proposed lines via existing streets, sidewalks, trails, etc. Therefore, the Project would cause no impact related to the physical division of an established community. (No Impact)

---

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (No Impact)

No local land use plans, policies, or regulations requiring discretionary approval would apply to the proposed Project because, pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. Consequently, the Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed Project area. There would be no impact.

As discussed in Section 4.11.1, *Setting*, although the Project would be exempt from local land use and zoning regulations and discretionary permitting, GO 131-D, Section XIV.B requires that in locating a project "the public utility shall consult with local agencies regarding land use matters." The CPUC has consulted with local agencies regarding land use matters (see Appendix A, Scoping Report [Appendix F, Agency Consultation Meeting Notes]) that would be affected by the Project and has provided the following land use consistency analysis for informational purposes only.

Riverside County General Plan. As previously described, the Project would cross an unincorporated area of Riverside County for 0.1 mile within the Santa Ana River Corridor Policy Area. The purpose of these designations is to ensure that any special policies associated with open space, flood control, or habitat protection is considered. Policy LU 5.4 ensures that development and conservation land uses infringe upon existing public utility corridors and the development of public facilities would be located in areas appropriately designated by the general plan and area plan land use maps. In addition, Policy TCAP 5.12 discourages utility lines within the river corridor and calls for lines to be placed underground where feasible and located in a manner to harmonize with the natural environment and amenity of the river. Since the Project would result

in replacement of the existing overhead subtransmission line H-frame structures and poles within the river corridor, no change from the existing condition would occur. Therefore, locating the Project within these designations would not conflict with relevant land use policies of the Riverside County General Plan.

Riverside County Zoning Ordinance. The portion of the Mira Loma-Jefferson subtransmission line that would cross an unincorporated area of Riverside County is zoned as *W-1 Watercourse, Watershed, and Conservation Area*. The Project would not conflict with the Riverside County Municipal Code.

City of Corona General Plan. The Circle City Substation site is located within an area designated as *General Industrial*. The proposed Pedley and Databank Source Lines and the Mira-Loma Jefferson subtransmission line would traverse four separate specific plan areas—the Downtown Revitalization, North Main Street, Corona Magnolia, and The Township in Corona, as well as several types of land use designations including industrial, commercial, residential, public facility, and open space, etc. The general plan contains Policy 7.12.2, which promotes coordination with SCE to ensure adequate infrastructure is present within the city to accommodate growth. Policies 6.1.14 and 7.12.3 encourage new and existing electrical transmission lines to be installed underground unless they are determined not to be economically or practically feasible as a result of significant environmental or other constraints. The Downtown Revitalization Specific Plan, North Main Street District Specific Plan, Corona Magnolia Specific Plan, and the Township in Corona Specific Plan all contain policies generally relating to preserving the aesthetic streetscape of the city and undergrounding of public utilities, where feasible. For example, as described in the Downtown Revitalization Specific Plan and North Main Street District Specific Plan, policies to provide a more aesthetically pleasing streetscape on Main Street, 6th Street, and Grand Boulevard would apply to the proposed Pedley Source Lines along Grand Boulevard and North Main Street. Because the Pedley and Databank Source Lines would be installed underground for only limited portions in Corona, the Project would conflict with City of Corona polices related to undergrounding of electrical lines. Visual impacts regarding installation of overhead Source Lines in Corona are discussed in Section 4.1, *Aesthetics*, Impact 4.1-4.

City of Corona Municipal Code. The Circle City Substation site is located within an area designated as *Heavy Industrial*, while the proposed Pedley and Databank Source Lines and the Mira-Loma Jefferson subtransmission line would traverse several zoning designations, including industrial, commercial, residential, public facility, and open space, etc. According to the Corona Municipal Code, public utility structures and installations are a conditionally permitted use in all zoning designations (§17.92.030). However, a use permit is a discretionary land use instrument, and so not required for the proposed Project.

City of Eastvale General Plan. The Mira Loma-Jefferson subtransmission line would cross lands designated as *Agriculture, Business Park, Light Industrial, Open Space/Recreation, Open Space/Conservation, Medium Density Residential,* and *Water* within the southwestern and northwestern portions of the City of Eastvale, as well as the proposed Ranch at Eastvale Specific Plan area. General Plan policies C-29 and DE-16 and their associated actions discourage aboveground utility lines. The existing subtransmission line that would be replaced by the

proposed Mira Loma-Jefferson subtransmission line is currently located overhead in the same alignment along River Road/Baron Road and no change from the existing condition would occur. Another portion of the subtransmission line would be configured overhead along the east side of Hellman Avenue, north of Schleisman Road, which would conflict with the City's policies related to undergrounding of electrical lines. Visual impacts regarding installation of the Mira-Loma subtransmission line are discussed in Section 4.1, *Aesthetics*, Impact 4.1-4.

City of Eastvale Municipal Code. The Mira Loma-Jefferson Subtransmission Line would cross through the following zoning designations in the City of Eastvale: *Watercourse, Watershed and Conservation Areas (W-1), One-Family Dwellings (R-1), Light Agriculture (A-1), Heavy Agriculture (A-2), Planned Residential Developments (PRD), and General Commercial (C-1/C-P)*. There are no zoning codes pertaining to electric infrastructure projects that would be applicable to the Project, therefore the Project would not conflict with the Eastvale Municipal Code.

City of Norco General Plan. The Mira Loma-Jefferson Subtransmission Line would cross through the City of Norco within land designated *Residential Agricultural and Commercial Community*. There are no policies applicable to electric infrastructure provided by the general plan. However, the Project would support land use policy goal 2.5, regarding construction of adequate public facilities for urban development and community needs. Accordingly, locating the Project within these designations would not conflict with the City of Norco General Plan.

City of Norco Municipal Code. The Mira Loma-Jefferson Subtransmission Line would cross *Agricultural* (Low Density 20,000 square feet), *Open Space*, *and Commercial-General* zoning districts. Section 17.24.120 of the Norco Municipal Code states that all utility lines and facilities shall be installed in accordance with CPUC standards within streets or easements. Therefore, the Project would not conflict with the City of Norco Municipal Code.

City of Chino General Plan. The Mira Loma-Jefferson subtransmission line would be located within The Preserve Specific Plan within *Medium Density Residential, High Density Residential, Residential Development (RD) 2*, *RD4.5, RD8, Agriculture*, ~~*Neighborhood Commercial*~~, and *Open Space/Recreation Buffer Trail* land use designations. There are no policies applicable to electric infrastructure in the general plan. However, the Project would support land use policies pertaining to ensuring adequate infrastructure for urban development such as policy P3. Since the Project would replace poles with new poles along the west side of Hellman Avenue (south of Schleisman Road) within Chino, locating the Project within these designations would not conflict with the City of Chino General Plan.

City of Chino Municipal Code. The Mira Loma-Jefferson subtransmission line and the potential staging area along Hellman Avenue would be located within the following zoning designations in The Preserve Specific Plan area: *Agriculture/Open Space-Natural*, *Neighborhood Commercial*, and several residential designations. The Chino Municipal Code states that minor and major utilities are a conditionally permitted use with all residential and commercial districts; however, a use permit is a discretionary land use instrument, and so not required for the proposed Project.

City of Ontario General Plan. The Mira Loma-Jefferson subtransmission line would be located within *Open Space-Non-Recreational*, *Open Space-Parkland*, and *Employment-Business Park*

land use designations; in addition, a portion of the subtransmission line would be located within the Chino Airport Overlay for the City of Ontario General Plan. The Ontario General Plan policy LU2-7 supports coordination with utilities and other jurisdictions regarding infrastructure and aesthetic compatibility. The Mira Loma-Jefferson subtransmission line would cross three approved specific plan areas—the Rich-Haven Specific Plan, the Grand Park Specific Plan, and the Subarea 29 Specific Plan—within an existing SCE easement. One potential staging area would be located within the Edenglen Specific Plan Area. The existing subtransmission line that would be replaced by the proposed Mira Loma-Jefferson subtransmission line is currently located overhead along the same alignment within Ontario and no change from the existing condition would occur. Therefore, the Project would not conflict with the City of Ontario General Plan.

City of Ontario Municipal Code. The existing Mira Loma Substation and portions of the Mira Loma-Jefferson subtransmission line are located within land zoned as *Agricultural Preserve Specific Plan, Subarea 29 Specific Plan*, and *Rich-Haven Specific Plan*. However, because the municipal code acknowledges that electrical infrastructure exceeding 34.5 kV is not within the city's jurisdiction, it does not attempt to apply the zoning policies to such infrastructure. Therefore, the Project would not conflict with the City of Ontario Municipal Code.

Riverside County ALUCP. A portion of the Mira Loma-Jefferson subtransmission line would be located within Compatibility Zone D of the Chino Airport and Corona Municipal Airport (Riverside County ALUC, 2004). Although the ALUC does not have jurisdiction over the Project per GO 131-D, if requested, SCE would coordinate with the ALUC for review of transmission poles or objects taller than 70 feet within Zone D. See Impact 4.9-4 in Section 4.9, *Hazards and Hazardous Materials*, for a discussion of Federal Aviation Administration review of potential physical conflicts with airport runways.

Conclusion

As described above, the Project would generally be compatible with land use plans and policies adopted by local jurisdictions responsible for planning throughout the Project area, as the Project would be constructed within SCE ROW or approved easements and would mostly involve replacement of existing overhead subtransmission lines with new lines. However, operation of the Project would conflict with undergrounding policies of the cities of Corona and Eastvale in locations proposed for new overhead subtransmission lines where none currently exist. See Section 4.1, *Aesthetics*, for discussion of visual impacts regarding proposed overhead Source Lines and the Mira-Loma Jefferson subtransmission line. As discussed previously and pursuant to GO 131-D, the CPUC's jurisdiction over electric power line projects preempts local land use agencies from regulating the Project; therefore, no impacts to applicable land use or planning would occur. (No Impact)

---

c) Conflict with any applicable habitat conservation plan or natural community conservation plan. (No Impact)

The Project would not be located within an NCCP. However, as described in Section 4.11.1, *Setting*, portions of the Project would be located within the established Western Riverside County

MSHCP boundary within MSHCP Criteria Cell areas. Section 7.3.9, *Future Facilities*, of Volume I of the MSHCP states that future facilities including electric utilities, should be located in the least environmentally sensitive feasible location and use roads, trails, and other disturbed areas to the greatest extent feasible and should follow previously existing roads, easements, rights of way, and disturbed areas, minimizing habitat fragmentation. Since the Project would be located within previously disturbed areas within SCE ROW, it would not conflict with the MSHCP in regards to land use and planning. Therefore, no impact would occur. (No Impact)

4.11.5 Alternatives

4.11.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would have no effect on land use and planning. (No Impact)

4.11.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Alternative B would traverse the same land use and zoning designations as the proposed Mira Loma-Jefferson subtransmission line and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the cities of Ontario, Chino, Eastvale, Norco, or Corona. Alternative B would not physically divide an established community or conflict with an HCP or an NCCP. Construction, operation, and maintenance activities associated with Alternative B would be the same for the proposed Mira Loma-Jefferson subtransmission line (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Construction, operation, and maintenance activities associated with Alternative C1 would be nearly the same as for the proposed Mira Loma-Jefferson subtransmission line. Although construction impacts related to air quality and noise would be slightly greater than the Project (see Section 4.3, *Air Quality* and Section 4.13, *Noise*) due to increased construction activities associated with undergrounding the line for this alternative. Alternative C1 would traverse the same land use and zoning designations as the proposed Mira Loma-Jefferson subtransmission line and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the City of Eastvale. Alternative C1 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Construction, operation, and maintenance activities associated with Alternative C2 would be nearly the same as the proposed Mira Loma-Jefferson subtransmission line. Although construction impacts related to air quality and noise associated with the underground portion of this alternative would be slightly greater compared to the proposed Project (see Section 4.3, *Air Quality* and Section 4.13, *Noise*), overall impacts would be similar because Alternative C2 would be 1.5 miles shorter than the proposed subtransmission line. Alternative C2 would traverse similar land use and zoning designations as the proposed Mira Loma-Jefferson subtransmission line and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the cities of Ontario, Eastvale, Norco, or Corona. Alternative C2 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would traverse similar land use and zoning designations as the proposed Pedley and Databank 66 kV source lines and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation in the City of Corona. Alternative C3 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

4.11.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would be located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona, just north of the proposed substation site (see Figure 3-3, *Alternative D1: 12 kV Distribution-Level Battery Storage Conceptual Layout*). The alternative site has the same land use designation (*General Industrial*) as the proposed substation site and would be similarly constructed on vacant, disturbed land. Alternative D1 would not physically divide an established community; conflict with any applicable land use plan, policy, or regulation of the City of Corona; or conflict with an HCP or an NCCP (No Impact).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would be located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona, just east of the proposed substation site (see Figure 3-6, *66 kV Source Line and Substation Alternatives*). The alternative site has the same land use designation (*General Industrial*) as the proposed substation site and would be similarly constructed on vacant, disturbed land. Alternative D2 would not physically divide an established community; conflict with any applicable land use plan, policy, or regulation of the City of Corona; or conflict with an HCP or an NCCP (No Impact).

Alternative E1: Quarry Street 66 kV Source Line Segment

Construction, operation, and maintenance activities associated with Alternative E1 would be nearly the same as the proposed Pedley Source Lines. Although construction impacts related to air quality and noise would be slightly greater than the Project (see Section 4.3, *Air Quality* and Section 4.13, *Noise*) due to increased construction activities associated with undergrounding this segment of the line, Alternative E1 would traverse similar land use and zoning designations as the proposed Pedley Source Lines and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the City of Corona. Alternative E1 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Construction, operation, and maintenance activities associated with Alternative E2 would be nearly the same as the proposed Pedley Source Lines. Although construction impacts related to air quality and noise would be slightly greater than the Project (see Section 4.3, *Air Quality* and Section 4.13, *Noise*) due to increased construction activities associated with undergrounding this segment of the line, Alternative E2 would traverse the same land use and zoning designations as the proposed Pedley Source Lines and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the City of Corona. Alternative E2 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

Alternative E3: Southern 66 kV Source Lines Alignment

Construction, operation, and maintenance activities associated with Alternative E3 would be nearly the same as the proposed Databank Source Lines. Construction impacts related to air quality and noise would be slightly less than the Project (see Section 4.3, *Air Quality* and Section 4.13, *Noise*) due to reduced construction activities associated with undergrounding the line for this alternative. Alternative E3 would traverse similar land use and zoning designations as the proposed Databank Source Lines and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the City of Corona. Alternative E3 would not physically divide an established community or conflict with an HCP or an NCCP (No Impact).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would traverse the same land use and zoning designations as the proposed Pedley Source Lines and similarly no impact would result regarding conflicts with any applicable land use plan, policy, or regulation of the City of Corona. Alternative E4 would not physically divide an established community or conflict with an HCP or an NCCP. Construction, operation, and maintenance activities associated with Alternative E4 would be the same for the proposed Pedley Source Lines. Impacts associated with the construction and operation of the Circle City Substation and source lines would not occur under this alternative (No Impact).

References – Land Use and Planning

California Public Utilities Commission (CPUC), 2016. Program Review, California Overhead Conversion Program, Rule 20A, For Years 2011-2015. November 23, 2016.

CPUC, 2017. Overhead to Underground Conversions of Electric Lines, Program Description. Available online at: http://www.cpuc.ca.gov/General.aspx?id=4403.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 13, 2016.

City of Chino. 2015a. City of Chino General Plan Map. Available online at: www.cityofchino.org/home/showdocument?id=11248. Accessed on June 13, 2016.

City of Chino. 2015b. City of Chino Zoning Map. Available online at: www.cityofchino.org/home/showdocument?id=11250. Accessed on June 13, 2016.

City of Corona, 1983. The Township in Corona Specific Plan. Available online at: www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/SPs/SP82-1.pdf. Accessed on June 13, 2016.

City of Corona, 2002a. Corona Magnolia Specific Plan. Available online at: www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/SPs/SP01-002.pdf. Accessed on June 13, 2016.

City of Corona, 2002b. Resolution No. 2002-49, Declaring its intention to authorize underground installation of overhead utility wires and related facilities and to establish an Underground Utility District No. 10. Approved June 5, 2002.

City of Corona, 2004. City of Corona General Plan. Available online at: www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on June 13, 2016.

City of Corona, 2011. Downtown Revitalization Specific Plan. Available online at: www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/SPs/SP98-01.pdf. Accessed on June 13, 2016.

City of Corona, 2014a. City of Corona Zoning and Specific Plans. Last updated August 11, 2014. Available online at: www.discovercorona.com/CityOfCorona/media/Media/Community Development/Maps/Zoning.pdf. Accessed on July 12, 2016.

City of Corona, 2014b. North Main Street District Specific Plan. Available online at: www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/SPs/SP99-01.pdf. Accessed on June 13, 2016.

City of Eastvale, 2012. City of Eastvale General Plan. Available online at: www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 13, 2016.

City of Eastvale, 2015a. City of Eastvale Land Use Map. Revised June 19, 2015. Available online at: www.eastvaleca.gov/home/showdocument?id=3898 Accessed on June 13, 2016.

City of Eastvale, 2015b. City of Eastvale Zoning Map. Revised June 19, 2015. Available online at: www.eastvaleca.gov/home/showdocument?id=3896. Accessed on June 13, 2016.

City of Norco, 2001. City of Norco General Plan, Land Use Element. Last update adopted June 6, 2001.

City of Norco. 2012a. City of Norco General Plan Land Use Map. Updated May 25, 2012. Available online at: www.norco.ca.us/civicax/filebank/blobdload.aspx?BlobID=2798. Accessed on June 13, 2016.

City of Norco, 2012b. City of Norco Zoning Map. Updated May 21, 2013. Available online at: www.norco.ca.us/civicax/filebank/blobdload.aspx?BlobID=2803. Accessed on July 12, 2016.

City of Ontario, 2007. Rich-Haven Specific Plan, Land Use. Available online at: www.ontarioca.gov/planning/maps/specific-plan-land-use-maps-documents/rich-haven. Accessed on June 13, 2016.

City of Ontario. 2008. Subarea 29 Specific Plan, Land Use. Available online at: www.ontarioca.gov/planning/maps/specific-plan-land-use-maps-documents/subarea-29-2. Accessed on June 13, 2016.

City of Ontario. 2009. Edenglen Specific Plan. Available online at: www.ontarioca.gov/planning/maps/specific-plan-land-use-maps-documents/edenglen. Accessed on June 13, 2016.

City of Ontario, 2010. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 13, 2016.

City of Ontario, 2013. Draft Environmental Impact Report for the Grand Park Specific Plan. August 1, 2013.

City of Ontario. 2015a. Ontario Plan Land Use Element. May 21, 2015. Available online at: www.ontarioplan.org/policy-plan/lu-land-use-element. Accessed on June 13, 2016.

City of Ontario. 2015b. Zoning Map. Adopted by City Council 12-1-2015. Available online at: www.ontarioca.gov/planning/maps/zoning-map. Accessed on June 13, 2016.

County of Riverside, 2015a. Riverside County General Plan. December 15, 2015. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 13, 2016.

County of Riverside, 2015b. Temescal Canyon Area Plan. December 8, 2015. Available online at: http://planning.rctlma.org/Portals/0/genplan/general_plan_2016/area_plans/TCAP_120815m.pdf?ver=2016-04-01-101036-443. Accessed on June 13, 2016.

County of San Bernardino, 2007. County of San Bernardino General Plan, as amended through 2014. Available online at: www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed on July 12, 2016.

Riverside County Airport Land Use Commission (ALUC), 2004. Riverside County Airport Land Use Compatibility Plan. Volume 1, Policy Document. Adopted October 14, 2004. Available online at: www.rcaluc.org/Plans/New-Compatibility-Plan. Accessed on June 29, 2016.

Western Riverside County Regional Conservation Authority, 2003. Final Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Volume I, Section 7-Covered Activities/Allowable Uses. June 17, 2003. Available online at: http://wrc-rca.org/Permit_Docs/MSHCP_Docs/volume1/Vol1-Sec7.pdf. Accessed July 12, 2016.

This page intentionally left blank

4.12 Mineral Resources

This section describes the existing sources of mineral resources in the Project area and evaluates whether construction, operation, and maintenance of the Project and alternatives would result in impacts associated with mineral resources.

4.12.1 Setting

4.12.1.1 Past and Current Mineral Resource Extraction

Terrain in the Temescal Valley area consists of rugged mountains, rolling highlands, alluvial valley floors, and river bottom. A total of 31 separate areas covering a combined 18 square miles of land within the Temescal Valley area are classified as containing, or likely to contain, significant mineral deposits (Miller, Shumway, and Hill, 1991). Before about 1900, gold and precious metal mining occurred in the Temescal Valley area. Few metal mines in the area ever operated at a profit. However, industrial minerals such as limestone, specialty sands, clays, and rock products such as construction aggregate became economically important in the area (Miller, Shumway, and Hill, 1991). Several once-producing aggregate and riprap mines are within 0.25 mile of the source lines and Circle City Substation site (USGS, 2006); and within 2 miles of the Mira Loma-Jefferson subtransmission line, source line, and Circle City Substation site, 22 producers or past producers are present (USGS, 2006). The nearest active mine, the Corona Pit aggregate surface mine, is approximately 1 mile east of the Circle City Substation site. The Corona Division Quarry and Mill, 1.2 miles north of the Pedley Source Lines, is the only other active producer within 2 miles of the project alignment (USGS, 2006). Active and abandoned mines or quarries where clay, sand, or gravel were/are mined are located both north and south of the proposed Circle City Substation site along the Temescal Wash (City of Corona, 2004).

The California Division of Oil, Gas, and Geothermal Resources (DOGGR) oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California, and tracks every known oil and gas well and field in the State. Maps maintained by DOGGR indicate that two active and two plugged oil and gas wells are within 0.25 mile of the Mira Loma-Jefferson subtransmission line. The Project alignments are not located on a known oil or gas field (DOGGR, 2016).

4.12.1.2 State Classified Mineral Resources

In accordance with the Surface Mining and Reclamation Act of 1975, the California Department of Conservation, Division of Mines and Geology, currently known as the California Geological Survey (CGS), has mapped nonfuel mineral resources of the State to show where economically significant mineral deposits are either present or likely to occur based on the best available scientific data. These resources have been mapped using the California Mineral Land Classification System, which includes the following four Mineral Resource Zones (MRZs):

- ***MRZ-1.*** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

- ***MRZ-2.*** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- ***MRZ-3.*** Areas containing mineral deposits, the significance of which cannot be evaluated.
- ***MRZ-4.*** Areas where available information is inadequate for assignment to any other zone.

Due to the variety of mineral resources in the area, the California Division of Mines and Geology (CDMG) mapped the nonfuel mineral resources in the area for deposits formed by hydrothermal processes, for industrial minerals[1], and for aggregate resources. Mineral resources classified as MRZ-2 in the City of Corona generally consist of clay and construction aggregates (crushed rock, sand, and gravel) (City of Corona, 2004). The Project alignments are in areas classified MRZ-4 for hydrothermally deposited mineral resources and industrial minerals (Miller, Shumway, and Hill, 1991). The Circle City Substation site is located within an area classified as MRZ-2b for aggregate resources; the remainder of the areas traversed by the Project alignments are classified as MRZ-3a for aggregate resources, particularly sand and gravel (Miller, Shumway, and Hill, 1991).

The region is within the Orange County-Temescal Production-Consumption Region for aggregate. The majority of the project alignments are in areas classified as MRZ-3 for sand and gravel, with the exception of a small portion of the Pedley Source Lines alignment that crosses State Route 91 and a short segment of the Mira Loma-Jefferson subtransmission line alignment along River Road, which are classified as MRZ-2. These areas overlap with the MRZ-2b classification described in the Mineral Land Classification of the Temescal Valley Area. The aggregate demand in Temescal Valley-Orange County Production-Consumption Region is projected to be more than one billion tons by the end of 2060 (CGS, 2012). Permitted reserves in the region have been estimated to be sufficient to meet about 28 percent of the projected demand in the Region (CGS, 2012). The California Geological Survey (CGS) estimates that it will take 7 to 16 years (projected as 11 to 20 years in 2012) before existing permitted reserves in the region are extracted.

Fontana Paving Inc. mined the Corona Plant Area, which is classified MRZ-2 and produced asphaltic concrete aggregate from the recent alluvium in Temescal Wash from 1962 to at least 1991 (Miller, Shumway, and Hill, 1991). The City of Norco has two mineral resource zoning designations, based on the zones identified in State Report 165 "Mineral Land Classification of the Temescal Valley Area." Norco is mapped MRZ-3a for sand and gravel or for crushed stone (Miller, Shumway, and Hill, 1991); the city limits extend into the Temescal Wash area mapped MRZ-2b for sand and gravel.

The Project alignments and the Circle City Substation site are also within the Temescal Valley Production Area for Portland cement concrete (PCC) grade aggregate. The project alignment is adjacent to, but does not intersect, State designated areas[2] lost to land uses incompatible with

[1] Naturally occurring earth materials exclusive of metallic ores, fuels, or gemstones. In the Temescal Valley area, the industrial minerals of economic importance are clays, limestone, specialty sands, gypsite, and feldspar (Miller, Shumway, and Hill, 1991).

[2] Designation is the formal recognition by the California State Mining and Geology Board of lands containing resources of regional or statewide significance that are needed to meet future demand.

mining as well as areas recently classified as containing regionally significant PCC-grade aggregate resources (Miller and Busch, 2014).

4.12.1.3 Regulatory Setting

Federal

No federal regulations apply to mineral resources along the project alignment.

California Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA) of 1975 (Chapter 9, Division 2, Section 2710 et seq. of the Public Resources Code) requires the State Mining and Geology Board to adopt state policies for reclaiming mined lands and conserving mineral resources. Title 24 of the California Code of Regulations, Division 2, Chapter 8, Subchapter 1 contains these policies.

In accordance with SMARA, the State has established the California Mineral Land Classification System to help identify and protect mineral resources in areas that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Protected mineral resources include construction materials, industrial and chemical mineral materials, metallic and rare minerals, and nonfluid mineral fuels.

Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the proposed Project. Pursuant to CPUC General Order (G.O.) 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the proposed Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

Riverside County General Plan

Areas mapped as Open Space-Mineral Resources (MR) are where either mineral extraction and processing facilities are located or are areas held in reserve for future mineral extraction and processing. The Open Space-Mineral Resource land use designation allows for mineral extraction and processing facilities designated on the basis of the SMARA classification. No portion of the Project sites are mapped Open Space-Mineral Resources. Areas held in reserve for future mining activities also fall under this designation. The Riverside County General Plan includes the following policy relative to mineral resources:

> *Policy LU 21.2: Protect lands designated as Open Space.* Mineral Resource from encroachment of incompatible land uses through buffer zones or visual screening.

City of Corona General Plan

The City of Corona recognizes, accepts, and adopts by reference State Classification and Designation Reports. When a Classification and/or Designation Report is presented to the City, a "MR" Overlay Zone designation is placed on the City's Zoning Map to reflect the State report. The MR overlay zone when shown in combination with another zone (Agricultural, General Manufacturing or Heavy Manufacturing zones) permits certain uses not otherwise permitted in the underlying zone. The mineral overlay zone is normally assigned to property that has an existing mining operation or is listed as MRZ-2 in the State Classification Report (City of Corona, 2012). No areas of the project alignments in the City of Corona are within the current mineral overlay zone (City of Corona, 2014).

City of Chino General Plan

The Open Space and Conservation Element of the Chino General Plan includes goals, objectives, and policies related to mineral resources. The Mira Loma-Jefferson subtransmission line alignment occurs in an area mapped as MRZ-3 in the City of Chino. It is the policy of Chino to restrict permitted uses on lands containing and adjacent to important sand and gravel resources to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.

City of Norco General Plan

The Conservation Element of the Norco General Plan identifies the mineral land classifications of the city, based on mapping completed by the California Department of Mines and Geology. The Conservation Element states that remaining open areas identified as MRZ-3a or MRZ-2b are either more valuable to the City as open space than as a potential mineral resource or do not constitute enough feasible land to warrant any type of preservation for future mineral extraction (City of Norco, 2002) For these reasons, no goals or policies encouraging or preserving opportunities for mineral extraction are included in the General Plan.

4.12.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant mineral resources effects on the environment if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.12.3 Applicant Proposed Measures

No applicant proposed measures have been identified by Southern California Edison to reduce project impacts on mineral resources.

4.12.4 Impacts and Mitigation Measures

4.12.4.1 Approach to Analysis

To evaluate impacts of the Project on mineral resources, the locations of Project components were compared with maps of known mineral resources of value to the state, region, and local jurisdictions to determine whether Project components would occur on or otherwise limit access to these resources.

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Impact 4.12-1: The Project would install structures within an area where significant mineral deposits have been mapped by the state. *Less than Significant* (Class III)

The Project would not affect oil and gas extraction because Project facilities would not interfere with operation of existing active wells or be constructed adjacent to a known oil and gas field. In addition, no areas classified as containing PCC-grade aggregate would be affected by the Project. While construction would include excavation in areas mapped as potential or known aggregate mineral resources and long-term operations of the Project would occur in these same areas, the Project facilities would be installed in locations that have already been developed for other purposes and thus would not affect the availability of a known mineral resource that would be of value to the region and residents of the state, as described below.

Sections of the Pedley Source Lines from west of I-15 and crossing Temescal Wash would traverse an area mapped as MRZ-2b for sand and gravel resources. Nearby areas are currently and have been mined for these resources, along with clay. Poles along this portion of the Pedley Source Lines would replace existing wood poles, with the exception of the installation of one new TSP at the end of Quarry Street in a developed area and extending one underground distribution duct bank to the new TSP. The duct bank extension would occur under the street, an area already unavailable for mineral resource extraction. The Mira Loma-Jefferson subtransmission line between River Road and the Corona Substation would traverse an area mapped as MRZ-2; however, this section of the subtransmission line would be installed within an existing duct bank within North Cota Street. The Databank Source Lines along Magnolia Avenue in the approximate area between Interstate 15 and Trademark Circle would also be installed within an area designated MRZ-2 by the state.

While these lines would include new poles and new underground vaults and duct banks, all of these facilities would be installed along or within streets, in areas already unavailable for mineral resource extraction. For these reasons, while the Project would be installed in areas mapped as underlain by known mineral resources, the availability of these known mineral resources that would be of value to the region and the residents of the state would not change as a result of the Project. The impact of the Project on these resources would be less than significant.

Mitigation: None required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Impact 4.12-2: The Project could result in the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans. *Less than Significant* (Class III)

As discussed in Impact 4.12-1, segments of the Project alignments traverse areas mapped by the state as MRZ-2 for sand and gravel in Corona; however, no areas of the alignment are within the current mineral overlay zone of Corona. The Mira Loma-Jefferson subtransmission line alignment traverses the eastern border of land mapped as MRZ-3 for sand and gravel by the City of Chino, indicating that known mineral deposits that could be locally significant occur in the area. However, the Project would install LWS poles and TSPs along Hellman Avenue, an area already unavailable for mineral resource recovery. No mineral resource zones have been mapped by the City of Eastvale. No goals or policies encouraging or preserving opportunities for mineral extraction are included in the Norco General Plan. Mineral resources land use areas are identified in the Riverside County General Plan; the Project would not traverse any of these areas and thus the availability of these mineral resources would not change as a result of the Project. The Project therefore would have a less-than-significant effect on the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans.

Mitigation: None required.

4.12.5 Alternatives

4.12.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction, operation, and maintenance-related impacts on mineral resources that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, would not occur. Therefore, there would be no impact under the No Project Alternative (No Impact).

4.12.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Alternative B would include construction and operation of the Mira Loma-Jefferson Subtransmission Line and associated facilities as proposed, but would not include construction and operation of the proposed Circle City Substation or its associated facilities. Under Alternative B, construction, operation, and maintenance-related impacts to mineral resources that would result

from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

By not constructing the Circle City Substation, this alternative would remove slightly less sand and gravel than the proposed Project. Installation of remaining facilities that include subgrade components, such as pole foundations, duct banks, and vaults, would occur in areas within SCE right-of-way or within streets, areas where mineral resources are already unavailable. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). Similar to the proposed Project, this alternative would have a less-than-significant impact on the availability of locally-important mineral resources delineated on local land use plans (Impact 4.12-2; Class III).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 differs from the proposed Mira Loma-Jefferson subtransmission line in that it includes a half-mile-long underground conduit installation within Hellman Avenue from its intersection with American Heroes Park to its intersection with Pine Avenue/Schleisman Road. Under Alternative C1, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

Given the additional underground line construction work that would be associated with this alternative compared to the proposed Mira Loma-Jefferson subtransmission line, the amount of sand and gravel mineral deposits removed during construction of this alternative would be higher. However, installation of duct banks and vaults would occur in areas within streets where known mineral resources are already unavailable. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). In addition, this alternative would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans because the additional half-mile-long conduit would be installed in areas where mineral resources are already unavailable (Impact 4.12-2; Class III).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 differs from the proposed Mira Loma-Jefferson subtransmission line in that it would transition to an underground line at Archibald Avenue and continue within Archibald Avenue to Smith River Road, where it would transition to overhead, and continue south along Archibald Avenue. Like the proposed Project, it would span the Santa Ana River, but unlike the Project, this alternative would result in an additional 1.2 miles of the line being installed underground. Under Alternative C2, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

The subtransmission line alignment under this alternative would not cross additional known mineral resource occurrences (areas mapped by the State as MRZ-2) not otherwise affected by the proposed Project. Installation of pole foundations, duct banks, and vaults would occur in areas within SCE right-of-way or within streets, areas where mineral resources are already unavailable. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). This alternative would relocate a portion of the proposed Project from Chino to within Eastvale, where no mineral resource zones have been mapped by the City; therefore, this alternative would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans (Impact 4.12-2; Class III).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would result in the construction of up to three battery storage and substation facilities instead of the Mira Loma-Jefferson 66 kV line component of the Project. Under Alternative C3, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to or reduced compared to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

The battery storage and substation facilities proposed under this alternative would not be built on additional known mineral resource occurrences (areas mapped by the State as MRZ-2) not otherwise affected by the proposed Project. Installation of pole foundations, duct banks, and vaults would occur in areas within SCE right-of-way or within streets, areas where mineral resources are already unavailable. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). Similar to the proposed Project, this alternative would have a less-than-significant impact related to the availability of locally-important mineral resources delineated on local land use plans because the battery storage and substation facilities would not be installed in areas mapped as locally-important by the City of Corona and would be installed in areas where mineral resources are already unavailable (Impact 4.12-2; Class III).

4.12.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would result in the construction of a battery storage facility, distribution connections, and ~~a~~ telecommunication connections instead of the proposed Circle City Substation and associated source lines components of the Project. The battery storage facility would be constructed immediately adjacent to the proposed Circle City Substation and the communications line would be constructed along the same alignment as the proposed Databank Source Lines. Under Alternative D1, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result

under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

Given the reduced construction work that would be associated with this alternative compared to the proposed Project, the amount of sand and gravel mineral deposits removed during construction of this alternative would be reduced. The installation of duct banks and vaults would occur in areas within streets where mineral resources are already unavailable. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). In addition, this alternative would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans because the facilities would not be installed in areas mapped as locally-important by the City of Corona and would be installed in areas where mineral resources are already unavailable (Impact 4.12-2; Class III).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would differ from the proposed Project by locating the Circle City Substation at a parcel just east of the proposed substation site. Under Alternative D2, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

The parcel where the substation would be sited under this alternative is mapped MRZ-3a for sand and gravel, which are known to occur in the area, but their mineral resource economic significance has not been determined. In addition, the amount of aggregate mineral deposits removed during construction of this alternative would be substantially the same as the amount that would be removed from the proposed substation site. For these reasons, access to and availability of known mineral resources that would be of value to the region and the residents of the state would not be substantially lost as a result of implementation of Alternative D2, and the associated impact would be less than significant (Impact 4.10-1; Class III). Similar to the proposed Project, this alternative would have a less-than-significant impact related to the availability of locally-important mineral resources delineated on local land use plans because the facilities would not be installed in areas mapped as locally-important by the City of Corona (Impact 4.10-2; Class III).

Alternative E1: Quarry Street 66 kV Source Lines Segment

Alternative E1 would differ from the proposed Project by traveling along Quarry Street, parallel to and south of the proposed Pedley Source Lines alignment on 3rd Street. Under Alternative E1, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

Given the additional underground line construction work that would be associated with this alternative compared to the proposed Pedley Source Lines, the amount of aggregate mineral resources removed during construction of this alternative would be higher. However, as this

underground infrastructure would be installed in areas already unavailable for mineral resource extraction, the associated impact would be less than significant (Impact 4.10-1; Class III). Alternative E1 would not cross any areas containing known mineral resources beyond those identified for the proposed Project. The Alternative E1 alignment is not within the City of Corona mineral resource overlay; thus, same as for the proposed Pedley Source Lines, Alternative E1 would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans (Impact 4.10-2; Class III).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines, but would be installed underground from just west of I-15 to the proposed Circle City Substation site. Under Alternative E2, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the Proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

This alternative underground segment of the Pedley Source Lines would be constructed in an area identified by the State as MRZ-3a for sand and gravel, which are known to occur in the area, but their mineral resource significance has not been determined. Given the additional underground line construction work that would be associated with this alternative compared to the proposed Pedley Source Lines, the amount of aggregate mineral resources removed during construction of this alternative would be higher. However, installation of duct banks and vaults would occur in areas within SCE right-of-way or within streets, areas already unavailable for mineral resource extraction; for this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). Same as for the proposed Pedley Source Lines, this alternative would not be constructed within the City of Corona mineral resource overlay but would traverse a County-adopted state-classified mineral resource area; thus, similar to the proposed Project, Alternative E2 would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans (Impact 4.12-2; Class III).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an overhead line alternative to the proposed Databank Source Lines. This alternative route, running overhead, would begin at the intersection of Old Temescal Road and Compton Avenue, and then would continue north along Compton Avenue to Pico Street, where it would continue north to a location where it would cross over I-15, and proceed in a northeasterly direction across vacant land, across Sherborn Street, and across a small body of water to All American Way, where it would enter the southern end of the substation site. Under Alternative E3, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be increased compared to those that would result under the proposed Project.

Alternative E3 would be installed in areas mapped as MRZ-2b for sand and gravel along Temescal Wash east of I-15 and in areas mapped as MRZ-3 for aggregate from just east of I-15 to

the southern extent of the source line. These same mineral resource occurrences would be affected by the proposed Project. Because Alternative E3 would require no underground line construction work (it would avoid open trenching proposed within Magnolia Avenue), it would decrease the amount of aggregate mineral resources removed during construction compared to the proposed Databank Source Lines. While this alternative would include additional installation of permanent structures in known mineral deposits, these permanent structures along this segment would be installed along roadways and adjacent to a landfill, locations already unavailable for mineral resource extraction. For this reason, the associated impact would be less than significant (Impact 4.12-1; Class III). Relative to the proposed Project, this alternative would have an increased impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans because the overhead lines would traverse an area mapped as mineral resource recovery by the City of Corona; however, in this area the line would be immediately adjacent to a drainage canal, which makes the area already unavailable for mineral resource extraction. The impact would be less than significant (Impact 4.12-2; Class III).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would include the same facilities as the proposed Project, without the Pedley Source Lines and with an additional underground telecommunications line between the Circle City and Corona Substations. Under Alternative E4, construction, operation, and maintenance-related impacts to mineral resources that would result from implementation would be similar to those that would result under the proposed Project, as discussed in Section 4.12.4, *Impacts and Mitigation Measures*, and summarized below.

Given the reduced underground line construction work that would be associated with this alternative compared to the proposed Pedley Source Lines, the amount of aggregate mineral resources removed during construction of this alternative would be less. As this underground infrastructure would be installed in areas already unavailable for mineral resource extraction, the associated impact would be less than significant (Impact 4.12-1; Class III). The Alternative E4 alignment is not within the City of Corona mineral resource overlay; thus, Alternative E4 would have a less-than-significant impact related to the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans (Impact 4.12-2; Class III). Alternative E4 would not cross any areas containing known mineral resources beyond those identified for the proposed Project.

References – Minerals

California Division of Oil, Gas, and Geothermal Resources (DOGGR), 2016. Division of Oil, Gas and Geothermal Resources Well Finder. Available online http://maps.conservation.ca.gov/doggr/#close accessed July 8, 2016.

California Geological Survey (CGS), 2012. *Map Sheet 52: Aggregate Sustainability in California*.

City of Corona, 2004. *City of Corona General Plan.* Adopted March 17.

City of Corona, 2012. *City of Corona Initial Study/Environmental Checklist, Temescal Valley Annexation*. SCH Number 2012121015. October 22.

City of Corona, 2014. *City of Corona Zoning and Specific Plans*. Map. Last updated August 11, 2014.

City of Norco, 2002. *City of Norco General Plan, Conservation Element*. Last update adopted February 6, 2002.

Miller, R.V., and L.L. Busch, 2014. *Update of Mineral Land Classification for Portland Cement Concrete-grade Aggregate in the Temescal Valley Production Area, Riverside County, California.* CGS Special Report 231.

Miller, R.V., D.O. Shumway, and R.L. Hill, 1991. *Mineral Land Classification of the Temescal Valley Area, Riverside County, California.* California Division of Mines and Geology, Special Report 165.

U.S. Geological Survey (USGS), 2006. Mineral Resources Data System GIS data. Available online http://mrdata.usgs.gov/mrds/ accessed June 9, 2016.

4.13 Noise

This section evaluates potential impacts associated with noise levels from construction, operation, and maintenance of the Project and alternatives.

4.13.1 Setting

4.13.1.1 Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead focusing on the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All sound pressure levels and sound power levels reported below are A-weighted.

Noise Exposure and Ambient Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, noise varies continuously with time with respect to the contributing sound sources of the noise environment. Noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes noise constantly variable throughout a day.

These successive additions of sound to the noise environment vary the noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately

characterize a noise environment and evaluate noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Different noise descriptors discussed in this analysis are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{dn}: The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and seven a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: The Community Noise Equivalent Level (CNEL) is a 24-hour L_{eq} that adds a five dBA penalty to noise occurring during evening hours from 7:00 p.m. to 10:00 p.m., and a 10 dBA penalty to sounds occurring between the hours of 10:00 p.m. to 7:00 a.m. to account for the increased sensitivity to noise events that occur during the quiet late evening and nighttime periods.

L_x: A-weighted noise levels that are exceeded *x* percent of the time during the measurement period. For example L_{10} indicates the noise level was exceeded 10 percent of the time during the measurement period.

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels that one has adapted, which is referred to as the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;

- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale; it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise sources, the resulting noise level equals 70.4 dBA.

Nighttime noise has a higher potential to affect sleep. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening. (LAWA, 2012).

Health effects from noise have been studied around the world for nearly 30 years. Scientists have attempted to determine if high noise levels can adversely affect human health apart from auditory damage. These research efforts have covered a broad range of potential impacts from cardiovascular response from fetal weight to mortality. While a relationship between noise and health effects seems plausible, it has yet to be convincingly demonstrated-that is, shown in a manner that can be repeated by other researchers while yielding similar results. In a review of 30 studies conducted worldwide between 1993 and 1998, a team of international researchers concluded that, while some findings suggest that noise can affect health, improved research concepts and methods are needed to verify or discredit such a relationship. The team of international researchers called for more study of the numerous environmental and behavioral factors than can confound, mediate, or moderate survey findings. Until science refines the research process, a direct link between a single source noise exposure and non-auditory health effects remains to be demonstrated (LAWA, 2012).

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In

many cases, noise attenuation from a point source increases to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noises such as a street with moving vehicles (a "line" source) would typically attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict.

Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance. However, for a vegetative strip to have a noticeable effect on noise levels, it must be dense and wide. For example, a stand of trees must be at least 100 feet wide and dense enough to completely obstruct a visual path to the roadway to attenuate traffic noise by 5 dBA (Caltrans, 1998). A row of structures can shield more distant receivers depending upon the size and spacing of the intervening structures and site geometry. Similar to vegetative strips discussed above, noise barriers, which include natural topography and soundwalls, reduce noise by blocking the line of sight between the source and receiver. Generally, a noise barrier that breaks the line of sight between source and receiver will provide at least a 5-dBA reduction in noise.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration (FTA, 2006). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earth-moving equipment. The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV).

4.13.1.2 Existing Ambient Noise Environment

The proposed Project would be constructed in rural agricultural areas, open space, and adjacent to several residential areas. Existing noise sources in the area include lawn mowers, power equipment, air conditioners, vehicles on roadways and trains on a railroad, aircraft overflights, and the operation of agricultural equipment. In order to evaluate existing ambient noise in the proposed Project area, Southern California Edison (SCE) had noise measurements collected at four locations along source line alignments and the subtransmission line alignment as seen in **Figures 4.13-1**, *Noise Monitoring Locations (Source Line Alignments)* and **Figure 4.13-2**, *Noise Monitoring Location Map (Subtransmission Line)*. These locations were selected as they are considered representative of other sensitive receptor locations throughout the vicinity of the Project sites. Existing ambient noise levels were measured in a 24-hour series of 1-hour equivalent sound level measurements (L_{eq}, A-weighted). The results of SCE's noise monitoring are shown below in **Table 4.13-1**, *Measured Ambient Noise Levels in the Project Area*.

TABLE 4.13-1
SUMMARY OF MEASURED AMBIENT NOISE LEVELS (DBA) AT SENSITIVE RECEPTORS

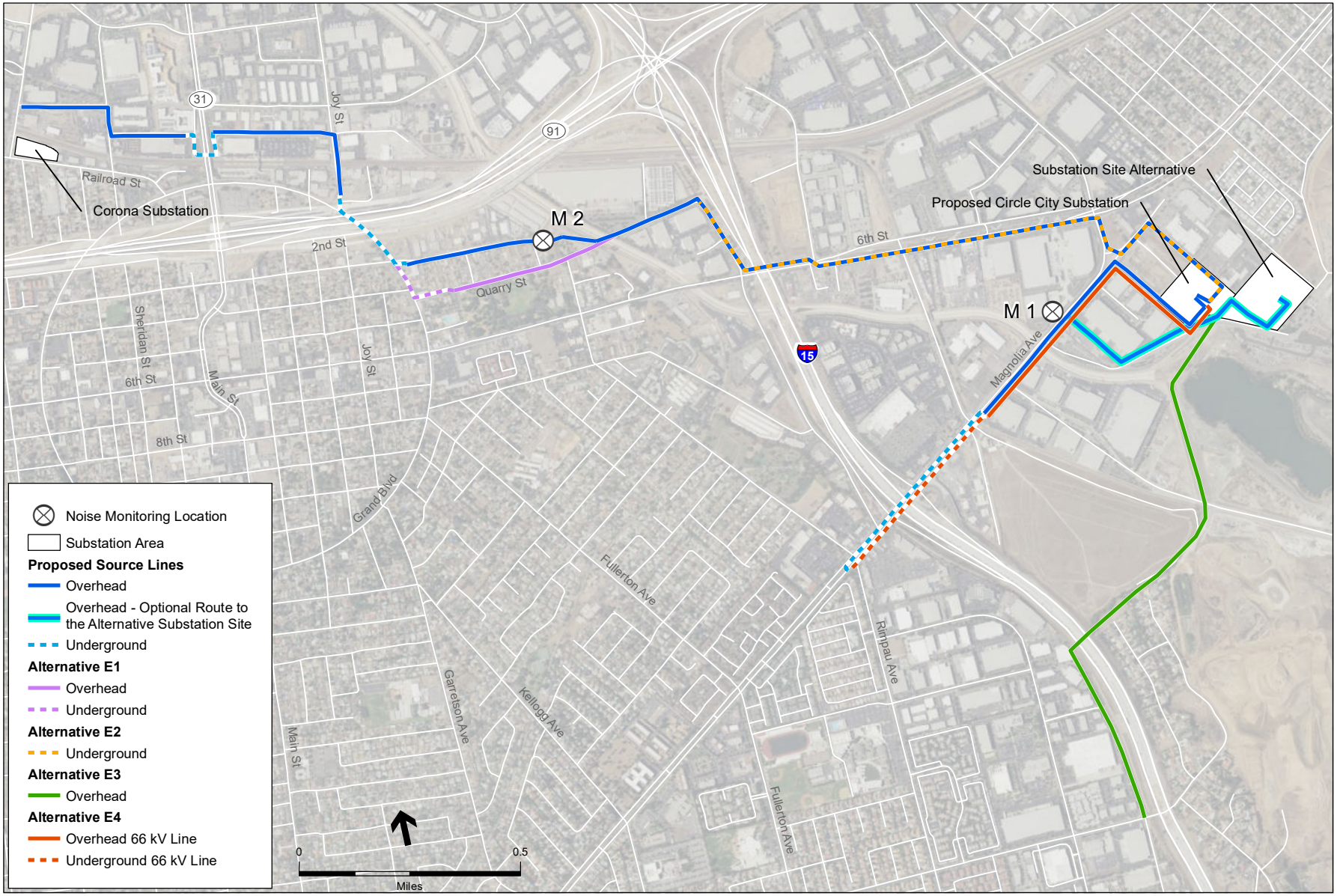
Map No.	Location	Daytime (7 a.m. -7 p.m.)		Nighttime (7 p.m. -7 a.m.)		CNEL
		Highest 1-hr L_{eq}	Lowest 1-hr L_{eq}	Highest 1-hr L_{eq}	Lowest 1-hr L_{eq}	
1	North side of Magnolia Avenue in City of Corona, across the street from the Databank Source Lines alignment.	72.2	69.5	70.8	64.7	75.6
2	The end of East Third Street in City of Corona, adjacent to the Pedley Source Lines alignment and residences.	74.2	61.3	69.6	58.5	72.8
3	Near the northwest corner of River Road and Corydon Avenue in City of Corona, adjacent to the Mira Loma-Jefferson subtransmission line alignment.	69.3	65.1	66.6	54.0	70.1
4	Residential neighborhood at Apple Moss Court in City of Eastvale, adjacent to the Mira Loma-Jefferson subtransmission line alignment.	60.7	51.3	53.8	42.8	57.5

NOTE: The noise monitoring results summary is based on 24 hours of continuous measurement data collected on Wednesday, March 1, 2017.

SOURCE: Acentech, 2017.

4.13.1.3 Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Below are descriptions of the numerous sensitive receptors near the Project and alternative sites and alignments.

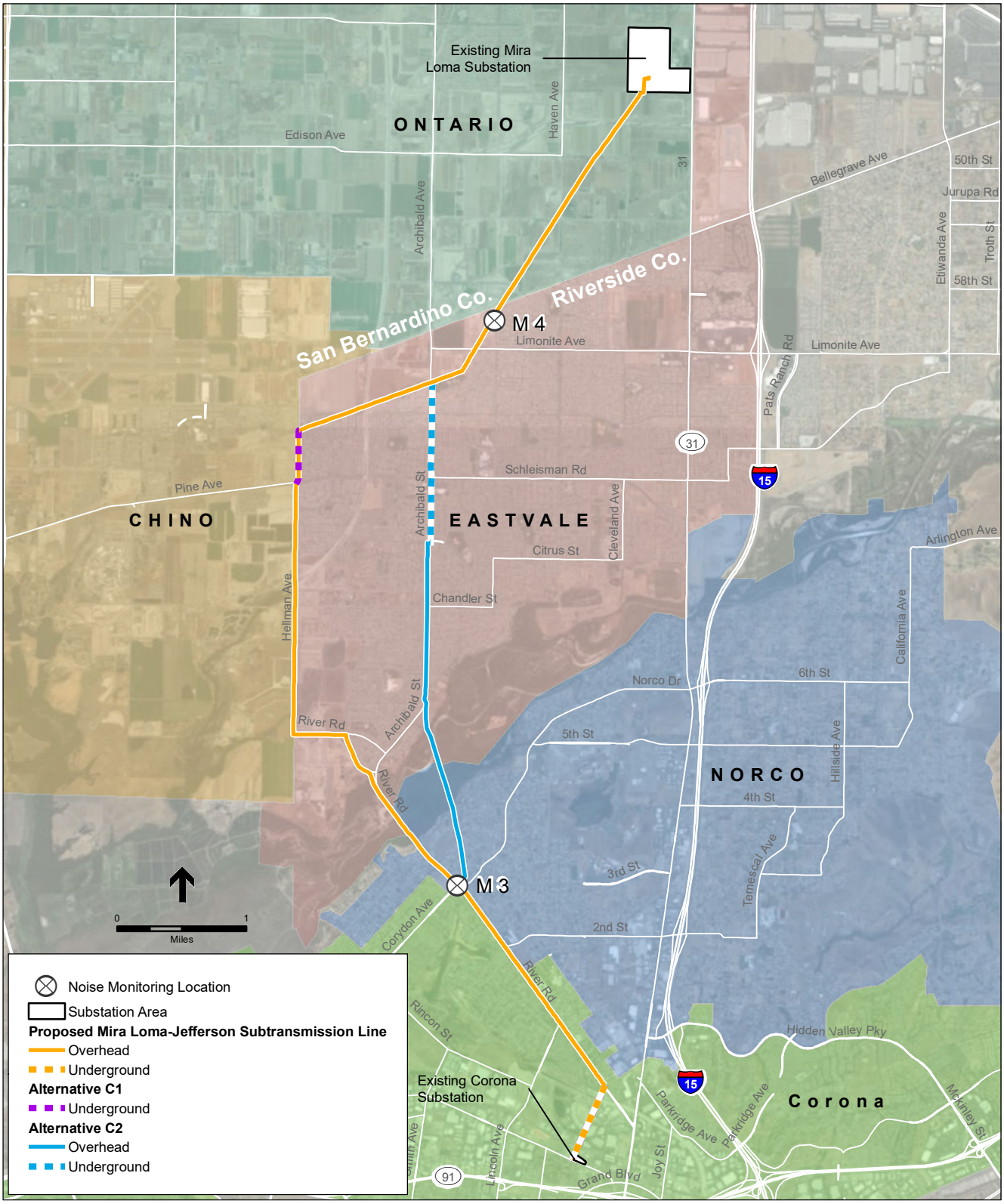


SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.13-1

Noise Monitoring Location (Source line Alignments)



SOURCE: SCE, 2015

Circle City Substation and Mira Loma-Jefferson 66 kV Line Project . 207584.14

Figure 4.13-2

Noise Monitoring Location (Subtransmission Line)

The summaries of sensitive receptors provided below are not intended to list every specific individual sensitive receptor, but are intended to provide an overview of the types of uses in the vicinity of the proposed Project and the alternatives. As noted above, the noise measurement locations are considered representative of other sensitive receptors located throughout the vicinity of the Project sites.

Summary of Sensitive Receptors - Proposed Project

Sensitive receptors near the Project sites and routes include residences immediately adjacent to the source line alignments and Mira Loma-Jefferson 66 kV Subtransmission Line alignment, and residences at Corona La Linda Mobile Home Park, east of South Temescal Street, approximately 720 feet from the proposed Circle City Substation site. There are also three schools in the vicinity of the Mira Loma-Jefferson subtransmission line alignment, including: Auburndale Intermediate School, located adjacent to the Mira Loma-Jefferson subtransmission line route along River Road; and Victress Bower Elementary and George Washington Elementary, both located approximately 500 feet from the Mira Loma-Jefferson subtransmission line alignment. In addition, a day care center is located approximately 800 feet southwest of the proposed Databank Source Lines alignment.

Summary of Sensitive Receptors - Subtransmission Line Alignment Alternatives

Alternative C1 (Underground Hellman Avenue) would expose the same sensitive receptors as the Project along the proposed Mira-_Loma-_Jefferson subtransmission line alignment. Alternative C2 (Archibald Avenue) would occur adjacent to residential receptors along Archibald Avenue between Belgrave Avenue and the Santa Ana River. The route would occur in a southeasterly direction along the Mir Loma-Jefferson subtransmission line alignment exposing the same receptors as described for the Project. With regard to Alternative ~~3C~~ C3 (Subtransmission-Level Battery Storage), the 50 MW subtransmission-level battery storage facility would be located approximately 270 feet east-northeast of the Christian Heritage School and approximately 50 feet south of residences along Pleasant View Avenue; the 42 MW subtransmission-level battery storage facility would be located approximately 500 southwest of the closest building associated with Corona High School and approximately 50 feet north, east, and west of residence along Fairmont Drive, Border Avenue, and Zircon Street, respectively; and the 40 MW subtransmission-level battery storage facility would be located approximately 800 feet west of Corona La Linda Mobile Home Park. The subtransmission line alignment under Alternative C3 to connect the 42 MW facility to Jefferson Substation is within 50 feet of residences and adjacent to Church of Jesus Christ of Latter-day Saints and the West Community Friends Church. The subtransmission line alignment to connect the 50 MW facility to Corona Substation is within 50 feet of apartments, a trailer park, and an inn. The work at Jefferson Substation to accommodate the new 66 kV subtransmission line under Alternative C3 would occur within 50 feet of residences on Tabitha Way and Living Truth Christian Fellowship.

Summary of Sensitive Receptors - Substation Alternative Sites

Residences at Corona La Linda Mobile Home Park would be approximately 800 feet from the Distribution-Level Battery Storage Alternative (Alternative D1) site fence line. The northern

boundary of the Substation Site Alternative (Alternative D2) would be approximately 100 feet to the closest residences at Corona La Linda Mobile Home Park in the City of Corona.

Summary of Sensitive Receptors - Alternative Source Lines

Alternative E1 (Quarry Street Segment) would be adjacent to residences along East Grand Boulevard and Quarry Street, and would pass adjacent to the north side of City Park. Alternative E2 (Underground Pedley Lines from Interstate 15 to Circle City Substation) would be adjacent to the same sensitive receptors as the Project just west of the Interstate 15 to the proposed substation site. Alternative E3 (Southern Route) would continue at the intersection of Cota Street and West Harrison Street approximately 640 feet away from the residences along Railroad Street. This route would then expose receptors such as workers in commercial and industrial uses along West Blaine Street, Joy Street, and East Grand Boulevard.

4.13.1.4 Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities.

California Public Utilities Commission (CPUC) General Order No. 131-D explains that local land use regulations would not apply to the Project or alternatives. As such, the following local policies and ordinances pertaining to noise that would otherwise be relevant to the Project and alternatives are described below for informational purposes only.

Riverside County General Plan

Riverside County General Plan includes multiple policies related to noise and vibration (Riverside County, 2015). These include:

> *Policy N1.5*: Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
>
> *Policy N 4.1*: Prohibit facility-related noise, received by any sensitive use, from exceeding the following worst-case noise levels:
>
> - 45 dBA-10-minute L_{eq} between 10:00 p.m. and 7:00 a.m.
> - 65 dBA-10-minute L_{eq} between 7:00 a.m. and 10:00 p.m.
>
> *Policy N 4.3*: Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed, and ensure that the recommended mitigation measures are implemented.
>
> *Policy N 4.4*: Require that detailed and independent acoustical studies be conducted for any new or renovated land uses or structures determined to be potential major stationary noise sources.

Policy N 13.1: Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N 13.2: Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N 13.4: Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Policy N 16.2: Consider the following land uses sensitive to vibration: hospitals, residential areas, concert halls, libraries, sensitive research operations, schools, and offices.

Riverside County Code

Riverside County regulates noise in the County Code Chapter 9.52, *Noise Regulations*. The County Code is designed to implement the General Plan noise policies. The Riverside County Code defines a sensitive receptor as a land use that is sensitive to noise, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries, or public libraries (§9.52.030). Maximum noise levels on any property shall not cause exterior noise levels on any adjacent residential property to exceed 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.) or 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.). These criteria are consistent with the standards presented in the County's General Plan. Construction activities are exempt from the provisions of County Code Chapter 9.52 as long as construction does not occur within 0.25 mile of an inhabited dwelling. Construction activities that occur within 0.25 mile of an inhabited dwelling are also exempt as long as construction activities do not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September, or between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May (Riverside County, 2006).

The Riverside County Code Noise regulations are not applicable to (1) "Facilities owned or operated by or for a governmental agency," (2) "maintenance or repair of public properties," (3) Public safety personnel in the course of executing their official duties, including but not limited to,…public utility personnel," (4) "motor vehicles, other than off-highway vehicles." (Riverside County Municipal Code Section 9.52.020.)

City of Chino General Plan

The Envision Chino General Plan 2025 Noise Element includes the following policies related to construction noise (City of Chino, 2010):

Policy P1: The City shall require a noise monitoring plan to be prepared and submitted prior to starting all construction projects. The noise monitoring plan shall identify monitoring locations and frequency, instrumentation to be used, and appropriate noise control measures that will be incorporated.

Policy P2: The City shall limit all construction in the vicinity of noise-sensitive land uses, such as residences, hospitals, or senior centers, to daylight hours or 7:00 a.m. to 7:00 p.m. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Ensure that during construction, trucks and equipment are running only when necessary.
- Shield all construction equipment with temporary noise barriers to reduce construction-related noise impacts.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and similar equipment, where available (City of Chino, 2010).

City of Chino Municipal Code

Section 15.44.030 of the City of Chino Municipal Code limits construction activities to between 7:00 a.m. and 8:00 p.m. Monday through Saturday and does not allow construction on Sundays or federal holidays. There are no specific noise level criteria for construction activities; however, exterior operational noise levels, as measured at any residential property boundary, are limited to the levels provided in Section 9.40.040 and are listed below in Table 4.13-2.

TABLE 4.13-2
CITY OF CHINO EXTERIOR NOISE LIMITS

Maximum Time of Exposure	Level Not to Exceed, 7:00 a.m. to 10:00 p.m. (dBA)	Level Not to Exceed, 10:00 p.m. to 7:00 a.m. (dBA)
30 minutes per hour (L_{50})	55	50
15 minutes per hour (L_{25})	60	55
5 minutes per hour ($L_{8.3}$)	65	60
1 minute per hour ($L_{1.7}$)	70	65
Any period of time (L_{max})	75	70

NOTE: L_{50}, L_{25}, $L_{8.3}$, and $L_{1.7}$ are A-weighted noise levels that are exceeded 1.7, 8.3, 25, and 50 percent, respectively, of the time during the measurement period.

SOURCE: City of Chino, 2016.

The operational noise levels contained in Table 4.13-2 are not applicable to any mechanical device, apparatus or equipment used, related to or connected with emergency machinery (with emergency machinery including work by private or public utilities when restoring utility service), vehicle, and any activity that is preempted by state or federal law. (City of Chino Municipal Code Section 9.40.060(C) and (E)(5).)

City of Corona General Plan

The Noise Element of the City of Corona General Plan adopts the compatibility guidelines documented by the State Department of Health Services, which specify average noise limits for long-term, stationary noise sources, but does not document specific thresholds for temporary activities, such as construction noise. The following policies from the City of Corona General Plan pertain to limits on noise (City of Corona, 2004):

Policy 11.5.2: Require new industrial and new commercial land uses or the major expansion of such uses to demonstrate that ambient noise levels will not exceed an exterior noise level of 65 dBA L_{dn} on areas containing "noise sensitive" land uses.

Policy 11.5.6: Require construction activities that occur in close proximity to existing "noise sensitive" uses, including schools, libraries, health care facilities, and residential uses to limit the hours and days of operation in accordance with City of Corona Noise Ordinance.

City of Corona Municipal Code

Section 17.84.040 (D) (2) of the City of Corona Municipal Code limits construction activities to between 7:00 a.m. and 8:00 p.m. from Monday through Saturday and between 10:00 a.m. and 6:00 p.m. on Sundays and federal holidays. Section 17.84.040 (C) (1) of the City of Corona Municipal Code specifies standards for stationary noise sources that may be intrusive to a neighboring private property. The noise standards shown in Table **4.13-3** are for regulating the impact of stationary noise sources to a neighboring land use.

TABLE 4.13-3
CITY OF CORONA MAXIMUM ALLOWABLE STATIONARY SOURCE NOISE STANDARDS*

Type of Land Use	Exterior Noise Level (dBA)		Interior Noise Level (dBA)	
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Single-, Double- and Multi-Family Residential	55	50	45	35
Other Sensitive Land Uses	55	50	45	35
Commercial Uses	65	60	Not applicable	Not applicable
Industrial, Manufacturing or Agricultural	75	70	Not applicable	Not applicable

* The City of Corona does not apply the Stationary Source Noise Standards to construction activities (City of Corona, 2015).

SOURCE: City of Corona, 2016

The City of Corona prohibits stationary noise sources from exceeding:

- the noise standard for a cumulative period of more than 30 minutes in any hour;
- the noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour;
- the noise standard plus 10 dB for a cumulative period of more than 5 minutes in any hour;
- the noise standard plus 15 dB for a cumulative period of more than 1 minute in any hour; or
- the noise standard plus 20 dB for any period of time (City of Corona, 2016).

The operational noise levels contained in Table 4.13-3 are not applicable to (1) Noise sources associated with the maintenance of real property, provided the activities take place between the hours of 7:00 a.m. to 8:00 p.m. on any day except Sunday or between the hours of 9:00 a.m. to 8:00 p.m. on Sunday, (2) Any activity to the extent regulation thereof has been preempted by state or federal law, (3) Short-term, non-continuous operations associated with government and public utility facilities that are necessary to maintain the delivery of services for the benefit of public health and safety. (City of Corona Municipal Code Section 18.84.040(E).)

City of Eastvale General Plan

The City of Eastvale General Plan provides noise guidelines and thresholds for stationary noise sources based on the State Department of Health Services' compatibility guidelines, which specify average noise limits for long-term, stationary noise sources. Though general policies restrict construction to daytime hours and require some general noise mitigation (e.g., mufflers), there are no descriptive thresholds for construction noise. The following policies are related to noise:

Policy N-7: The City's standards for maximum exterior non-transportation noise levels to which land designated for residential land uses may be exposed for any 30-minute period on any day are presented in **Table 4.13-4**. Where existing ambient noise levels exceed these standards, the ambient noise level shall be highest allowable noise level as measured in dBA L_{eq} (30 minutes).

TABLE 4.13-4
CITY OF EASTVALE EXTERIOR NOISE LEVEL STANDARDS

Land Use Type	Time Period	Maximum Noise Level (dBA)
Single-Family Homes and Duplexes	10 p.m. to 7 a.m.	50
	7 a.m. to 10 p.m.	60
Multiple Residential 3 or More Units Per Building (Triplex +)	10 p.m. to 7 a.m.	55
	7 a.m. to 10 p.m.	60

SOURCE: City of Eastvale, 2012.

Policy N-22: Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N-24: Require that all construction equipment be kept properly tuned and use noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer (City of Eastvale, 2012).

City of Eastvale Municipal Code

Section 110.01.020 of the City of Eastvale Municipal Code limits construction equipment use to between 7:00 a.m. and 7:00 p.m., Monday through Saturday, except on national holidays if the construction work is located within one-fourth of a mile from an occupied residence. No construction is permitted on Sundays or on nationally recognized holidays unless approval is obtained from a city building official or city engineer (City of Eastvale, 2016).

Section 8.52.040 contains general sound level standards. However these standards are not applicable to (1) Facilities owned or operated by or for a governmental agency, (2) Public safety personnel in the course of executing their official duties, including, but not limited to… public utility personnel, and includes without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile, (3) Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September,

(4) Property Maintenance, provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m., or (5) Motor vehicles, other than off-highway vehicles. (City of Eastvale Municipal Code Section 8.52.020.)

City of Norco General Plan

As with the City of Corona, the City of Norco adopts the compatibility guidelines documented by the State Department of Health Services, which specify average noise limits for long-term, stationary noise sources, but does not document specific thresholds for temporary activities, such as construction noise. The following City of Norco General Plan Noise Element policies pertain to construction noise:

> *Policy 2.2.2b*: All construction equipment should be equipped with noise attenuation features including mufflers and engine shrouds that are at least as effective as original manufacturer equipment.
>
> *Policy 2.2.2c*: The City should regulate wherever feasible the hours of operation for construction areas including haul routes that may include residential streets and/or sensitive land uses (City of Norco, 2015).

City of Norco Municipal Code

Pursuant to Municipal Code Section 9.07.040, general sound level standards, no person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied residential property to exceed a maximum noise level of 55 dBA between 7:00 a.m. and 10:00 p.m., and 45 dBA between 10:00 p.m. and 7:00 a.m. However, construction-related events subject to a permit issued by the City of Norco are exempt from the general sound level (City of Norco, 2016).

In addition, Sections 15.01.110 and 15.30.020 of the City of Norco Municipal Code limit construction activity to between 6:30 a.m. and 7:00 p.m. from Monday through Friday (City of Norco, 2016).

The operational noise levels contained in Municipal Code Section 9.07.040 are not applicable to (1) Facilities owned or operated by or for a governmental agency, (2) The maintenance or repair of public properties, (3) Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile, (4) Private construction projects involving no more than one unit located within one-quarter of a mile from an inhabited dwelling; provided, that: Construction does not occur between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday and 7:00 p.m. and 8:00 a.m., on Saturday and Sunday, unless specified by permit, (5) Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 8:00 a.m. and 7:00 p.m., (6) Motor vehicles, other than off-highway vehicles, or (7) Construction-related single events or continuous events subject to a permit issued by the City of Norco. (Municipal Code Section 9.07.020.)

City of Ontario General Plan

The Noise Hazards Element for the City of Ontario General Plan contains the goal of providing "An environment where noise does not adversely affect the public's health, safety, and welfare."(City of Ontario, 2009).

City of Ontario Municipal Code

The City of Ontario Municipal Code Section 5-29-04 specifies exterior operational noise standards listed in **Table 4.13-5**, *City of Ontario Exterior Noise Standards*; however, construction activities are exempt from these noise standards provided that they occur between 7:00 a.m. and 6:00 p.m. on weekdays, and between 9:00 a.m. and 6:00 p.m. on weekends (City of Ontario, 2015).

TABLE 4.13-5
CITY OF ONTARIO STATIONARY SOURCE NOISE STANDARDS

TYPE OF LAND USE	ALLOWED EQUIVALENT NOISE LEVEL (dBA)	
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
Single-, Double- and Multi- Family Residential	65	45
Multi- Family Residential, Mobile Home Parks	65	50
Commercial Property	65	60
Residential Portion of Mixed Use	70	70
Manufacturing and Industrial, Other Uses	70	70

SOURCE: City of Ontario, 2015

The operational noise levels contained in Municipal Code Section 5-29-04 are not applicable to (1) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, (2) Noise sources associated with construction, repair, remodeling, demolition or grading of any real property, (3) Noise sources associated with construction, repair, remodeling, demolition or grading of public rights-of-way or during authorized seismic surveys, (4) Noise sources associated with the maintenance of real property, or (5) Any activity to the extent regulation thereof has been preempted by state or federal law. (Municipal Code Section 5-29.06.)

Construction activities are limited to the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday, and 9:00 a.m. to 6:00 p.m. Saturday and Sunday. (Municipal Code Section 5-29-09.) However, these limits are not applicable to the maintenance, repair, or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency.

4.13.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant noise effects on the environment if it would:

a) Expose people to or generate noise levels in excess of applicable standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;

b) Expose people to or generate excessive groundborne vibration or groundborne noise levels;

c) Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

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

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

4.13.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts associated with noise or vibration.

4.13.4 Impacts and Mitigation Measures

4.13.4.1 Approach to Analysis

Equipment noise during construction of the Project is the primary concern in evaluating short-term noise impacts. During operation, noise from corona discharge along the subtransmission lines, substation noise, and general operation and maintenance activities would be the primary concerns associated with long-term operational noise.

As part of the CPUC's Permit to Construct application process, SCE evaluated the potential noise impacts from construction, operation, and maintenance of the Project, which included a review of Riverside County, City of Chino, City of Corona, City of Eastvale, City of Norco, City of Ontario noise standards and policies, as well as a comparison of the existing noise environment with estimated construction, operation, and maintenance noise levels associated with the Project. Short-term construction noise impacts relative to ambient noise levels (Impact 4.13-2) were assessed using recommendations of the Federal Transit Administration (FTA, 2006). The potential for long-term operational noise to substantially increase ambient noise levels is evaluated using noise level thresholds established by the local jurisdictions as well as by comparison to ambient noise levels. Additional details regarding methodology are included in the individual impact analyses below.

a) Exposure of persons to or generation of noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (No Impact)

No local land use plans, policies, or regulations requiring discretionary approval would apply to the proposed Project because, pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. Additionally, the regulatory standards

described above have exemptions for the type of work proposed for the Project. Consequently, the Project would not conflict with any applicable standards established in the local general plans and noise ordinances. There would be no impact; however, for informational purposes, the following noise policy and ordinance consistency analysis is provided for informational purposes only.

As described in Section 4.13.1 *Setting*, the local agencies in the Project area have not established noise level standards applicable to short-term construction activities. However, Riverside County, and the cities of Chino, Corona, Eastvale, Norco, and Ontario provide exemptions for noise related to construction activities based on the time of day the noise is generated. These time periods are summarized in **Table 4.13-6**, *Construction Noise Time-of-Day Exemptions*. Construction would be limited to the allowable times within these jurisdictions.

TABLE 4.13-6
CONSTRUCTION NOISE TIME-OF-DAY EXEMPTIONS

Jurisdiction	Weekdays	Saturdays	Sundays	Federal Holidays
Riverside County	6:00 a.m. to 6:00 p.m. (June through September) 7:00 a.m. to 6:00 p.m. (October through May)			
City of Chino	7:00 a.m. to 8:00 p.m.	7:00 a.m. to 8:00 p.m.	Construction not allowed	Construction not allowed
City of Corona	7:00 a.m. to 8:00 p.m.	7:00 a.m. to 8:00 p.m.	10:00 a.m. to 6:00 p.m.	10:00 a.m. to 6:00 p.m.
City of Eastvale	7:00 a.m. to 7:00 p.m.	7:00 a.m. to 7:00 p.m.	Construction not allowed	Construction not allowed
City or Norco	6:30 a.m. to 7:00 p.m.	Not specified	Not specified	Not specified
City of Ontario	7:00 a.m. to 6:00 p.m.	9:00 a.m. to 6:00 p.m.	9:00 a.m. to 6:00 p.m.	Not specified

NOTE: The listed time limits for the County of Riverside do not apply if construction activities are being conducted more than 0.25 mile from a dwelling.

SOURCES: Riverside County, 2006; City of Chino, 2016; City of Corona, 2016; City of Eastvale, 2016; City of Norco, 2016; City of Ontario, 2015.

As discussed in Section 2.6.15, *Construction Schedule*, construction activities would adhere to the allowable construction work hours specified in Table 4.13-6, or as allowed by following the recommended provisions of a variance if necessary, if SCE determines that work would be necessary outside the allowed periods (e.g., to deliver an oversized load or to cause or respond to outages [planned or unplanned] during nighttime hours). Therefore, no conflicts would occur related to applicable local noise ordinances. For discussion of noise impacts that would be associated with nighttime construction, if required, refer to Impact 4.13-2.

However, several of the local jurisdictions in the Project area, including Riverside County, City of Chino, City of Eastvale, and City of Norco, have specific policies designed to reduce the effects of construction-related noise. To help reduce the construction-related impact relative to temporarily increasing ambient noise levels (see Impact 4.13-2), Mitigation Measure 4.13-2a includes noise control features identified in the local policies. There would be no conflicts with local general plan policies that pertain to construction activity noise.

Operation

No local land use plans, policies, or regulations requiring discretionary approval would apply to the proposed Project because, pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. Consequently, operation of the Project would not conflict with any applicable standards established in the local general plans and noise ordinances. There would be no impact; however, for informational purposes, Project operational noise levels are compared to policies and ordinances under the Impact 4.13-1 discussion relative to the potential for the Project to cause a substantial permanent increase in ambient noise levels.

---

b) Expose people to or generate excessive groundborne vibration or groundborne noise levels. (No Impact)

Construction

Temporary sources of groundborne vibration and noise during construction would result from operation of conventional heavy construction equipment such as drill rigs, bulldozers, and loaded haul trucks. These pieces of equipment can generate vibration levels of up to 0.09 inches per second (in/sec) at a distance of 25 feet, which is approximately the closest distance that some construction activities would occur relative to the closest residences. Vibration levels attenuate rapidly from the source. At a distance of 50 feet, the vibration level would be up to 0.03 in/sec.

The PPV threshold of 0.20 in/sec identified by Caltrans (2004) is used in this analysis to determine the significance of vibration impacts related to adverse human reaction, and the FTA PPV threshold of 0.12 in/sec for buildings extremely susceptible to vibration damage is used to determine the significance of vibration impacts related to risk of architectural damage to buildings (FTA, 2006). Vibration levels at the closest residence locations would be well below these PPV thresholds. These groundborne vibration levels would not have the potential to cause structural damage to nearby buildings and would not be perceptible at residences or other sensitive uses in the immediate vicinity of construction activities.

Groundborne noise is the rumbling sound of structure surfaces caused by high vibration levels. Because construction of the Project would not result in exposure of persons to or generation of excessive groundborne vibration, it also would not expose them to or generate excessive groundborne noise levels. Consequently, there would be no groundborne noise-related impact associated with construction of the Project (No Impact).

Operation and Maintenance

Operation and maintenance of the Proposed Project would not introduce any new sources of perceivable groundborne vibration to the Proposed Project area. Therefore, there would be no operation-related vibration impacts. Because implementation of the Proposed Project would not result in exposure of persons to or generation of excessive groundborne vibration, it also would not expose them to or generate excessive groundborne noise levels. Consequently, there would be

no groundborne noise-related impact associated with operation and maintenance of the Proposed Project (No Impact).

---

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

Impact 4.13-1: Operation and maintenance-related noise levels would contribute to ambient noise levels. *Less than significant* (Class III)

The primary noise sources from operation of the Project would be associated with substation transformers and air conditioners, corona discharge along the source line and subtransmission line alignments, and general maintenance-related activities. Since the local jurisdictions in the Project area have adopted noise level standards designed to protect the public from adverse operational noise (see *Regulatory Setting* discussion in Section 4.13.1), those noise standards are used here to evaluate whether the Project would result in a substantial permanent increase in ambient noise levels in conjunction with a comparison of estimated Project noise to actual ambient noise levels, where available.

Circle City Substation

Transformer banks account for the majority of noise generated by substation infrastructure operations. Transformer noise is caused, in part, by a phenomenon call magnetostriction, which causes the transformer to be magnetically excited and vibrate, producing a "humming" type sound. The proposed Circle City Substation site is located in the City of Corona and would include two 66/12 kV transformer banks, each with a capacity of 28 megavolt-amperes. The transformer banks would conform to SCE Specification A1-2009, which would require the transformer banks' sound pressure level to be no higher than 68 dBA (SCE, 2015). As a result, the highest average sound pressure level for each transformer bank would not be expected to exceed 68 dBA at a distance of 2 meters (approximately 7 feet). The substation property line and the nearest residences would be located approximately 250 feet and 850 feet, respectively, from the proposed transformer banks. The calculated combined noise level of the two transformer banks at the substation property line and the nearest residence would be approximately 40 dBA and 29 dBA L_{eq}, respectively.

In addition, the substation would include a mechanic and electric equipment room (MEER) that would be equipped with two heating, ventilation, and air conditioning (HVAC) units. Each of these units would generate a sound pressure level of up to 50 dBA at 50 feet (SCE, 2016). The substation property line and the nearest residences would be located approximately 200 feet and 800 feet, respectively, from the proposed MEER. The calculated combined noise level of the two HVAC units at the substation property line and the nearest residence would be approximately 41 dBA and 32 dBA L_{eq}, respectively.

The calculated combined noise level of the two transformer banks and two HVAC units at the substation property line and the nearest residence would be approximately 44 dBA and 32 dBA L_{eq}, respectively, and 50 dBA and 39 dBA L_{dn}, respectively. These noise levels would be below the City of Corona nighttime exterior noise level standard (i.e., 50 dBA L_{eq}) as well as the City of

Corona's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}). It should be noted that these values do not account for the additional noise attenuation (between 5 dBA and 10 dBA) that would be achieved due to the 8-foot high block wall that would be installed along the perimeter of the substation site and other existing buildings east of the site that would block the line of sight between the proposed substation and the nearest residences. Accounting for this attenuation, noise levels would be up to 39 dBA L_{eq} and 45 dBA L_{dn}. Assuming that the ambient noise levels at the nearest residences are similar to those of the residential neighborhood at noise monitoring location No. 4 (i.e., nighttime 1-hour L_{eq} of 43 dBA and CNEL of 58 dBA; see Table 4.13-1*, Summary of Measured Ambient Noise Levels in the Project Area*), operational substation noise levels would not be audible at the nearest sensitive receptor locations. Therefore, operational substation noise levels would result in a less-than-significant impact.

Subtransmission Line Corona Noise

The term corona is used to describe the breakdown of air into charged particles caused by the electrical field at the surface of a conductor. Audible noise levels generated by corona discharge vary depending on weather conditions as well as on the voltage of the line. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost, or condensation on the conductor surface, which causes surface irregularities that promote corona discharge.

According to the Electric Power Research Institute (EPRI), noise levels 25 feet directly below 138 kV transmission lines under wet conditions tend to be approximately 37 dBA (EPRI, 1978). Noise levels under the Project conductors would be expected to be lower as the voltage would be 66 kV rather than 138 kV and the proposed conductors would likely sag to a minimum height that would be higher than 25 feet; nevertheless, for the purpose of this analysis the noise level of 37 dBA is used to represent worst case corona noise levels that would occur directly below the subtransmission line conductors during wet weather conditions. At the closest residences that would be approximately 25 feet from the proposed Mira Loma-Jefferson subtransmission line and the source line alignments, the maximum noise level would be approximately 36 dBA L_{eq}, which over a period of 24 hours equals an L_{dn} of approximately 42 dBA. This noise level would be below the most stringent nighttime exterior noise level standards identified by the local jurisdictions in the Project area (i.e., 45 dBA L_{eq}) as well as the City of Corona's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}).

Maintenance Activity Noise

Maintenance activities would include annual visual inspections of the subtransmission line constructed as part of the proposed Project as well as the access/spur roads that provide access to the TSPs and LWS pole sites. These activities would require use of a light duty truck and/or a helicopter, which would temporarily increase noise levels in the immediate vicinity of the Proposed Project area. These activities occur infrequently and are already occurring in the Proposed Project area related to inspections of the existing transmission and subtransmission lines. Furthermore, such maintenance activities are anticipated to decrease in certain portions of the alignment due the to lower maintenance requirements of the tubular steel poles and lightweight steel poles that would replace existing wood distribution poles along the proposed source line routes and Mira Loma-Jefferson subtransmission line. There would be no substantial long-term maintenance-related noise level increases (No Impact).

Mitigation: None required.

---

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

Impact 4.13-2: Construction of the Project would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations. *Significant and unavoidable* (Class I)

Construction of the Project would result in temporary increases in ambient noise levels. Construction activities would require a variety of heavy equipment, such as backhoes, dozers, flatbed boom trucks, air compressors and generators, mobile cranes, and concrete trucks that would generate varying noise levels depending on the particular type of construction equipment. Onsite construction activities (i.e., construction activities within he proposed alignments, staging areas, and substation sites) would create both intermittent and continuous noises. Offsite construction noise sources would consist of passing trucks and other construction-related vehicles. Examples of intermittent construction noise sources would be from passing off-road equipment, loading operations, and from grading and drilling activities. Continuous noise sources would include sustained idling of equipment and/or the operation of pumps and generators at constant rates.

Although there are no applicable local noise level standards available to judge the significance of short-term construction noise levels, the FTA has identified daytime and nighttime 8-hour L_{eq} levels of 80 dBA and 70 dBA, respectively, as noise levels where adverse community reaction could occur at residential land uses (FTA, 2006). These noise levels are used here to assess whether daytime and nighttime construction-related noise levels would cause a substantial temporary or periodic increase in ambient noise levels at sensitive receptor locations. Typical noise levels from equipment types that would be used to construct the Project are listed in **Table 4.13-7**, *Construction Equipment Noise Levels*. These values were used to determine the distance at which construction noise levels would reach the 8-hour L_{eq} 80 dBA noise limit for residential land uses.

TABLE 4.13-7
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Noise Level Range at Approximately 50 Feet (dBA)
Front loader	79 – 80
Backhoe	78 – 80
Tractor, dozer	82 – 85
Scraper, grader	84 – 85
Paver	77 – 85
Truck	74 – 84
Concrete mixer truck	79 – 85
Concrete pump	81 – 82
Crane (movable)	81– 85
Pump	77 – 81
Generator	70 – 82
Compressor	78 – 80

SOURCE: FHWA, 2006.

The distances from the construction activity sites to where the 8-hour 80 dBA L_{eq} construction noise levels would occur were calculated by SCE's consultant, Acentech Incorporated, using values and methods identified in the Roadway Construction Noise Model (RCNM) published by the Federal Highway Administration (FHWA) (Acentech, 2017; see PEA). To supplement SCE's analysis, the CPUC's consultant, Environmental Science Associates (ESA), used SCE's identified distances of exposure to calculate the associated L_{eq} noise levels at the nearest residences (ESA, 2018; see Appendix G). Offsite construction noise sources associated with a passing truck or other construction-related vehicles would result in L_{max} noise levels of up to 84 dBA at 50 feet. This would equate to an 8-hour L_{eq} noise level less than 80 dBA.

Upon review of SCE's construction noise analysis in SCE's Proponent's Environmental Assessment (PEA), it became apparent that the distances identified for construction of the Circle City Substation are relative to exposures of 85 dBA L_{eq}, not 80 dBA L_{eq}. Therefore, ESA recalculated the distances from the construction activities to be relative to the 80 dBA L_{eq} noise exposure level, and also calculated the L_{eq} noise levels that would occur at the nearest residence locations east of S. Temescal Street (ESA, 2018; see Appendix G). Those distances and noise levels are provided in **Table 4.13-8**, *Circle City Substation Construction Noise Estimates*. As indicated in the table, construction of the Circle City Substation would result in an 80 dBA 8-hour L_{eq} exposure distance of up to 125 feet from construction activities. Construction noise levels at the nearest residences would be up to 65 dBA L_{eq}. Although this noise level may be audible at the nearest residences, it would not exceed the 80 dBA L_{eq} or 70 dBA L_{eq} thresholds, and therefore would not result in a significant impact. The temporary increase in ambient noise levels would cause a less-than-significant impact.

TABLE 4.13-8
CIRCLE CITY SUBSTATION CONSTRUCTION NOISE ESTIMATES

Construction Activity	Distance of 80 dBA 8-hr L_{eq} Exposure (ft)	Distance to Receptor (ft)	8-hr L_{eq} at Nearest Sensitive Receptor
Grading	85	720	62 dBA
Civil Work	125	720	65 dBA
Asphalting	69	720	60 dBA

SOURCE: Acentech, 2017; ESA, 2018; See Appendix G.

The distances to the estimated 80 dBA L_{eq} exposures and sensitive receptor locations that would be associated with construction of the proposed source lines, as well as the noise levels at the nearest sensitive receptor locations to the proposed alignments are provided in **Table 4.13-9,** *Source Lines Construction Noise Estimates*. As shown in the table, construction of the proposed Pedley Source Lines would result in an 80 dBA L_{eq} exposure distance of up to 91 feet from construction activities associated with road work; however, the nearest receptors to the road work would be at a distance of 100 feet, where the projected noise level would be 79 dBA L_{eq}. The other Pedley Source Line construction activities would not generate as loud of noise as that associated with road work, but most of them would be conducted at locations much closer to existing residences. For example, lightweight steel (LWS) pole assembly, installation of conductor, vault installation, and installation of duct bank along E. Blaine Street, Third Street,

and/or Quarry Street would occur between 30 and 50 feet from the nearest residences, where the associated noise levels would range between 81 dBA and 87 dBA L_{eq}. These noise levels would exceed the 80 dBA 8-hour L_{eq} threshold, and therefore would cause a significant impact relative to a substantial temporary increase in ambient noise levels.

TABLE 4.13-9
SOURCE LINES CONSTRUCTION NOISE ESTIMATES

Construction Activity	Distance of 80 dBA L_{eq} Exposure (ft)	Distance to Receptor (ft)	L_{eq} at Nearest Sensitive Receptor
Pedley Source Lines			
Marshaling Yard Use	64	200	70 dBA
Road Work	91	100	79 dBA
Install TSP Foundation	54	75	77 dBA
TSP Assembly	47	75	76 dBA
TSP Erection	47	75	76 dBA
LWS Pole Assembly	47	30	84 dBA
Install Conductor	67	30	87 dBA
Vault Installation	75	70	81 dBA
Duct Bank Installation	84	70	82 dBA
Underground Cable Installation	57	70	78 dBA
Databank Source Lines			
TSP Assembly	75	80	76 dBA
TSP Erection	75	82	76 dBA
Vault Installation	75	75	80 dBA
Duct Bank Installation	84	75	81 dBA
Underground Cable Installation	57	75	78 dBA

SOURCE: Acentech, 2017; ESA, 2018; see Appendix G.

The distances to the estimated 80 dBA L_{eq} exposures and sensitive receptor locations that would be associated with construction of the proposed Mira Loma-Jefferson subtransmission line, as well as the noise levels at the nearest sensitive receptor locations to the proposed alignment, are provided in **Table 4.13-10**, *Mira Loma-Jefferson 66 kV Line Construction Noise Estimates*. As shown in the table, construction of the proposed Mira Loma-Jefferson subtransmission line would result in 80 dBA L_{eq} exposure distances up to 91 feet from construction activities associated with road work. With the exception of the use of the marshaling yard, all of the other construction activities shown in Table 4.13-10 would result in noise levels greater than or equal to the 80 dBA 8-hour L_{eq} limit at the nearest sensitive receptor (i.e., residences) locations, and therefore would cause a significant impact relative to a substantial temporary increase in ambient noise levels. The substantial temporary noise levels would occur at residence locations: in the City of Eastvale in the vicinity of Apple Moss Court, courts off Rolling Meadow Street, courts and streets off Prairie Smoke Road; in the cities of Eastvale and Chino in the vicinity of Hellman Avenue; in the cities of Norco and/or Corona along Baron Drive and River Road, and in City of Corona along Cota Street.

TABLE 4.13-10
MIRA LOMA-JEFFERSON 66 KV LINE CONSTRUCTION NOISE ESTIMATES

Construction Activity	Distance of 80 dBA L_{eq} Exposure (ft)	Distance to Receptor (ft)	L_{eq} at Nearest Sensitive Receptor
Marshaling Yard Use	64	300	67 dBA
Road Work	91	40	87 dBA
Remove Existing Conductor and Ground Wire	47	30	84 dBA
Light-Weight Steel (LWS) Pole Removal	42	30	83 dBA
Install TSP Foundation	54	50	81 dBA
TSP Assembly	47	50	80 dBA
TSP Erection	47	50	80 dBA
Wood LWS Pole Assembly	47	30	84 dBA
Transfer and Install Conductor	67	30	87 dBA
Vault Installation	75	60	82 dBA
Duct Bank Installation	84	60	83 dBA
Underground Cable Installation	57	60	80 dBA

SOURCE: Acentech, 2017; ESA, 2018; see Appendix G.

As shown in Table 4.13-1, ambient daytime noise levels in the Project area have been measured to range from 51 dBA to 74 dBA L_{eq} and ambient nighttime noise levels in the Project area have been measured to range from 43 dBA to 71 dBA. The proposed Project construction activities described above that would increase daytime ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations would cause a significant impact. Although construction activities would adhere to the allowable construction work hours specified in the noise ordinances of local jurisdictions, work may be necessary outside generally allowed periods during nighttime hours. The proposed Project-related nighttime construction noise levels would result in a substantial increase in nighttime ambient noise levels, causing a significant impact on nearby residences, including increased potential to cause sleep disturbance. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical.

Mitigation Measure 4.13-2a: SCE and/or its contractors shall develop a Construction Noise Reduction Plan. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The Plan shall include, but not be limited to, the following measures for daytime construction activities:

- Distribute to the potentially affected residences within 100 feet of Project construction a “hotline” telephone number, which shall be attended during active construction working hours, for use by the public to register complaints. All complaints shall be logged noting date, time, complainants’ name, nature of complaint, and any corrective action taken.
- All construction equipment must be properly tuned, in good condition, and shall have noise reduction features (e.g., mufflers and engine shrouds) no less effective than those originally installed by the manufacturers thereof.

- Ensure that during construction, trucks and equipment are running only when necessary.
- Maintain maximize physical separation, as far as practicable, between noise sources (construction equipment) and sensitive noise receptors. Separation may be achieved locating stationary equipment to minimize noise impacts on the community. Utilize "quiet" air compressors and similar equipment, where available.
- Use construction noise barriers such as paneled noise shields, barriers, or enclosures adjacent to noisy stationary equipment. Noise control shields shall be made featuring a solid panel and a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.

Mitigation Measure 4.13-2b: SCE and/or its contractors shall develop a Nighttime Noise and Nuisance Reduction Strategy plan in the event that nighttime construction activity is determined to be necessary within 400 feet of sensitive receptors. The plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities. The strategy shall include a set of site-specific noise attenuation measures that apply state-of-the-art noise reduction technology to ensure that nighttime construction noise levels and associated nuisances are reduced to the extent feasible.

The attenuation measures may include, but not be limited to, the control strategies and methods for implementation that are listed below. If any of the following strategies are determined by SCE to not be feasible, an explanation as to why the specific strategy is not feasible shall be included in the plan.

- Plan construction activities to minimize the amount of nighttime construction.
- Offer temporary relocation of residents within 200 feet of nighttime construction activities.
- Temporary noise barriers, such as shields and blankets, shall be installed immediately adjacent to all nighttime stationary noise sources (e.g., auger rigs, generators, compressors, etc.).
- Install temporary noise barriers that block the line of sight between nighttime activities and the closest residences within 400 feet.
- Maintain maximize physical separation, as far as practicable, between noise sources (construction equipment) and sensitive noise receptors. Separation may be achieved locating stationary equipment to minimize noise impacts on the community.
- The notification requirements identified in Mitigation Measure 4.13-2a shall be extended to include residences within 400 feet of pending nighttime construction activities.

Significance after Mitigation: Although several components of Mitigation Measures 4.13-2a and 4.13-2b would likely reduce the annoyance that would be associated with increased ambient noise levels associated with loud construction activities, it is not possible to firmly substantiate that implementation of Mitigation Measures 4.13-2a and 4.13-2b would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime

construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. Therefore, the impact would be significant and unavoidable.

---

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels (No Impact).

The nearest public airports are the Chino Airport, located approximately 0.7 mile northwest of the proposed Mira Loma-Jefferson subtransmission line alignment, and the Corona Municipal Airport, located approximately 1.1 miles to the southwest of the alignment. Portions of the Project would be located within the boundaries of the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plans for airports. In addition, Ontario International Airport is located approximately 0.9 mile northeast of a potential staging yard located at the SCE Ontario Service Center. However, the proposed Project would not involve the development of noise-sensitive land uses that would be exposed to excessive aircraft noise. Workers that would construct the proposed Project would be exposed to periodic short-term aircraft overflight noise associated with these airports; however, the average construction activity noise levels that the workers would be exposed to would be far greater than the average overflight noise levels that they would be exposed to. Therefore, there would be no impact.

---

f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels (No Impact).

The Project would not be located in the vicinity of a private airstrip; therefore, no impact would occur.

4.13.5 Alternatives

4.13.5.1 No Project Alternative

Under the No Project Alternative, the proposed Project would not be implemented and all infrastructure previous installed for the project would remain in place; therefore, no noise or vibration impacts would occur (No Impact).

4.13.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be constructed and the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed. As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative B would adhere to the allowable construction work hours specified in Table 4.13-6, or as allowed by variance if SCE determines that work would be necessary outside the allowed periods. Therefore, no impact would occur related to an applicable noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with the proposed Mira Loma-Jefferson subtransmission line would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations, which would cause a significant impact on nearby residences and sensitive receptors. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. it is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. Compared to the proposed Project, this impact would be reduced because the significant impacts associated with the proposed source lines would not occur. Nonetheless, the impact would remain significant and unavoidable (Impact 4.13-2; Class I).

With regards to operational noise, the closest residences to the Mira Loma-Jefferson subtransmission line would be exposed to a maximum corona discharge noise level of approximately 36 dBA L_{eq}, which over a period of 24 hours equals an L_{dn} of approximately 42 dBA. This noise level would be below the most stringent nighttime exterior noise level standards identified by the local jurisdictions along the alignment (i.e., 45 dBA L_{eq}) as well as the City of Corona's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}). The lowest ambient hourly L_{eq} and CNEL noise levels measured along the Mira Loma-Jefferson subtransmission line alignment were approximately 43 dBA and 58 dBA, respectively (see Table 4.13-1); therefore, corona noise under Alternative B would not be expected to increase ambient noise levels at sensitive receptor locations. This impact would be reduced compared to the proposed Project because the operational noise impacts associated with the proposed Circle City Substation and source lines would not occur. The impact under Alternative B would be less than significant (Impact 4.13-1; Class III).

There would be no impact associated with Alternative B relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would include a half-mile-long underground conduit installation within Hellman Avenue. Alternative C1 would expose the same sensitive receptors to noise as the Project along the proposed Mira-Loma Jefferson subtransmission line. As discussed for the Project in Section 2.6.15, *Construction Schedule*, underground construction activities under Alternative C1 would adhere to the allowable construction work hours specified for the City of Eastvale in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with underground duct bank installation would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations, which would cause a significant impact on nearby residences adjacent to Hellman Avenue. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be approximately the same as for the proposed Project, significant and unavoidable (Impact 4.13-2; Class I).

Operational noise impacts would be reduced under Alternative C1 because the underground segment of the subtransmission line would generate no corona discharge noise, although the corona noise from the rest of the above ground subtransmission line would continue to generate impacts that would be less than significant (Impact 4.13-1; Class III). The proposed source lines or source line facilities under Alternatives E1, E2, E3, or E4 also would result in corona discharge noise.

There would be no impact associated with Alternative C1 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment from the SCE ROW down to River Road would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 mile underground) and would replace approximately 5.4 miles of overhead line that would be associated with the proposed Mira Loma-Jefferson subtransmission line. This alternative would be constructed within a more densely populated area compared to the portion of the proposed subtransmission line it would replace. Alternative C2 would occur adjacent to residential receptors along Archibald Avenue between Belgrave Avenue and the Santa Ana River.

As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative C2 would adhere to the allowable construction work hours specified in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with the proposed Mira Loma-Jefferson subtransmission line would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations. These noise levels are representative of construction activities that would occur along the Alternative C2 alignment, which would cause a significant impact on nearby residences and sensitive receptors. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be greater under Alternative C2 because more residences would be exposed to significant noise levels due to the alternative's more densely populated area. The impact would be significant and unavoidable (Impact 4.13-2; Class I).

With regards to operational noise, the closest residences to the Alternative C2 subtransmission line would be exposed to a maximum corona discharge noise level of approximately 36 dBA L_{eq}, which over a period of 24 hours equals an L_{dn} of approximately 42 dBA. This noise level would be below the most stringent nighttime exterior noise level standards identified by the local jurisdictions along the alignment (i.e., 45 dBA L_{eq}) as well as the City of Corona's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}). The lowest ambient hourly L_{eq} and CNEL noise levels measured along the Alternative C2 alignment were approximately 43 dBA and 54 dBA, respectively (see Table 4.13-1); therefore, corona noise under Alternative C2 would not be expected to increase ambient noise levels at sensitive receptor locations. This impact would be greater compared to the proposed Project because more residences would be exposed to corona noise levels due to the alternative's more densely populated area. The impact under Alternative C2 would be less than significant (Impact 4.13-1; Class III). The proposed source lines or source line facilities under Alternatives E1, E2, E3, or E4 also would result in corona discharge noise.

There would be no impact associated with Alternative C2 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Under Alternative C3, up to three subtransmission-level (66 kV) battery storage and substation facilities, associated subtransmission and telecommunication lines, and upgrades to existing Jefferson Substation, would be constructed and operated instead of the Mira Loma-Jefferson 66 kV line component of the Project. With the exception of the 40 MW subtransmission-level battery

storage and substation site off Leeson Lane near the proposed Circle City Substation site, which is approximately 800 feet from the closest residences, each of the other two subtransmission-level battery storage and substation sites and associated subtransmission and telecommunication line alignments are in the immediate vicinity (i.e., within 50 feet) of receptors that are sensitive to noise. All components associated with Alternative C3 would be within the City of Corona.

As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative C3 would adhere to the City of Corona's allowable construction work hours specified in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

It is assumed that construction activities associated with the battery storage and substation facilities would be similar to those that would be associated with Circle City Substation and that construction activities associated with the subtransmission and telecommunication line connections would be similar to those that would be associated with the proposed source lines and Mira Loma-Jefferson subtransmission line. Therefore, the construction noise levels would be similar.

As shown in Tables 4.13-8 through 4.13-10, construction activities would increase ambient noise levels to 80 dBA L_{eq} or greater at distances well over 50 feet. These noise levels are representative of construction activities that would occur in the vicinity of sensitive receptors near the 50 MW and 42 MW sites and associated alignments, which would cause a significant impact. Implementation of Mitigation Measures 4.13-2a, 4.13-2bis recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be greater under Alternative C3 because the sensitive receptor noise exposure periods associated with construction of the battery storage facilities would be much longer (i.e., up to a year), compared to the exposure periods that would be experienced relative to construction of the Mira Loma-Jefferson subtransmission line (i.e., up to several weeks). The impact would be significant and unavoidable (Impact 4.13-3; Class I).

With regards to operations under Alternative C3, the closest residences to the Alternative C3 subtransmission line connections would be exposed to a maximum corona discharge noise level of approximately 36 dBA L_{eq}, which over a period of 24 hours equals an L_{dn} of approximately 42 dBA. This noise level would be below the City of Corona's nighttime exterior noise level standard (i.e., 50 dBA L_{eq}) as well as the City's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}). However, the primary noise sources that would be associated with Alternative C3 would be the substation 66/12 kV transformer bank connected to the switchrack and the HVAC units on top of the battery storage enclosures. It is assumed that the transformer banks would be positioned approximately 100 feet from the site perimeter and would conform to SCE

Specification A1-2009, which would require the transformer banks' sound pressure level to be no higher than 68 dBA (SCE, 2015). As a result, the highest average sound pressure level for the transformer bank would not be expected to exceed 68 dBA at a distance of 2 meters (approximately 7 feet). Based on the sound level for HVAC units proposed for the mechanical and electrical equipment room at Circle City Substation (SCE, 2016), the HVAC units would be expected to generate a noise level of approximately 50 dBA at 50 feet. It is assumed that up to five battery storage enclosures would be lined up parallel to the site perimeters that contain residential properties and that the HVAC units on top of the enclosures would be 50 feet from the site perimeter and separated from each other by approximately 73 feet.

With these assumptions, the maximum operational noise levels that would be associated with the 50 MW and 42 MW battery storage and substation facilities at the nearest residences are estimated to be approximately 54 dBA L_{eq} and 61 dBA CNEL (ESA, 2018). The CNEL would not exceed the City of Corona's land use exterior noise level limit at sensitive land uses (65 dBA L_{dn}), but the L_{eq} would exceed the City of Corona nighttime exterior noise level standard (i.e., 50 dBA L_{eq}), resulting in a significant impact. This impact could be reduced by installing a block wall that would attenuate noise level between 5 dBA and 10 dBA. Implementation of Mitigation Measure 4.13-1, below, would reduce the impact to less than significant through the installation of a block wall along the perimeter of the 50 MW and 42 MW sites (Impact 4.13-1; Class II). This impact would be greater compared to operations of the proposed Mira Loma-Jefferson subtransmission line. The impact at the 40 MW site would be less than significant given the long distance from the site to closest residences.

There would be no impact associated with Alternative C3 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

> **Mitigation Measure 4.13-1:** Should Alternative C3 be selected as part of the approved project, ~~prior to commencement of construction activities,~~ an 8-foot-high block wall shall be installed along the perimeter of the 50 MW and 42 MW subtransmission-level battery storage and substation sites immediately following the conclusion of grading activities at the sites. Until the permanent walls are constructed, temporary construction noise barriers that feature a solid panel and a weather-protected, sound-absorptive material on the construction activity side of the barrier shall be installed that shall block the line of sight between near-by sensitive receptors and the construction sites. The temporary construction noise barriers and permanent walls shall attenuate construction and operational noise levels. SCE shall retain an acoustical engineer to perform noise measures in the vicinity of the residences to verify that the 50 MW and 42 MW subtransmission-level battery storage and substation operational noise levels comply with the City's nighttime exterior noise level limit of 50 dBA. Documentation of compliance shall be submitted to the CPUC no later than 60 days after the start of operations. In the event the facility noise levels violate the standards, additional noise control techniques shall be initiated to connect the violation.
>
> **Significance after Mitigation:** Less than significant for operations (Impact 4.13-1; Class II) and significant and unavoidable for construction (Impact 4.13-2; Class I).

4.13.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Under Alternative D1, a distribution-level (12 kV) battery storage facility would be constructed and operated instead of the Circle City Substation and associated sources lines components of the Project. Residences at Corona La Linda Mobile Home Park would be approximately 800 feet from the Distribution-Level Battery Storage Alternative (Alternative D1) site fence line.

As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative D1 would adhere to the City of Corona's allowable construction work hours specified in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

Implementation of the distribution battery storage site under Alternative D1 would be expected to generate short-term construction noise levels similar to or less than those that have been estimated for implementation of the proposed Circle City Substation. These noise levels at the closest sensitive receptor locations would result in impacts that would be less than significant (Impact 4.13-2; Class III). This impact would be reduced compared to the Project given that construction of the substation source lines would not be constructed under Alternative D1. Significant and unavoidable noise impacts related to the proposed Mira Loma-Jefferson subtransmission line or facilities under Alternatives C1, C2, or C3 could still occur under this scenario, depending on the combination of alternatives selected.

Implementation of the distribution battery storage site under Alternative D1 would be expected to generate long-term operational noise levels similar to or less than those that have been estimated for implementation of the proposed Circle City Substation. These noise levels would result in impacts that would be less than significant (Impact 4.13-1; Class III). This impact would be reduced compared to the Project given that there would be no corona noise associated with the substation source lines because they would not be constructed under Alternative D1.

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would be located immediately adjacent to the Corona La Linda neighborhood, at a distance of approximately 100 feet, which is approximately 600 feet closer to the neighborhood than the proposed substation site.

As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative D2 would adhere to the City of Corona's allowable construction work hours specified in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work

would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

Implementation of the substation under Alternative D2 would be expected to generate short-term construction noise levels similar to or less than those that have been estimated for implementation of the proposed Circle City Substation; however, the noise levels at the nearest residences would be much higher given their closer proximity to the site. As shown in Table 4.13-8, construction activities associated with substation civil work would increase ambient noise levels to 80 dBA L_{eq} or greater at 125 feet. At 100 feet, this noise level would be up to 82 dBA L_{eq}, which would cause a significant impact on nearby residences adjacent to the site. Implementation of Mitigation Measures 4.13-2a and 4.13-2b are recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. In addition, new Mitigation Measure 4.13-2c, below, is recommended to achieve reductions needed to mitigate the impact to a less-than-significant level. Implementation of this mitigation measure would attenuate construction noise levels by at least 5 dBA with installation of a block wall prior to the commencement of construction. The mitigated noise level would be up to 77 dBA L_{eq}, Therefore, the daytime construction activities would not exceed the daytime construction noise threshold criterion, but any nighttime construction activities would continue to exceed the nighttime construction noise threshold criteria. This impact (4.13-2) would be increased under Alternative D2 and would be significant and unavoidable for nighttime construction (Class I) and mitigated to less than significant for daytime construction (Class II).

Implementation of the substation under Alternative D2 would be expected to generate long-term operational noise levels similar to or less than those that have been estimated for implementation of the proposed Circle City Substation; however, the noise levels at the nearest residences would be much higher given their closer proximity to the site. The combined noise level for the two transformer banks and two HVAC units at the closest sensitive receptors is estimated to be 51 dBA L_{eq} and 58 dBA L_{dn}. When accounting for the additional noise attenuation (between 5 dBA and 10 dBA) that would be achieved due to the 8-foot-high block wall that would be installed along the perimeter of the substation site that would block the line of sight between the proposed substation and the nearest residences, noise levels would be up to 46 dBA L_{eq} and 53 dBA L_{dn}. These noise levels would result in impacts that would be less than significant (Impact 4.13-1; Class III). This impact would be increased compared to the Project.

> **Mitigation Measure 4.13-2c:** Should Alternative D2 be selected as part of the approved project, the 8-foot-high block wall that is part of the alternative shall be installed along the perimeter of the substation site ~~prior to the commencement of substation construction activities~~ immediately following the conclusion of grading activities at the site. Until the permanent wall is constructed, a temporary construction noise barrier that feature a solid panel and a weather-protected, sound-absorptive material on the construction activity side of the barrier shall be installed that shall block the line of sight between near-by sensitive receptors and the construction site shall be installed.
>
> **Significance after Mitigation:** Significant and unavoidable for nighttime construction (Class I) and less than significant for daytime construction (Class II).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would be adjacent to residences along East Grand Boulevard and Quarry Street, and would pass adjacent to north side of City Park. As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative E1 would adhere to the allowable construction work hours specified for the City of Corona in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with underground duct bank installation would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations, which would cause a significant impact on nearby residences adjacent to the alternative alignment. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise thresholds. This impact would be approximately the same as for the proposed Project, significant and unavoidable (Impact 4.13-2; Class I).

Operational noise impacts would be reduced under Alternative E1 because the underground segment of the Pedley Source Lines would generate no corona discharge noise, although the corona noise from the rest of the above ground source lines would continue to generate impacts that would be less than significant (Impact 4.13-1; Class III). The proposed Mira Loma-Jefferson subtransmission line or facilities under Alternatives C1, C2, and C3 also would result in corona discharge noise.

There would be no impact associated with Alternative E1 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would be adjacent to the same sensitive receptors as the Project just west of the Interstate 15 to the proposed substation site. As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative E2 would adhere to the allowable construction work hours specified for the City of Corona in Table 4.13-6, or as allowed by variance if SCE determines that work would be necessary outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with underground duct bank installation would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations, which would cause a significant impact on nearby residences adjacent to the alternative alignment. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at

sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be approximately the same as for the proposed Project, significant and unavoidable (Impact 4.13-2; Class I).

Operational noise impacts would be reduced under Alternative E2 because the underground segment of the Pedley Source Lines would generate no corona discharge noise, although the corona noise from the rest of the above ground source lines would continue to generate impacts that would be less than significant (Impact 4.13-1; Class III). The proposed Mira Loma-Jefferson subtransmission line or facilities under Alternatives C1, C2, and C3 also would result in corona discharge noise.

There would be no impact associated with Alternative E2 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would include 1.3 miles of overhead lines in a double circuit configuration, which would be 0.1 mile longer than the proposed Databank Source Lines. However, unlike the proposed Databank Source Lines, which would include nearly 0.5 mile of underground subtransmission line installation, this alternative would include no underground line installation activities. Similar to the proposed Databank Source Lines, where the southwest end of the lines would be installed immediately adjacent to residences, Alternative E3 would be constructed immediately adjacent to several residences along Bel Air Street and Laurel Canyon Way. As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative E3 would adhere to the allowable construction work hours specified for the City of Corona in Table 4.13-6, or as allowed by variance if necessary, if SCE determines that work would be required outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-10, construction activities associated with source line installation would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptors immediately adjacent to the construction activities, which would cause a significant impact on nearby residences adjacent to the alternative alignment. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be greater under Alternative E3 compared to the proposed Project because there are more sensitive receptors adjacent the Alternative E3 alignment than the Databank Source Lines alignment, significant and unavoidable (Impact 4.13-2; Class I).

Operational noise impacts would be increased under Alternative E3 because there would be more overhead line near sensitive receptors that would generate corona discharge noise compared to the proposed Databank Source Lines. The impact would be less than significant (Impact 4.13-1; Class III). The proposed Mira Loma-Jefferson subtransmission line or facilities under Alternatives C1, C2, and C3 also would result in corona discharge noise.

There would be no impact associated with Alternative E3 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would result in only the proposed Databank Source Lines and the Circle City Substation to Corona Substation telecommunications line being connected to Circle City Substation and the Pedley Source Lines would not be constructed. As discussed for the Project in Section 2.6.15, *Construction Schedule*, construction activities under Alternative E4 would adhere to the allowable construction work hours specified for the City of Corona in Table 4.13-6, or as allowed by variance if SCE determines that work would be necessary outside the allowed periods. Therefore, no impact would occur related to a potential noise ordinance violation.

As shown in Table 4.13-9, construction activities associated with Databank Source Lines would increase ambient noise levels to 80 dBA L_{eq} or greater at sensitive receptor locations, which would cause a significant impact on nearby residences adjacent to the alternative alignment. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce noise levels and the associated nuisance at sensitive receptor locations to the extent practical. It is not possible to firmly substantiate that implementation of the mitigation measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. Therefore, even with these mitigation measures, some daytime construction activities would likely exceed the construction noise threshold criterion, and nearly all nighttime construction activities within 400 feet of sensitive receptors would continue to exceed the construction noise threshold criteria. This impact would be reduced compared to the proposed Project because the sensitive receptors along the proposed Pedley Source Lines alignment would not be exposed to construction noise. The impact would be significant and unavoidable (Impact 4.13-2; Class I).

Operational noise impacts would be reduced under Alternative E4 because the sensitive receptors along the proposed Pedley Source Lines alignment would not be exposed to corona noise; however, the overhead segments along the Databank Source Lines would continue to generate impacts that would be less than significant (Impact 4.13-1; Class III). The proposed Mira Loma-Jefferson subtransmission line or facilities under Alternatives C1, C2, and C3 also would result in corona discharge noise.

There would be no impact associated with Alternative E4 relative to vibration or exposing people to excessive airport or private airstrip noise (No Impact).

References – Noise

Acentech Incorporated, 2017. Circle City Substation Construction Noise Analysis, March 5, 2017.

California Department of Transportation (Caltrans), 1998. Technical Noise Supplement, October 1998. Available online at: www.dot.ca.gov/hq/env/noise/pub/TechnicalNoise Supplement.pdf. Accessed June 8, 2016.

Caltrans, 2004. Transportation- and Construction-inducted Vibration Guidance Manual, June 2004.

City of Chino, 2010. Envision Chino General Plan 2025. July 2010. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan.

City of Chino, 2016. Code of Ordinances. Available online at: https://www2.municode.com/library/ca/chino/codes/code_of_ordinances. Accessed on December 22, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/City-Departments/Community-Development/Planning-Division/FINAL-GP.aspx. Accessed on June 9, 2016.

City of Corona, 2015. Skyline Heights Project Draft Environmental Impact Report, p. 4.J-11.

City of Corona, 2016. City of Corona Noise Ordinance. Available online at: http://library.amlegal.com/nxt/gateway.dll/California/corona/coronacaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:corona_ca. Accessed on June 9, 2016.

City of Eastvale, 2012. City of Eastvale General Plan, June 13, 2012. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 9, 2016.

City of Eastvale. 2016. Eastvale, California – Code of Ordinances. Available online at: https://www.municode.com/library/ca/eastvale/codes/code_of_ordinances. Site Accessed on June 10, 2016.

City of Norco, 2015. Zoning/Planning. Available online at: http://www.norco.ca.us/business/zoning.asp. Accessed on June, 2016.

City of Norco, 2016. Norco Municipal Code. Online. http://www.codepublishing.com/ca/norco/. Accessed on December 22, 2016.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 9, 2016.

City of Ontario, 2015. Ontario Municipal Code. Available online at: http://www.amlegal.com/codes/client/ontario_ca/. Accessed on June 10, 2016.

County of Riverside, 2015. General Plan Noise Element, December 8, 2015.

Environmental Science Associates (ESA), 2018. Circle City and Mira Loma-Jefferson 66 kV Subtransmission Line Project Noise Supplement, March 2018.

Federal Highway Administration (FHWA), 2006. Roadway Construction Noise Model User's Guide, FHWA-HEP-05-054, DOT-VNTSC-FHWA-05-01, Final Report, January 2006.

Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006. Available online at: https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/fta-noise-and-vibration-impact-assessment. Accessed on June 8, 2016.

Los Angeles World Airports (LAWA), 2012 LAX Specific Plan Amendment Study Environmental Impact Report, Section 4.10. Available online at: https://lawamediastorage.blob.core.windows.net/lawa-media-files/media-files/lawa-web/lawa-our-lax/specific-plan-amendment-study/draft-eir/lax-spas-deir-041001-aircraft-noise.pdf

Riverside County, 2006. *Riverside County Municipal Code, Chapter 9.52, Noise Regulation*, adopted in 2006.

San Bernardino County Airport Land Use Commission, 1991. Comprehensive Land Use Plan – Chino Airport, November 1991. Available online at: http://www.sbcounty.gov/Uploads/lus/Airports/Chino.pdf. Accessed on June 26, 2016.

Southern California Edison (SCE), 2015. Proponent's Environmental Assessment for the Circle City and Mira Loma-Jefferson 66 kV Subtransmission Line Project, December 4, 2015.

SCE, 2016. Response to California Public Utilities Commission (CPUC) Data Request 2, Question 5b, May 9, 2016.

4.14 Population and Housing

This section provides a description of population and housing for the Project area, and evaluates impacts associated with implementation of the Project and alternatives. Population and housing data and projections were obtained from the California Department of Finance (CDOF) and Southern California Association of Governments (SCAG).

4.14.1 Setting

4.14.1.1 Population

The Project and alternatives would be located within unincorporated Riverside County and the cities of Chino and Ontario in San Bernardino County, and the cities of Corona, Eastvale, and Norco in Riverside County. Riverside and San Bernardino counties are located in southern California, east of Los Angeles and Orange counties.

Riverside County has experienced steady growth over the past three decades. The population has increased by approximately 76 percent between 1980 and 1990. The population estimates were 663,199 and 1,170,413, respectively. Between 1990 and 2000, the population increased by approximately 32 percent, from 1,170,413 in 1990 to 1,545,387 in 2000. Riverside County grew an additional 41 percent between 2000 and 2010, reaching an estimated 2,189,641 persons (CDOF, 2013). San Bernardino County has experienced steady growth as well. San Bernardino County's population increased by approximately 58 percent in the 1980's, from 895,016 in 1980 to 1,418,380 in 1990. The 2000 population estimate was 1,709,434, an increase of approximately 20 percent over 1990. San Bernardino County grew an additional 19 percent between 2000 and 2010, reaching an estimated 2,035,210 residents (CDOF, 2013).

The incorporated cities of Chino, Corona, Eastvale, Norco, and Ontario followed similar population growth trends within the same time period. **Table 4.14-1**, *2016 Population Estimates in the Project Area*, shows 2016 population estimates for Riverside and San Bernardino Counties and the cities of Chino, Corona, Eastvale, Norco, and Ontario.

TABLE 4.14-1
2016 POPULATION ESTIMATES IN THE PROJECT AREA

Population	Riverside County	San Bernardino County	City of Chino	City of Corona	City of Eastvale	City of Norco	City of Ontario
Total Population in 2016	2,347,828	2,139,570	85,934	164,659	63,162	26,896	169,869

SOURCE: CDOF, 2016.

Table 4.14-2, *Historic and Projected Population Growth in the Project Area*, summarizes historic and projected population growth from 2000 to 2020 for Riverside and San Bernardino counties, as well as the cities of Chino, Corona, Eastvale, Norco, and Ontario. As demonstrated in the table, the population in these areas is expected to increase substantially over the next 20 years.

TABLE 4.14-2
HISTORIC AND PROJECTED POPULATION GROWTH IN THE PROJECT AREA, 2000 – 2020

Area	2000 Population	2010 Population	% Change 2000 - 2010	Projected 2020 Population	% Change 2010 - 2020
Riverside County	1,545,387	2,189,641	41%	2,592,000	18%
San Bernardino County	1,709,434	2,035,210	19%	2,268,000	11%
City of Chino	67,168	77,983	16%	88,800	14%
City of Corona	124,966	152,374	22%	155,800	2%
City of Eastvale	n.a.	n.a.	n.a.	61,500	n.a.
City of Norco	24,157	27,063	12%	30,300	12%
City of Ontario	158,007	163,924	4%	203,800	24%

NOTES: n.a. = information not available. (The City of Eastvale was incorporated in 2010.)
SOURCE: CDOF, 2013; SCAG, 2012

4.14.1.2 Housing

According to the CDOF, at the beginning of 2016, Riverside County had an estimated 828,383 total housing units with a vacancy rate of approximately 13.9 percent. San Bernardino County had an estimated 711,781 total housing units with a vacancy rate of approximately 11.3 percent, and the vacancy rates in the cities of Chino, Corona, Eastvale, Norco, and Ontario were 3 percent, 2.7 percent, 5.6 percent, 1.9 percent, and 5.2 percent, respectively (CDOF, 2016). In addition to existing rental and ownership housing, there are numerous hotels and motels in the Project area for overnight accommodations. Housing data from 2016 for Riverside and San Bernardino counties and the cities of Chino, Corona, Eastvale, Norco, and Ontario are shown in **Table 4.14-3,** *2016 Housing Data Estimates in the Proposed Project Area.*

TABLE 4.14-3
2016 HOUSING DATA ESTIMATES IN THE PROJECT AREA

Area	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
Riverside County (County Total)	828,383	713,205	115,178	13.9%
San Bernardino County (County Total)	711,781	631,012	80,769	11.3%
City of Chino	23,808	23,084	754	3.0%
City of Corona	48,185	46,873	1,312	2.7%
City of Eastvale	16,424	15,508	916	5.6%
City of Norco	7,321	7,180	141	1.9%
City of Ontario	48,079	45,601	2,478	5.2%

SOURCE: CDOF, 2016.

As demonstrated in **Table 4.14-4**, *Household Estimates: 2008 to 2035,* the number of households in the cities of Chino, Corona, Eastvale, Norco, and Ontario and in Riverside and San Bernardino counties is forecast to increase between 2008 and 2035 (SCAG, 2012).

TABLE 4.14-4
HOUSEHOLD ESTIMATES: 2008 TO 2035

Year	Riverside County	San Bernardino County	City of Chino	City of Corona	City of Eastvale	City of Norco	City of Ontario
2008	679,000	606,000	20,100	44,600	13,500	7,000	44,600
2020	834,000	698,000	24,600	46,100	15,700	8,000	57,700
2035	1,092,000	847,000	29,200	48,800	17,700	8,700	87,300

SOURCE: SCAG, 2012.

4.14.1.3 Regulatory Setting

Federal

No federal regulations pertaining to population and housing apply to the Project or alternatives.

State

The Southern California Association of Governments (SCAG) is a Joint Powers Agency established under California Government Code Section 6502 et seq. Although SCAG does not have a direct regulatory role, it is designated as a Council of Governments, a Regional Transportation Planning Agency, and a Metropolitan Planning Organization for a six-county region including Riverside and San Bernardino counties that includes an association of local governments and agencies that voluntarily convene as a forum to address regional issues. SCAG prepares a Regional Housing Needs Assessment (RHNA) for the region, which defines the housing need allocation for each member local government in Southern California. The most recently published RHNA covered the planning period of January 1, 2006, to June 30, 2014. The RHNA is a key tool for SCAG and its member governments to plan for growth (SCAG, 2016).

Local

California Public Utilities Commission (CPUC) General Order No. 131-D explains that local land use regulations would not apply to the proposed Project. However, for informational purposes, the policies of local general plans and other planning documents pertaining to population and housing were reviewed to determine if they would otherwise be relevant to the proposed Project and alternatives. It was determined that there are no applicable policies related to population and housing that would otherwise be relevant to the Project or alternatives (County of San Bernardino, 2014; County of Riverside, 2014; City of Chino, 2013; City of Eastvale, 2013; City of Norco, 2013; and City of Ontario, 2010).

4.14.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant population and housing effects on the environment if it would:

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

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.14.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts related to population and housing.

4.14.4 Impacts and Mitigation Measures

a) Induce substantial population growth in an area, either directly or indirectly.

Impact 4.14-1: The Project could indirectly induce population growth. *Less than significant* (Class III)

Construction

The Project would have an indirect impact on population growth in the area if it encouraged people to move to the area to obtain construction employment. During the approximately 18-month construction period, up to 100 construction workers would be employed on any given day. Construction would be performed by either SCE construction crews or contractors. It is anticipated that all temporary positions would be filled from the local labor pool available in Riverside and San Bernardino counties, with workers expected to commute to the site rather than relocate. This could result in some need for temporary accommodation during construction, for instance, if workers were to engage in “weekly commuting” (staying in the local area during the work week and returning home on weekends). However, there are numerous hotels and motels near the Project sites and alignments to accommodate the need. Therefore, construction-related employment generated by the Project would have a less-than-significant impact on population growth because any short-term lodging demand created during construction could be accommodated by existing units. Project operation and maintenance would be handled by current SCE employees. No new permanent jobs would be created; therefore, no impact would result during Project operation and maintenance.

Operation

The Project would not include new homes or businesses, and so would not directly induce permanent population growth in the area during Project operation. Accordingly, the Project would have no direct impact on population growth inducement. Therefore, implementation of the Project

would not result in any significant increase to the local population or adverse effect on the availability of housing. Impacts would be less than significant.

The Project also would have an indirect impact on population growth if it would foster growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. The Project is designed to allow SCE to continue to provide reliable electrical service in its electric needs area (ENA) (see **Figure 2-1**, *Electrical Needs Area*, in Chapter 2, *Project Description*, for an illustration of the ENA), and to meet forecasted demand. The continued availability of electrical capacity does not normally ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effects on growth. The Project is designed to increase reliability and accommodate existing and planned electrical load, rather than to induce growth. Indirect impacts would be less than significant.

Mitigation: None required.

---

b) Displacement of existing housing units, necessitating the construction of replacement housing elsewhere. (No Impact)

The Project would be constructed within existing rights-of-way (ROWs) and easements, public ROWs or franchise, on existing SCE "fee-owned" property (i.e., property which is currently legally owned by SCE), and within proposed new or upgraded easements (SCE, 2015, p. 3-47). Implementation of the Project would not displace any residential housing units. Therefore, the Project would have no impact with regard to the displacement of existing housing units, nor would it necessitate the construction of replacement housing elsewhere. (No Impact)

---

c) Displacement of people, necessitating the construction of replacement housing elsewhere. (No Impact)

As noted above, the Project would not displace any housing; it also would not displace people or any other structures that are occupied by people. Therefore, the Project would have no impact associated with the displacement of people or the construction of replacement housing. (No Impact)

4.14.5 Alternatives

4.14.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, construction-related impacts associated with housing and population that would result under the proposed Project, as discussed in Section 4.14.4, *Impacts and*

Mitigation Measures, would not occur. Therefore, there would be no impact under the No Project Alternative (No Impact).

4.14.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Implementation of Alternative B would result in fewer temporary construction crews compared to the proposed Project as workers would not be required for construction of the proposed substation or source lines. Because it would not directly or indirectly induce substantial long-term population growth during construction or operation, this impact would be less than significant (Impact 4.14-1; Class III). Additionally, the subtransmission line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 differs from the proposed Mira Loma-Jefferson subtransmission line in that it includes a half-mile-long underground conduit installation within Hellman Avenue from its intersection with American Heroes Park to its intersection with Pine Avenue/Schleisman Road. Given the additional underground line construction work that would be associated with this alternative compared to the proposed Mira Loma-Jefferson subtransmission line, it would increase the duration of activities conducted by the underground line construction crew, increasing the duration of crew's need for temporary housing accommodations. However, the increased utilization of temporary housing would not result in a situation where temporary workers would not be accommodated. Therefore, because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Impact 4.14-1; Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the subtransmission line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 differs from the proposed Mira Loma-Jefferson subtransmission line in that it would transition to an underground line at Archibald Avenue and continue within Archibald Avenue to Smith River Road, where it would transition to overhead, and continue south along Archibald Avenue. Like the proposed Project, it would span the Santa Ana River, but unlike the Project, this alternative would result in an additional 1.2 miles of the line being installed underground. The additional underground line construction work that would be associated with this alternative compared to the proposed Mira Loma-Jefferson subtransmission line would increase the duration of activities conducted by the underground line construction crew, increasing the duration of underground line crew's need for temporary housing accommodations.

However, this alternative would result in shorter distance of overhead line construction compared to the proposed subtransmission line, decreasing the overhead line crew's need for temporary housing accommodations. The overall impact of Alternative C2 on population and housing during construction would be the same as for the proposed Mira Loma-Jefferson subtransmission line because it would result in a similar size of temporary construction crews. Therefore, because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Impact 4.14-1; Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the subtransmission line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

The overall impact of Alternative C3 on population and housing would be greater than the proposed Project because it would result in more temporary construction crews due to the increased scope of construction activities associated with the three subtransmission-level battery storage facilities under Alternative C3 compared to the Mira-Loma Jefferson subtransmission line. However, the increased utilization of temporary housing would not be expected to result in a situation where temporary workers would not be accommodated. Because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Impact 4.14-1; Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the facilities under Alternative C3 would be located such that they would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

4.14.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 impacts on population and housing would be less than the Project because it would likely require a smaller temporary construction crew for the battery storage facility compared to the proposed Circle City Substation. Therefore, because it would not directly or indirectly induce substantial long-term population growth during construction or operation, this impact would be less than significant (Impact 4.14-1; Class III). Additionally, the battery storage site would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would differ from the proposed Project by locating the Circle City Substation at a parcel just east of the proposed substation site. The impacts of Alternative D2 on population and

housing would be the same as for the Project because it would result in construction of a substation of the general same size and capacity, and require the same temporary construction crew and existing operation and maintenance personnel. Therefore, because it would not directly or indirectly induce substantial long-term population growth during construction or operation, this impact would be less than significant (Impact 4.14-1; Class III). Additionally, the substation would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would differ from the proposed Project by traveling along Quarry Street, parallel to and south of the proposed Pedley Source Lines alignment on 3rd Street. Given the additional underground line construction work that would be associated with this alternative compared to the proposed Pedley Source Lines, it would increase the duration of activities conducted by the underground line construction crew, increasing the duration of the crew's need for temporary accommodations. However, the increased utilization of temporary housing would not be expected to result in a situation where temporary workers would not be accommodated. Therefore, because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Impact 4.14-1; Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the source line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria. (No Impact)

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines, but would be installed underground from just west of I-15 to the proposed Circle City Substation site. Given the additional underground line construction work that would be associated with this alternative compared to the proposed Pedley Source Lines, it would increase the duration of activities conducted by the underground line construction crew, increasing the duration of crew's need for temporary housing accommodations. However, the increased utilization of temporary housing would not be expected to result in a situation where temporary workers would not be accommodated. Therefore, because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the source line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an overhead line alternative alignment to the proposed Databank Source Lines. Compared to the proposed Databank Source Lines, this alternative would include no underground line work, but would result in a longer length of overhead line. The overall impact of Alternative E3 on population and housing during construction would be the same as for the proposed Databank Source Lines because it would result in a similar size of temporary construction

crews. Therefore, because it would not directly or indirectly induce substantial long-term population growth, this impact would be less than significant (Impact 4.14-1; Class III). As under the Project, no impact would result during operation and maintenance. Additionally, the source line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

Alternative E4: Databank 66 kV Source Lines Only

The overall impact of Alternative E4 on population and housing would be less than the proposed Project because it would likely result in fewer temporary construction crews due to the shorter length of source line construction compared to the proposed Project. Therefore, because it would not directly or indirectly induce substantial long-term population growth during construction or operation, this impact would be less than significant (Impact 4.14-1; Class III). Additionally, the source line would be located such that it would not displace people or existing housing, and would result in no impact with respect to these criteria (No Impact).

References – Population and Housing

California Department of Finance (CDOF), 2013. Historical Census Populations of Counties and Incorporated Cities in California, 1850–2010, updated March 2013. Available at http://www.dof.ca.gov/research/demographic/state_census_data_center/historical_census_1850-2010/view.php. Accessed on May 25, 2016.

CDOF, 2016. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2016 with 2010 Census Benchmark. Available at http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php. Accessed on May 25, 2016.

City of Chino, 2013. City of Chino 2013-2021 Housing Element. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 2, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on May 24, 2016.

City of Eastvale, 2013. City of Eastvale 2013-2021 Housing Element. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 2, 2016.

City of Norco, 2013. City of Norco 2014-2021 Housing Element. Accessed on June 9, 2016.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on May 24, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on May 24, 2016.

County of San Bernardino, 2014. County of San Bernardino 2013-2021 Housing Element. Available online at: http://www.sbcounty.gov/uploads/lus/GeneralPlan/Adopted_5th_Cycle_Housing_Element_County_of_San_Bernardino2013-2021.pdf. Accessed on June 1, 2016.

Southern California Association of Governments (SCAG), 2012. Adopted 2012 RTP Growth Forecast. Available at http://gisdata.scag.ca.gov/Pages/SocioEconomicLibrary.aspx?keyword=Forecasting. Accessed on May 25, 2016.

SCAG, 2016. About SCAG. Available at http://scag.ca.gov/about/Pages/Home.aspx. Accessed on May 25, 2016.

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment (December 2015), p. 3-47

4.15 Public Services

This section analyzes the impact of the Project and alternatives on the provision of public services within the study area. This section also identifies adverse physical impacts on the environment that could result from a need to provide new or physically altered public facilities, resulting from the Project and alternatives. This analysis reviews fire protection and emergency medical response, police services, schools, and other public services. Parks and recreational resources are discussed in Section 4.16, *Recreation*.

4.15.1 Setting

4.15.1.1 Fire Protection and Emergency Medical Services

Riverside County Fire Department

The Riverside County Fire Department partners with the California Department of Forestry and Fire Protection (CAL FIRE), 20 partner cities, and the Rubidoux Community Services District to provide fire services to the residents and visitors of Riverside County, their partner cities and local cooperating fire agencies, and the State of California under the California Master Mutual Aid Agreement. The Riverside County Fire Department operates 97 fire stations that serve unincorporated communities and cities throughout the 7,206 square miles of Riverside County and provides full service, municipal and wildland fire protection, pre-hospital emergency medical response by paramedics and emergency medical technicians (EMTs), technical rescue services, and response to hazardous materials discharges (Riverside County Fire Department, 2016).

San Bernardino County Fire Department

The San Bernardino County Fire Department provides fire and emergency response services to more than 60 communities and cities and all unincorporated areas of the County. San Bernardino County Fire Department's Office of Emergency Services serves as the Operational Area Lead Agency, coordinating the provision of emergency services with the 24 cities and towns in San Bernardino County (San Bernardino County Fire Department, 2016a). Chino and Ontario are located within the Valley Division (Division 1) of San Bernardino County Fire Department's jurisdiction. The closest station to the Project alignment is Station 74, located at 11500 Live Oak Avenue in Fontana. The Valley Division serves 585 square miles and 210,800 residents, and consists of two battalions with 250 fire suppression personnel and 15 fire stations (San Bernardino County Fire Department, 2016b).

City of Corona

The Corona Fire Department has 116 employees, including firefighters and support staff. The Department deploys from seven fire stations with nine fire-fighting trucks, which are strategically located throughout the City to meet the emergency needs of the 159,000 citizens and visitors. In 2014, the Department responded to over 11,000 calls for service (City of Corona, 2016a). The closest station to a Project alignment is Corona Fire Station #2, located at 225 East Harrison Street approximately 350 north of the proposed Pedley Source Lines alignment (City of Corona, 2016b).

City of Eastvale

The City of Eastvale contracts with the Riverside County Fire Department and CAL FIRE for all City fire services. Station 27 in Eastvale is located at 7067 Hamner Avenue and provides full service, municipal and wildland fire protection, pre-hospital emergency medical response by paramedics and EMTs, technical rescue services, and response to hazardous materials discharges. About 83 percent of the 1,400 incidents responded to a year on average are medical emergencies and about 13 percent are fires. The other four percent of incidents include technical rescues and hazardous materials incidents (City of Eastvale, 2016a).

City of Norco

The City of Norco contracts with the Riverside County Fire Department and CAL FIRE for all City fire services. Station 47 in Norco is located at 3902 Hillside Avenue (City of Norco, 2016a).

City of Chino

The City of Chino is served by the Chino Valley Independent Fire District (CVIFD), which is located in the southwest region of San Bernardino County. CVIFD's jurisdiction covers approximately 80 square miles and has an estimated population of 173,000. In 2015, personnel responded to over 10,000 emergency incidents. CVIFD is made up of seven stations, one administration building, and one training center (CVIFD, 2016).

City of Ontario

The Ontario Fire Department works out of eight stations, responds to more than 15,000 calls per year, and serves a city population of approximately 173,000 people (City of Ontario, 2016a). The Ontario Fire Department employs 58 firefighter/paramedics and 66 firefighter/EMTs. All eight fire engines are staffed with at least two firefighter/paramedics (City of Ontario, 2016b).

4.15.1.2 Police Protection

State

The California Highway Patrol (CHP) is a law enforcement agency created in 1929 to provide uniform traffic law enforcement for the state of California. The CHP has jurisdiction over all interstates and state routes in the Project area including: I-10, I-15, SR 60, SR 71, SR 142, SR 210, SR 83, and SR 66. The Project area is served by the Inland Division. The nearest office is in Rancho Cucamonga, at 9530 Pittsburgh Avenue (CHP, 2016).

Local

Riverside County Sheriff's Department

The Riverside County Sheriff's Department consists of a staff of over 4,000 that serve across more than 7,200 square miles and police 17 of the 28 cities in Riverside County. The Riverside County Sheriff's Department is the second largest Sheriff's Office in California, managing five correctional facilities, Coroner-Public Administrator duties, and providing court services (Riverside County Sheriff's Department, 2016a). There are ten stations total, and the Jurupa

Valley Station is the closest station to the Project, approximately 7 miles east of the Mira Loma Substation in Jurupa Valley (Riverside County Sheriff's Department, 2016b).

San Bernardino County Sheriff's Department

The San Bernardino County Sheriff's Department, in collaboration with various cities and other agencies that have jurisdiction in the County, provides law enforcement services to the incorporated and the unincorporated communities in the County. Many cities have contracted police protection services to the San Bernardino County Sheriff's Department. The San Bernardino County Sheriff's Department serves over two million residents, employs about 3,300 people, has 15 patrol stations, and responds to about 725,000 calls for service annually. The nearest patrol station is in Rancho Cucamonga, at 10510 Civic Center Drive (San Bernardino County Sheriff's Department, 2016).

City of Corona

The Corona Police Department has a staff of over 220 employees, including officers and support staff that are responsible for the protection and safety of Corona's residents and visitors. According to the Corona Police Department Strategic Plan 2016-2019, the average emergency response time is 5 minutes and 28 seconds (Corona Police Department, 2016).

City of Eastvale

The City of Eastvale is a contract city with the Riverside County Sheriff's Department. The personnel assigned to Eastvale operate out of the Jurupa Valley Station which is located at 7477 Mission Boulevard in Jurupa Valley (City of Eastvale, 2016b). The Jurupa Valley Station commander serves as city police chief (Riverside County Sheriff's Department, 2016b).

City of Norco

The City of Norco also contracts with the Riverside County Sheriff's Department for law enforcement services. The Norco office has limited hours of operation, and is located at 2870 Clark Avenue (Riverside County Sheriff's Department, 2016b). The Norco Citizens Patrol was formed in 1995 to assist the City of Norco's contract police force. Trained Citizen Patrol members volunteer their time and actively patrol the streets in three marked patrol vehicles (City of Norco, 2016b).

City of Chino

The Chino Police Department, located at 5450 Walnut Avenue, comprises more than 150 employees, both sworn and professional staff, and over 50 dedicated volunteers. The Chino Police Department serves more than 85,000 residents within 30 square miles. The Chino Police Department handles over 8,000 calls for service each month and provides full service operations in various divisions (Chino Police Department, 2016).

City of Ontario

The Ontario Police Department has three main service bureaus and employs 230 sworn police officers, 109 civilian personnel, and four K-9 units. The Ontario Police Department has one main

station, located at 2500 South Archibald Avenue, and one substation at the Ontario Mills Mall, located at 1 Mills Circle. In addition to serving the City of Ontario, the Ontario Police Department participates in mutual aid agreements with different public agencies to provide the optimum level of service during times of emergency. The Ontario Police Department holds a mutual aid agreement with the San Bernardino County Sheriff's Department and various jurisdictions surrounding Ontario. The City of Ontario also participates in a statewide mutual aid program facilitated by the Governor's Office of Emergency Services (City of Ontario, 2009).

4.15.1.3 Schools

The Project would be located within four school districts: the Corona-Norco Unified School District serves the cities of Corona, Eastvale, and Norco in Riverside County and had an enrollment of 53,354 students in 2016 (Riverside County Office of Education, 2016); the Chaffey Joint Union High School District (24,361 students), the Ontario-Montclair School District (21,952 students), and the Chino Valley Unified School District (29,314 students) serve areas in San Bernardino County (Ed-Data, 2017).

4.15.1.4 Parks

Parks and other recreational facilities within Riverside and San Bernardino counties are provided by federal, State, and local agencies, as well as recreation departments within the cities of Chino, Ontario, Corona, Eastvale, and Norco. See Section *4.16, Recreation*, for additional discussion of recreational facilities, including parks in the vicinity of the Project.

4.15.1.5 Other Public Facilities

Libraries

The nearest libraries to the Project are the Corona Public Library, located at 650 South Main Street in Corona, approximately 0.65 mile southeast of the Corona Substation; the Home Gardens Library, located at 3785 South Neece Street in Corona, approximately 0.35 mile northeast of the proposed Circle City Substation site; and the South Ontario Library, located at 3850 East Riverside Drive in Ontario, approximately 0.5 mile northwest of the Mira Loma Substation.

Medical Facilities

There are several medical facilities in the Project area, including the Kaiser Permanente Corona Medical Offices, Corona Doctors Medical Clinics, Riverside Medical Clinic, Corona Regional Medical Center, and Healthpointe Corona. All listed medical facilities are within 1 mile of the Project alignments.

4.15.1.6 Regulatory Setting

Federal

There are no federal policies or regulations pertaining to public services that would be applicable to the Project.

State

There are no state policies or regulations pertaining to public services that would be applicable to the Project.

Local

California Public Utilities Commission (CPUC) General Order No. 131-D explains that local land use regulations would not apply to the Project. However, for informational purposes, the goals and policies of local general plans pertaining to public services that would otherwise be relevant to the Project and alternatives are described below.

Riverside County General Plan

The following policies in the Riverside County General Plan pertain to public services (County of Riverside, 2014):

> *Policy S 5.2:* Reduce fire threat and strengthen fire-fighting capability so that the County could successfully respond to multiple fires (AI 88).
>
> *Policy S 5.8:* Periodically review inter-jurisdictional fire response agreements, and improve firefighting resources as recommended in the County Fire Protection Master Plan to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations, and the risk posed by multiple ignitions, to ensure that (AI 4, AI 88):
>
> - Fire reporting and response times do not exceed those listed in the County Fire Protection Master Plan identified for each of the development densities described;
> - Fire flow requirements (water for fire protection) are consistent with Insurance Service Office (ISO) recommendations; and
> - The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

San Bernardino County General Plan

The following San Bernardino County policies pertain to public services (County of San Bernardino, 2007):

> *Policy CI 16.1:* Continue the consolidation efforts of the Fire Department to maintain the continued operation, services, facilities, and current infrastructure but also to ensure the provision of operations, services, facilities, and internal infrastructures into the future.
>
> *Policy CI 17.1:* Appropriately prioritize calls for service and seek sufficient staffing levels to ensure response times are reasonable and efforts to deter crime are optimized.

City of Corona

The following policies within the Parks, Schools, and Libraries Element and the Police and Fire Services Element of the City of Corona General Plan pertain to public services (City of Corona, 2004).

Policy 8.14.1: Provide adequate school facilities within Corona in order to serve the needs of residents, in accordance with school district standards and student generation rates.

Policy 8.15.1: Cooperate with school districts to ensure that all school-age children have equal access to equitable facilities.

Policy 8.15.2: Cooperate with school districts to ensure that educational facilities with sufficient permanent capacity are constructed to meet the needs of current and projected enrollment.

Policy 9.1.1: Ensure that police staffing and facilities are expanded commensurably to serve the needs of the City's growing population and business community.

Policy 9.1.3: Assess the impacts of incremental increases in community development density and intensity and subsequent impacts on traffic congestion, municipal infrastructure capacity, and emergency response times. Ensure through the design review process that new development and re-development will not result in a reduction of law enforcement services below acceptable, safe levels.

Policy 9.1.4: Periodically evaluate population growth, development characteristics, level of service, and incidence of crime in the City of Corona to ensure that an adequate level of police service is maintained.

Policy 9.1.6: Cooperate with the Riverside County Sheriff's Department to provide backup police assistance in emergency situations.

Policy 9.2.1: Ensure that fire staffing and facilities are expanded commensurably to serve the needs of the City's growing population and business community so as to maintain a targeted 5-minute or less response time.

Policy 9.2.4: Assess the impacts of incremental increases in community development density and intensity and subsequent impacts on traffic congestion, municipal infrastructure capacity, fire hazards, and emergency response times. Ensure through the design review process that new development and re-development will not result in a reduction of fire protection services below acceptable, safe levels.

Policy 9.2.6: Cooperate with the Riverside County Fire Department and other participants in the State of California Master Mutual Aid Agreement for assistance in emergency situations.

City of Eastvale

The following policies within the Safety Element of the City of Eastvale General Plan pertain to public services (City of Eastvale, 2012).

Policy S-10: All proposed construction shall meet minimum standards for fire safety as defined in the City's Building or Fire codes, based on building type, design, occupancy, and use.

Policy S-11: Development in hazardous fire areas shall include secondary public access, unless determined otherwise by the Fire Chief.

Policy S-20: The City shall work with the Riverside County Fire Department to ensure the safety and protection of Eastvale and its community members.

Policy S-21: The City shall ensure the safety and protection of Eastvale and its community members by providing appropriate first response to emergencies and ensuring that sufficient resources are available to provide adequate protection as the community grows.

City of Norco

The following policies within the City of Norco's Land Use Element pertain to public services (City of Norco, 2001).

Policy 2.5.3a: For all new development, existing and projected design capacities for affected schools shall be determined.

Policy 2.5.3b: The City will seek to maintain an on-going relationship with the school district for any proposed school construction, and to stay abreast of potential changes in school attendance boundaries.

Policy 2.5.3c: No new residential development shall be allowed until proof has been provided that school district impact fees have been paid in full, or the provision for the payment of fees has been agreed to by the school district.

Policy 2.5.3d: All new residential construction shall include the necessary infrastructure to provide services concurrent with City standards, including a lateral connection to the City's sewer system for each single lot that is developed with a home.

City of Chino

The following goals and policies within the Public Facilities and Services Element of the City of Chino General Plan pertain to public services (City of Chino, 2010).

Goal PFS-1: Provide excellent fire protection and emergency response services.

Policy 1: The City shall continue to support the CVIFD to provide adequate fire protection services to the City of Chino.

Policy 2: The City shall work with the CVIFD to ensure that first response travel time is maintained and enhanced.

Policy 4: The City shall work with the CVIFD to plan fire station locations to maintain or enhance current response levels.

Goal PFS-2: Maintain a safe environment in Chino through law enforcement and crime prevention.

Policy 1: The City shall continue to maintain adequate police staffing, performance levels, and facilities to serve Chino's existing and future population.

City of Ontario

The following policies within the Safety Element of the City of Ontario General Plan pertain to public services (City of Ontario, 2010).

Policy S3-3: Fire and Emergency Medical Services. We maintain sufficient fire stations, equipment, and staffing to respond effectively to emergencies.

Policy S3-6: Interagency Cooperation. In order to back up and supplement our capabilities to respond to emergencies, we participate in the California Fire Rescue and Mutual Aid Plan.

Policy S7-1: Police Unit Response. We respond to calls for service in a timely manner.

Policy S7-6: Partnerships. We partner with other local, state and federal law enforcement agencies and private security providers to enhance law enforcement service to Ontario.

4.15.2 Significance Criteria

According to Appendix G of CEQA Guidelines, a project would result in significant public services effects on the environment if it would:

a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

   i. Fire protection;

   ii. Police protection;

   iii. Schools;

   iv. Parks; or

   v. Other public facilities.

4.15.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts on public services.

4.15.4 Impacts and Mitigation Measures

4.15.4.1 Approach to Analysis

This impact analysis considers the potential public services impacts associated with the construction, operation, and maintenance of the Project.

a) Result in substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for:

i) *Fire protection. (No Impact)*

Construction

Project construction could result in emergency situations that require emergency response services, including fire protection. However, the Project would not introduce any new uses to the area that would generate long-term changes to or demand for fire protection services. Fire

protection service effects would be limited primarily to the construction period. Temporary lane closures during construction activities could affect emergency response times, but not to the extent that the construction of new or altered facilities would be necessary to provide fire protection services. SCE anticipates that construction of the Project would take approximately 18 months and require approximately 100 workers on any given day. It is anticipated that all temporary positions would be filled from the local labor pool available in Riverside and San Bernardino counties, with workers expected to commute to the site rather than relocate. Since construction activities would be limited in duration and would require a small, local construction workforce, they would not increase long-term demand for fire protection services such that new or physically altered facilities would be required; no impact would occur.

Operation

Once constructed, the subtransmission lines and substation would require routine maintenance, inspection, and vegetation management activities to be provided by SCE, but would not require additional personnel above existing staffing levels. As described in Chapter 2, *Project Description*, Section 2.7, vegetation would be maintained to facilitate access and for fire prevention (e.g., maintenance for poles would include clearing of vegetation around the poles). Furthermore, the local fire protection facilities and infrastructure that would protect the Project are already in place, and would not change as a result of the Project. For these reasons, operation and maintenance of the Project would not require construction of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

---

ii) *Police protection. (No Impact)*

Construction

Potential police protection service effects would be limited primarily to the construction period. Temporary lane closures during construction activities could affect police protection response times, but not to the extent that the construction of new or altered facilities would be necessary to provide police protection services. Police response may be required in the event of a trespasser at a Project work site or at Circle City Substation. As described in Chapter 2, *Project Description*, security lighting and fencing or wall at the construction staging areas and Circle City Substation would reduce opportunities for trespassing and the need for police services. Although the Project may result in increased demand for police services, such increase would be negligible. Therefore, the Project would not require construction of new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

Operation

Police response may be required in the event of a trespasser or other criminal activity at the Circle City Substation once the Project is constructed. Security lighting and the wall at the substation would reduce opportunities for trespassing and the need for police services. Although the Project may result in increased demand for police services, such increase would be negligible. Therefore,

the Project would not require construction of new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance standards. There would be no impact.

---

iii) *Schools. (No Impact)*

Construction

As previously described, Project construction is estimated to result in the employment of up to 100 workers, who are expected to commute to the proposed Project sites and alignments from within Riverside and San Bernardino counties. Therefore, it is not expected that the Project construction workforce would relocate school-aged children into the service areas of the school districts near the Project. The Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause significant environmental effects. There would be no impact.

Operation

As discussed in Section 4.14, *Population and Housing,* the Project would not result in substantial increases in the local population or demand for housing, which typically are associated with an increased demand for public school services. Therefore, the Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause significant environmental effects. There would be no impact.

---

iv) *Parks. (No Impact)*

Construction and Operation

For the reasons described in Section 4.16, *Recreation*, which describes the Project's potential to cause impacts with respect to the accelerated deterioration of park facilities and the construction of new park facilities, the Project would not require the construction of new parks or modification of existing parks, the construction of which could cause significant environmental effects. There would be no impact.

---

v) *Other public facilities. (No Impact)*

Construction and Operation

The Project would not result in substantial adverse impacts to other public facilities (e.g., public libraries, hospitals, or other civic uses) because, as discussed above, the Project would not result in a significant increase in local population or housing, which would typically be associated with increased demand for such public facilities. Although unlikely, it is possible that Project

construction could result in some increased use of other types of public services such as medical facilities and libraries. However, any such increase would not be substantial and would not require the construction of new public facilities or modification of existing public facilities, the construction of which could cause significant environmental effects. There would be no impact.

4.15.5 Alternatives

4.15.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would have no effect on public services (No Impact).

4.15.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

As under the proposed Project, Alternative B would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would include a half-mile-long underground conduit installation within Hellman. As under the proposed Project, Alternative C1 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards. (No Impact).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

This alternative segment would be approximately 3.9 miles in length (2.7 miles aboveground and 1.2 mile underground) and would replace approximately 5.4 miles of overhead line that would be associated with the proposed Mira Loma-Jefferson subtransmission line. As under the proposed Project, Alternative C2 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Alternative C3 would include construction of three subtransmission-level battery storage and substation facilities instead of the Mira-Loma Jefferson subtransmission line. As under the proposed Project, Alternative C3 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

4.15.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would include construction of a distribution-level battery storage facility instead of the Circle City Substation and associated source lines. As under the proposed Project, Alternative D1 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative D2: 66/12 kV Substation Site Alternative

As under the proposed Project, locating Circle City Substation adjacent to the proposed site under Alternative D2 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative E1: Quarry Street 66 kV Source Lines Segment

Alternative E1 would differ from the proposed Project by traveling along Quarry Street, parallel to and south of the proposed Pedley Source Lines alignment on 3rd Street. As under the proposed Project, Alternative E1 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines, but would be installed underground from just west of I-15 to the proposed Circle City Substation site. As under the proposed Project, Alternative E2 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an overhead line alternative alignment to the proposed Databank Source Lines. As under the proposed Project, Alternative E3 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

Alternative E4: Databank 66 kV Source Lines Only

As under the proposed Project, Alternative E4 would not require construction of new or physically altered fire or police protection facilities, schools, parks, or other public facilities in order to maintain acceptable service ratios, response times, or other performance standards (No Impact).

References – Public Services

California Highway Patrol (CHP), 2016. Inland Division. Available at https://www.chp.ca.gov/find-an-office/inland-division. Accessed on April 27, 2016.

Chino Police Department, 2016. Department Information. Available at http://joinchinopd.org/about-us/mission-statement/. Accessed on April 20, 2016.

Chino Valley Independent Fire District (CVIFD), 2016. District Overview. Available at http://www.chinovalleyfire.org/Index.aspx?NID=204. Accessed on April 14, 2016.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on May 24, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on May 24, 2016.

City of Corona, 2016a. Fire Department. Available at http://joinchinopd.org/about-us/mission-statement/. Accessed on May 23, 2016.

City of Corona, 2016b. Fire Headquarters and Stations. Available at http://www.discovercorona.com/City-Departments/Fire-Department/Our-Department/Fire-HQ-Stations.aspx. Accessed on May 23, 2016.

City of Eastvale, 2012. City of Eastvale General Plan. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on May 24, 2016.

City of Eastvale, 2016a. Fire Department. Available at http://www.eastvaleca.gov/city-hall/fire-department. Accessed on May 23, 2016.

City of Eastvale, 2016b. Police Department. Available at http://www.eastvaleca.gov/city-hall/police-department. Accessed on May 23, 2016.

City of Norco, 2001. City of Norco General Plan Land Use Element. Accessed June 20, 2016.

City of Norco, 2016a. Welcome to the City of Norco Fire Department. Available at http://www.norco.ca.us/depts/fire/%5Cdefault.asp. Accessed on May 23, 2016.

City of Norco, 2016b. About Us. Available at http://www.norco.ca.us/depts/sheriff/citizens/about.asp. Accessed on May 23, 2016.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on Month Date, Year.

City of Ontario, 2016a. Fire. Available at http://www.ontarioca.gov/fire. Accessed on April 15, 2016.

City of Ontario, 2016b. EMS. Available at http://www.ontarioca.gov/fire/ems. Accessed on April 15, 2016.

Corona Police Department, 2016. Corona Police Department Strategic Plan 2016-2019. Available at http://www.discovercorona.com/CityOfCorona/media/Media/Police/Documents/2016-Strategic-Plan-(2016-to-2019)-FINAL.pdf. Accessed on May 23, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on Month Date, Year.

County of San Bernadino, 2007. County of San Bernadino General Plan. Available online at: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed on Month Date, Year.

Education Data Partnership (Ed-Data), 2017. Available at www.ed-data.org. Accessed January 5, 2017.

Riverside County Fire Department, 2016. Chief's Message. Available at http://www.rvcfire.org/ourDepartment/ChiefsMessage/Pages/default.aspx. Accessed on May 19, 2016.

Riverside County Office of Education, 2016. Riverside County Superintendent of Schools. Available at http://www.rcoe.us/riverside-county-superintendent-schools/. Accessed on May 24, 2016.

Riverside County Sheriff's Department, 2016a. Sheriff Stan Sniff. Available at http://www.riversidesheriff.org/department/. Accessed on May 23, 2016.

Riverside County Sheriff's Department, 2016b. Contacting the Jurupa Valley Station. Available at http://www.riversidesheriff.org/stations/jurupa.asp. Accessed on May 23, 2016.

San Bernardino County Fire Department, 2016a. About the San Bernardino County Fire Department. Available at http://www.sbcfire.org/admin/about.aspx. Accessed on April 13, 2016.

San Bernardino County Fire Department, 2016b. San Bernardino County Fire and Rescue Station Map. Available at http://sbcfire.org/fire_rescue/stations/default.htm. Accessed on April 26, 2016.

San Bernardino County Sheriff's Department, 2016. Sheriff's Jobs. Available at http://sheriffsjobs.com/. Accessed on May 25, 2016.

4.16 Recreation

This section presents the impacts on parks, open space, and recreational resources that would result from implementation of the Project and alternatives.

4.16.1 Setting

Existing recreational and open space resources in the Project area are discussed in this section as well as applicable plans, policies, and regulations. A wide variety of recreational activities are provided by federal, State, and local agencies within Riverside and San Bernardino counties, as well as recreation departments within the cities of Chino, Ontario, Corona, Eastvale, and Norco. See **Table 4.16-1**, *Parks within 1 Mile of the Proposed Project Alignments*, for a list of parks within the Project area.

4.16.1.1 Federal Lands

Federal lands managed by the U.S. Forest Service in Riverside County include the Cleveland National Forest, approximately 12 miles south of the Project (USDA, 2016a). The Bureau of Land Management (BLM) manages land just south of the San Bernardino County line, in the northwest corner of Riverside County (BLM, 2016). In addition, the Santa Rosa and San Jacinto Mountains National Monument is partially in Riverside County and is administered jointly by the BLM and the U.S. Forest Service, approximately 70 miles southeast of the Project (USDA, 2016b).

Three national parks managed by the National Park Service are located within San Bernardino County, including the Mojave National Preserve and parts of Joshua Tree National Park and Death Valley National Park. Joshua Tree National Park, which is also partially located in Riverside County, is the closest, at approximately 75 miles east of the Project (County of San Bernardino, 2007).

Federal lands in San Bernardino County managed by the U.S. Forest Service, including the Angeles and San Bernardino National Forests, are approximately 15 miles north of the Project and offer a variety of recreational activities to residents (County of San Bernardino, 2007).

4.16.1.2 State Parks

The California State Parks and Recreation Department helps to preserve the state's biological diversity, protect its natural and cultural resources, and create opportunities for outdoor recreation. The Department manages several public parks within Riverside County, including the Chino Hills State Recreation Area (SRA) (partially located in Riverside County), the Anza-Borrego Desert State Park, California Citrus State Historic Park, Indio Hills Palms, Lake Perris SRA, Mount San Jacinto State Park, Salton Sea SRA, and San Timoteo Canyon State Park (California Department of Parks and Recreation, 2016).

TABLE 4.16-1
PARKS WITHIN 1 MILE OF THE PROPOSED PROJECT ALIGNMENTS

Recreational Facility	Managing Agency	Distance From Proposed Alignment
Forest Park 8706 Bridle Path Street	City of Chino	0.26 mile northwest of Mira Loma-Jefferson line Pole 85
Hidden Hollow Park 15784 Canopy Avenue	City of Chino	Mira Loma-Jefferson line; 0.42 mile northwest of Pole 85
Mulberry Park 15737 Edgewood Street	City of Chino	Mira Loma-Jefferson line; 0.59 mile northwest of Pole 85
Evergreen Park 8200 Garden Gate Street	City of Chino	Mira Loma-Jefferson line; 0.86 mile northwest of Pole 85
Founders Park 8151 West Preserve Loop	City of Chino	Mira Loma-Jefferson line; 0.84 mile west of Pole 85
Auburndale Park 1045 Auburndale Street	City of Corona	Mira Loma-Jefferson line; 0.20 mile west of Pole 232
City Park 930 East 6th Street	City of Corona	Pedley Source Lines; 0.14 mile south of Pole 44
Civic Center 815 West 6th Street	City of Corona	Mira Loma-Jefferson line; 0.53 mile southwest of Pole 260
Contreras Park Buena Vista and Railroad	City of Corona	Mira Loma-Jefferson line; 0.23 mile northwest of Pole 260
Corona City Hall 400 South Vicentia Street	City of Corona	Mira Loma-Jefferson line; 0.43 mile southwest of Pole 260
Fairview Park 1604 Fairview Drive	City of Corona	Mira Loma-Jefferson line; 0.16 mile west of Pole 215
Husted Park 1200 Merrill Street	City of Corona	Pedley Source Lines; 0.98 mile southwest of Pole 36
Joy Park Joy Street and East Grand Boulevard	City of Corona	Pedley Source Lines; 0.54 mile southwest of Pole 37
Merrill Park 10th Street and West Grand Boulevard	City of Corona	Pedley Source Lines; 0.90 mile southwest of Pole 37
River Road Park 1100 West River Road	City of Corona	Pedley Source Lines; 0.04 mile west of Pole 236
Senior Center 921 South Belle Avenue	City of Corona	Pedley Source Lines; 0.74 mile southwest of Pole 37
Sheridan Park 300 South Sheridan Street	City of Corona	Pedley Source Lines; 0.67 mile west of Pole 37
Victoria Park 312 9th Street	City of Corona	Pedley Source Lines; 0.50 mile southwest of Pole 37
American Heroes Park 6608 Hellman Avenue, Eastvale	Jurupa Community Services District	0.4 mile of Mira Loma-Jefferson alignment located within park (Poles 76-85)
Cedar Creek Park 6709 Cedar Creek Road, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.7 mile southeast of Pole 55
Dairyland Park 14520 San Remo Drive, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.10 mile northeast of Pole 157
Deer Creek Park 6785 Iron Horse Lane, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.30 mile south of Pole 70
Eastvale Community Center 13820 Schleisman Road, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.80 mile southeast of Pole 60
Half Moon Park 14383 Cherry Creek Circle, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.57 mile northeast of Pole 157
James C. Huber Park 6411 Rolling Meadows Road, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; Adjacent to Poles 55 - 60
Mountain View Park 14444 Selby Avenue, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.7 mile east of Pole 110

TABLE 4.16-1 (CONTINUED)
PARKS WITHIN 1 MILE OF THE PROPOSED PROJECT ALIGNMENTS

Recreational Facility	Managing Agency	Distance From Proposed Alignment
Orchard Park 5900 Festival Way, Eastvale	Jurupa Community Services District	Mira Loma-Jefferson line; 0.43 mile east of Pole 42
Kips Korner Park Kips Korner Drive and Del Mar Street	City of Norco	Mira Loma-Jefferson line; 0.28 mile east of Pole 205
Sundance Park 4047 Sundance Lane	City of Norco	Mira Loma-Jefferson line; 0.32 mile east of Pole 185
Ted Brooks Park Bluff Street and Vine Street	City of Norco	Mira Loma-Jefferson line; 0.49 mile east of Pole 178
Pacer Park Pacer Drive and Morgan Drive	City of Norco	Mira Loma-Jefferson line; 0.79 mile east of Pole 186
Celebration Park 2940 East Merrill Avenue	City of Ontario	Mira Loma-Jefferson line; 0.33 mile west of Pole 39

SOURCES: City of Chino, 2010; City of Corona Department of Parks and Community Services, 2016; JCSD, 2016; JARPD, 2016; City of Ontario, 2016a

The Department manages several public parks within San Bernardino County, including the Silverwood Lake SRA, the Providence Mountain SRA, the Chino Hills SRA, and Wildwood Canyon. The Chino Hills SRA is located approximately 7 miles west of the Project (County of San Bernardino, 2007).

4.16.1.3 Regional Parks

Riverside County Regional Park and Open-Space District offers an array of camping facilities to meet a variety of recreational needs, providing amenities such as recreational vehicle (RV), tent, and equestrian campgrounds, fishing, picnic areas, amphitheaters, multi-purpose paths, playgrounds, and more (Riverside County Regional Park and Open-Space District, 2016a). Regional parks in Riverside County include Bogart Park, Hurkey Creek Park, Idyllwild Park, Lake Cahuilla Recreation Area, Lake Skinner Recreation Area, Mayflower Park, McCall Memorial Equestrian Campground, and Rancho Jurupa Park (Riverside County Regional Park and Open-Space District, 2016b). Riverside County Regional Park and Open-Space District offers over 140 miles of trails for hiking from the Hidden Valley Wildlife Area near Corona to Mayflower Park on the Colorado River. Over six sites offer trails through Riverside County (Riverside County Regional Park and Open-Space District, 2016c).

The San Bernardino County Regional Parks Department manages and maintains nine regional parks throughout San Bernardino County totaling approximately 9,200 acres in diverse settings, including metropolitan areas, mountains, and deserts. Recreational opportunities found at these regional parks include lakes for fishing, sheltered group picnic facilities, RV and tent camping, and swim complexes with water slides, water play parks, and playgrounds. The closest regional parks are in Ontario and in Chino. The Cucamonga-Guasti Regional Park is 5 miles north of the Project and the Prado Regional Park is located 2 miles west of the Project (County of San Bernardino Regional Parks Department, 2016a).

The Santa Ana River Trail runs from the San Bernardino County National Forest to the Pacific Ocean at Huntington Beach where the trail ends. The San Bernardino County Regional Parks Department is the primary developer of recreational trails in San Bernardino County along the Santa Ana River Corridor and administrates trail operations and maintenance (County of San Bernardino Regional Parks Department, 2016b). However, the trail was developed through the cooperative efforts of several park districts, counties, cities, nonprofit organizations, and citizens, and operations and maintenance of the trail is undertaken by a combination of city and county park departments. The trail accommodates pedestrians, bicyclists, equestrian riders, and hikers and travels through the Hidden Valley Wildlife Area in Riverside County (Riverside County Regional Park and Open-Space District, 2016d).

4.16.1.4 City Recreation Departments

City of Chino

Chino has approximately 228 acres of parks, including mini parks greater than 0.5 acre. In addition to facilities formally recognized as parks, some school playgrounds and ballfields are available through permit outside of school hours. There are also trails and corridors that contribute to open space in Chino. Equestrian, cycling, and multi-use trails are provided. In addition, there are open space areas along portions of Chino Creek, Cucamonga/Mill Creek, Cypress Channel, and Magnolia Channel (City of Chino, 2010).

City of Corona

The City of Corona Department of Parks and Community Services maintains approximately 317 acres of public parks and 68 acres of undeveloped parklands, which include the lands contained within the Corona Municipal Airport, for a total of 415 acres. Corona's parklands include a variety of park types and uses. Parks range in size from mini-parks such as Contreras Park (0.3 acre) to the 64-acre Butterfield Park and include mini parks, neighborhood parks, community parks, and major parks. In addition to these park types, school recreation facilities are often open to the public during non-school hours. Other recreational resources within the City include three community centers, several multipurpose recreation centers, a senior center, several tennis courts, two skate parks, a gymnasium facility, and an auditorium within the City Hall Civic Center. Heritage Park is a 4.5-acre special use park that contains gardens, a museum, a visitor center, and an art center showcasing Corona's agricultural history. The City established a goal of 4 acres of parkland per one thousand residents. The current stock of 415 acres equals a parkland ratio of 3.1 acres per one thousand residents, or approximately 54 acres less than that required to fulfill the 3.5 acres/thousand residents goal (City of Corona, 2004).

City of Eastvale

Eastvale is home to numerous public parks, which are operated by the Jurupa Community Services District (JCSD) and the Jurupa Area Recreation and Park District (JARPD), two independent agencies. The JCSD provides public parks in the portion of Eastvale west of Hamner Avenue. The JARPD provides public parks in the portion of Eastvale east of Hamner Avenue and in the neighboring City of Jurupa Valley (City of Eastvale, 2012). The JCSD operates several facilities, including American Heroes Park on Hellman Avenue and James C. Huber Park on

Rolling Meadows Road (JCSD, 2016). The majority of facilities operated by the JARPD are in the City of Jurupa Valley, but Moon River Park, Delaware Greenbelt, Cambria Park, and Harmony Park are in Eastvale (JARPD, 2016).

City of Norco

The City of Norco Parks, Recreation, and Community Services Department operates 15 parks, all offering various recreational opportunities, from open space parks and play areas to picnic shelters and lighted sports fields. The City also operates Ingalls Park, a large equestrian complex that hosts rodeos, fairs, and horse shows, as well as a number of public riding arenas in parks throughout the City. The Community Center Complex is home to a wide range of recreational and sports programs, special events, and classes. The Center offers a variety of facilities, including the Riley Gymnasium, the Community Center ball field, the Norco Children's Center, Norco Community Center Pool, the Norco Youth Center/Scout House, and a number of meeting halls and classrooms (City of Norco, 2016a and 2016b).

City of Ontario

The City of Ontario Recreation and Community Services Department provides recreational, educational, and cultural activities to the community at community centers, parks, and schools throughout the City of Ontario, including 22 parks and 5 community centers providing a variety of recreational opportunities to its residents (City of Ontario, 2016a and 2016b).

4.16.1.5 Regulatory Setting

Federal

There are no federal policies or regulations pertaining to recreation that would be applicable to the Project.

State

There are no state policies or regulations pertaining to recreation that would be applicable to the Project.

Local

California Public Utilities Commission General Order No. 131-D explains that local land use regulations would not apply to the Project or alternatives. However, for informational purposes, the goals and policies of local general plans and other planning documents pertaining to recreation that would otherwise be relevant to the Project and alternatives are described below.

Riverside County General Plan

The following policies pertaining to recreation in the Riverside County General Plan (County of Riverside, 2014):

Policy OS 20.1: Preserve and maintain open space that protects County environmental resources and maximizes public health and safety in areas where significant environmental hazards and resources exist.

Policy OS 20.2: Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space-Conservation designated areas.

Policy OS 20.3: Discourage the absorption of dedicated park lands by non-recreational uses, public or private. Where absorption is unavoidable, replace park lands that are absorbed by other uses with similar or improved facilities and programs.

Policy OS 20.4: Provide for the needs of all people in the system of County recreation sites and facilities, regardless of their socioeconomic status, ethnicity, physical capabilities or age.

Policy OS 20.5: Require that development of recreation facilities occurs concurrent with other development in an area.

Policy 20.6: Require new development to provide implementation strategies for the funding of both active and passive parks and recreational sites.

San Bernardino County General Plan

The following policies pertain to recreation in the San Bernardino County General Plan. Due to the project's location in the San Bernardino Valley, goals and policies for the Valley Planning Region in the San Bernardino County General Plan are included as well (County of San Bernardino, 2007):

Policy OS 1.4: Support the establishment of "urban open space areas" within urban areas, and seek to develop or retain these areas through cooperation with local cities. Where possible, these areas will be located along or near regional trail routes.

Policy OS 1.5: Strive to achieve a standard of 14.5 acres of undeveloped lands and/or trails per 1,000 population and 2.5 acres of developed regional park land per 1,000 populations. "Undeveloped lands" may include areas established to buffer regional parks from encroachment by incompatible uses.

Policy OS 1.9: Ensure that open space and recreation areas are both preserved and provided to contribute to the overall balance of land uses and quality of life.

Policy OS 2.4: Use lands already in public ownership or proposed for public acquisition, such as right-of-way for flood control channels, abandoned railroad lines, and fire control roads, for trails wherever possible, in preference to private property.

Policy OS 2.10: Require proposed development adjacent to trail systems to dedicate land for trailhead access points. Existing rights-of-way and surplus public properties should be utilized for these staging areas whenever possible.

City of Chino

The following policies within the Parks and Recreation Element of the City of Chino General Plan pertain to recreation (City of Chino, 2010).

Policy P1: The City shall achieve and maintain a standard of 3 acres of parks per 1,000 Chino residents. The following categories of parks shall be included in the park acreage totals:

formative, neighborhood, and community parks, mini parks that are over one-half acre in size and that contain sufficient amenities, and regional parks under the City's jurisdiction.

Policy P6: The City shall ensure that the development of parks and recreational facilities and services keeps pace with development and growth in Chino.

Policy P7: The City shall create pedestrian, bicycle and/or equestrian trail links between parks where possible, in order to increase the accessibility of parks to area residents.

City of Corona

The following policies within the Parks, Schools, and Libraries Element of the City of Corona General Plan pertain to recreation (City of Corona, 2004).

Policy 8.2.1: Establish and maintain a standard of 4 acres of parkland per 1,000 residents in the City. Specific standards are as follows: 2.0 acres/1,000 for community parks; 2.0 acres/1,000 for (a combination of) neighborhood, major, and special use parkland.

Policy 8.9.3: Require new development to provide mitigation measures on existing park facilities as a means of implementing Policy 1.9.2.

City of Eastvale

The following policies within the Parks, Recreation, and Open Space Element of the City of Eastvale General Plan pertain to recreation (City of Eastvale, 2012).

Policy OS-2: Require the provision of recreation facilities concurrent with the development they serve.

Policy OS-3: Require new development to provide implementation strategies for the funding of both active and passive parks and recreational sites.

City of Norco

No applicable goals or policies related to recreation are relevant to the Project or alternatives (City of Norco, 2003).

City of Ontario

The following policies within the Parks and Recreation Element of the City of Ontario General Plan regarding recreation may be applicable to activities taking place within Ontario (City of Ontario, 2009.

Policy PR1-5: Acreage *Standard.* We strive to provide 5 acres of parkland (public and private) per 1,000 residents.

Policy PR1-12: Trails. We promote connections between parks and local trails including those managed by other public agencies.

Policy PR1-15: Trail Connectivity. We strengthen and improve equestrian, bike and multipurpose trail connections within the City and work to improve trail connections into adjacent jurisdictions.

4.16.2 Significance Criteria

According to Appendix G of the CEQA *Guidelines*, a project would result in significant recreation effects on the environment if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.16.3 Applicant Proposed Measures

No applicant proposed measures have been identified by SCE to reduce Project impacts on recreational facilities.

4.16.4 Impacts and Mitigation Measures

4.16.4.1 Approach to Analysis

The Project's impacts to recreation have been evaluated against the significance criteria, considering current recreational service information.

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Impact 4.16-1: Construction and operation of the Project would increase the use of existing parks and recreational facilities. *Less than significant* (Class III)

In general, a project would increase the use of area parks and other recreational facilities by increasing demand, through population growth, and/or by displacing use from one facility to another. In general, effects would include construction equipment blocking access to parks and trails for activities including pole removal, foundation and pole installation, and conductor stringing within the Project alignment.

Construction

As discussed in Section 4.14, *Population and Housing*, approximately 100 construction workers would be required to construct the Project at its peak, and these workers are expected to commute from within Riverside and San Bernardino counties rather than relocate to the Project area.

Construction of the proposed Circle City Substation site would have no effect on recreational facilities as there are no parks or other recreational facilities in the vicinity of the site that could be affected by the Project. However, the proposed Mira Loma-Jefferson subtransmission line would cross approximately 0.4 mile of American Heroes Park and would run adjacent to James C. Huber Park for approximately 0.25 mile in the City of Eastvale. Partial closure of the southwestern corner of American Heroes Park would be required during conductor-stringing activities. Two conductor pull sites would be located in this area. This closure would be

temporary, lasting for less than 1 week, and would not result in substantial physical deterioration of the facility. Other portions of the park would not be affected, with the exception of at the pole removal/installation sites along the southern perimeter of the park. Construction activities would not require closure of any portions of James C. Huber Park; however, construction-related disturbances could temporarily make the northern area of the park less desirable to recreational users.

During the use of the pull sites at American Heroes Park, vehicle access to the park along Hellman Avenue would be obstructed as the northbound merge lane from Prairie Smoke Road to the park's entrance would be closed to operate pulling equipment. The left lane would remain open and continue to provide access to the park (SCE, 2015). More information on anticipated street closures is provided in Section 4.17*, Transportation and Traffic.*

The potential increased use of alternative recreational facilities due to the potential displacement of users at American Heroes Park and James C. Huber Park would not be substantial as the displacement period would be brief and so would not cause or accelerate any substantial physical deterioration of such alternative facilities.

Operation

Increases in demand for recreational facilities typically are associated with substantial increases in population. The Project would not include a residential component, nor would it induce population growth in the electrical needs area that would result in an increased use of existing recreational facilities. No new permanent staff would be needed.

Operation and maintenance of the Project would be similar to operation and maintenance of existing facilities in SCE's ROW. Project operation and maintenance would not result in a measurable change in the existing level of use at neighborhood and regional parks or other recreational facilities, and so would not cause or accelerate any substantial physical deterioration of those facilities. There would be no operational impact.

Mitigation: None required.

---

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (No Impact)

The Project would not include recreational facilities, nor would it require the construction or expansion of recreational facilities. As described under criterion a), the Project would not induce population growth. Therefore, the Project would not result in any adverse physical effects on the environment from construction or expansion of additional recreational facilities.

4.16.5 Alternatives

4.16.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new subtransmission facilities would be constructed, and existing subtransmission facilities would not be altered, replaced, or installed. Implementation of this alternative would have no effect on recreation (No Impact).

4.16.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

The northern portion of the Alternative B underground alignment along Hellman Avenue is adjacent to American Heroes Park. Similar to the proposed overhead construction along this segment, activities at the pull sites could restrict vehicle access in the vicinity of the park along Hellman Avenue as the northbound merge lane from Prairie Smoke Road to the park's entrance would be closed to operate pulling equipment, but the left lane would remain open and continue to provide access to the park, resulting in a less-than-significant impact (Impact 4.16-1l; Class III). As under the Project, Alternative B would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

The northern portion of the Alternative C1 underground alignment along Hellman Avenue is adjacent to American Heroes Park. Similar to the proposed overhead construction along this segment, activities at the pull sites could restrict vehicle access in the vicinity of the park along Hellman Avenue as the northbound merge lane from Prairie Smoke Road to the park's entrance would be closed to operate pulling equipment, but the left lane would remain open and continue to provide access to the park, resulting in a less-than-significant impact (Impact 4.16-1; Class III). As under the Project, Alternative C1 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Alternative C2 would avoid the less-than-significant construction-related impacts at the City of Eastvale's American Heroes Park because its alignment would not cross the park. However, the subtransmission line would be installed adjacent to James C. Huber Park in Eastvale for an additional approximately 0.1 mile compared to the proposed Mira Loma-Jefferson subtransmission line, and would cross Sundance Park for approximately 0.08 mile and Ted Brooks Park for

approximately 0.04 mile in the City of Norco. Sundance Park is approximately 1 acre and features a gazebo, basketball court, and playground. Ted Brooks Park is approximately 1.4 acres and contains a small arena and grassy area that is primarily used for barrel-racing practice. Implementation of Alternative C2 would require temporary closure of both parks during construction due to their relatively small size. Therefore, impacts to recreation resulting from this alternative would be similar to that of the proposed Mira Loma-Jefferson subtransmission line, and would be less than significant (Impact 4.16-1; Class III). As under the proposed Project, Alternative C2 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, there would be no associated impact (No Impact).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

~~The Alternative C3 battery storage and substation sites and 66 kV subtransmission line alignments are not in the immediate vicinity of parks or other recreational facilities. Therefore, Alternative C3 would have no effect on existing recreational facilities. Alternative C3 would avoid the less-than-significant construction-related impacts at the City of Eastvale's American Heroes Park because the Mira Loma-Jefferson 66 kV subtransmission line would not be constructed under this alternative.~~ Similar to the temporary construction-related impacts to American Heroes Park that would occur associated with the proposed Mira Loma-Jefferson subtransmission line (see *Construction* discussion for the Project in Impact 4.16-1), the Alternative C3 telecommunication alignments for the 42 MW and 40 MW facilities would be located adjacent to Lincoln Park along S. Lincoln Avenue, and City Park along Quarry Street, respectively, which may result in temporary lane closures and park access restrictions, which would be a less-than-significant impact (Impact 4.16-1; Class III). As under the Project, Alternative C3 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact).

Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

As under the proposed Project, Alternative D1 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact). The less-than-significant impact associated with the Mira Loma-Jefferson subtransmission line would remain under this alternative (Impact 4.16-1; Class III).

Alternative D2: 66/12 kV Substation Site Alternative

As under the proposed Project, Alternative D2 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact). The less-than-significant impact associated with the Mira Loma-Jefferson subtransmission line would remain under this alternative (Impact 4.16-1; Class III).

Alternative E1: Quarry Street 66 kV Source Line Segment

Similar to the temporary construction-related impacts to American Heroes Park that would occur associated with the proposed Mira Loma-Jefferson subtransmission line, the Alternative E1 alignment would be located adjacent to City Park along Quarry Street in the City of Corona, which may result in temporary lane closures and park access restrictions along Quarry Street during construction, which would be a less-than-significant impact (Impact 4.16-1; Class III). However, additional access to the park is provided along East Grand Boulevard and East 6th Street and no park closures would be required. As under the Project, Alternative E1 would not include recreational facilities or require the construction or expansion of such facilities that would result in adverse physical effects on the environment; therefore, no associated impact would occur (No Impact).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

The Alternative E2 alignment is not in the immediate vicinity of parks or other recreational facilities. Same as the proposed alignment it would replace, Alternative E2 would have no effect on existing recreational facilities. As under the Project, Alternative E2 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact). The less-than-significant impact associated with the Mira Loma-Jefferson subtransmission line would remain under this alternative (Impact 4.16-1; Class III).

Alternative E3: Southern 66 kV Source Lines Alignment

The Alternative E3 alignment is not in the immediate vicinity of parks or other recreational facilities. Same as the proposed Databank Source Lines alignment it would replace, Alternative E3 would have no effect on existing recreational facilities. As under the Project, Alternative E3 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment; therefore, no impact would occur (No Impact). The less-than-significant impact associated with the Mira Loma-Jefferson subtransmission line would remain under this alternative (Impact 4.16-1; Class III).

Alternative E4: Databank 66 kV Source Lines Only

The Alternative E4 alignment is not in the immediate vicinity of parks or other recreational facilities. Alternative E4 would have no effect on existing recreational facilities. As under the Project, Alternative E4 would not include recreational facilities or require the construction or expansion of such facilities that could result in adverse physical effects on the environment;

therefore, no impact would occur (No Impact). The less-than-significant impact associated with the Mira Loma-Jefferson subtransmission line would remain under this alternative (Impact 4.16-1; Class III).

References – Recreation

Bureau of Land Management (BLM), 2016. GeoCommunicator BLM Site Mapper. Available at http://www.geocommunicator.gov/blmMap/Map.jsp?MAP=SiteMapper. Accessed on April 20, 2016.

California Department of Parks and Recreation, 2016. California State Parks in Riverside County. Available at http://www.parks.ca.gov/pages/24317/files/deserts200804.pdf. Accessed on May 15, 2016.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on May 24, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on May 24, 2016.

City of Corona Department of Parks and Community Services, 2016. City of Corona Parks and Facilities. Available at http://www.discovercorona.com/CityOfCorona/media/Media/Parks/Documents/Parks-and-Facilities-Map-(2).pdf. accessed on May 17, 2016.

City of Eastvale, 2012. City of Eastvale General Plan. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on May 24, 2016.

City of Norco, 2003. City of Norco General Plan. Accessed on June 20, 2016.

City of Norco, 2016a. Parks and Facilities. Available at http://www.norco.ca.us/depts/parks/facilities/%5Cdefault.asp. Accessed on May 17, 2016.

City of Norco, 2016b. Park and Facility Map. Available at http://www.norco.ca.us/civicax/filebank/blobdload.aspx?BlobID=2899. Accessed on May 18, 2016.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on May 24, 2016.

City of Ontario, 2016a. Parks and Facilities. Available at http://www.ontarioca.gov/recreation/parks-and-facilities. Accessed on April 22, 2016.

City of Ontario, 2016b. Recreation. Available at http://www.ontarioca.gov/recreation. Accessed on April 22, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on May 24, 2016.

County of San Bernardino, 2007. County of San Bernardino General Plan. Available online at: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed on May 24, 2016.

County of San Bernardino Regional Parks Department, 2016a. About Us. Available at http://cms.sbcounty.gov/parks/aboutus.aspx. Accessed on May 16, 2016.

County of San Bernardino Regional Parks Department, 2016b. Santa Ana River Trail. Available at http://cms.sbcounty.gov/parks/Parks/SantaAnaRiverTrailandParkway.aspx. Accessed on May 17, 2016.

Jurupa Area Recreation and Park District (JARPD), 2016. Facilities and Parks. Available at http://www.jarpd.org/district-map/. Accessed on May 17, 2016.

Jurupa Community Services District (JCSD), 2016. Parks and Recreation Facilities. Available at http://www.jcsd.us/services/parks-and-recreation/parks-and-recreation-facilities. Accessed on May 17, 2016.

Riverside County Regional Park and Open-Space District, 2016a. About Us. Available at http://www.rivcoparks.org/about-us/about-us/. Accessed on May 17, 2016.

Riverside County Regional Park and Open-Space District, 2016b. Campgrounds. Available at http://www.rivcoparks.org/parks/campgrounds/. Accessed on May 17, 2016.

Riverside County Regional Park and Open-Space District, 2016c. About Adopt-A-Trail. Available at http://www.rivcoparks.org/about-us/trails-committee/about-adopt-a-trail/adopt-a-trail-program/. Accessed on May 17, 2016.

Riverside County Regional Park and Open-Space District, 2016d. Santa Ana River Trail. Available at http://www.rivcoparks.org/trails/santa-ana-river-trail/. Accessed on May 17, 2016.

United States Department of Agriculture (USDA), 2016a. Cleveland National Forest. Available at http://www.fs.usda.gov/cleveland. Accessed on May 16, 2016.

USDA, 2016b. Santa Rosa and San Jacinto Mountains National Monument Visitor Center. Available at http://www.fs.usda.gov/cleveland. Accessed on May 16, 2016.

4.17 Transportation and Traffic

This section presents the environmental setting and impact analysis for transportation facilities associated with the proposed Project and alternatives. The purpose of this section is to assess the impacts of the Project and alternatives on traffic operations and other transportation modes in the surrounding area during construction, operation, and maintenance activities.

4.17.1 Setting

Streets and highways serve as the dominant system of transportation in Riverside and San Bernardino counties, and in the cities and communities within the counties. Other transportation systems in the counties include mass transit, bicycle routes, rail service, and air transportation. The discussions in the following sections are focused on geographical areas near components of the Project and alternatives as well as areas through which Project- or alternative-related vehicles would travel. The Project would cross a network of state, county, city, and private roadways. **Table 4.17-1** summarizes the characteristics of the relevant regional and local roadways in the Project area.

4.17.1.1 Regional Roadways

Riverside County is linked to Los Angeles and Orange counties primarily by State Route 60 (SR 60), Interstate 10 (I-10), SR 91, and SR ~~74~~ 71. Links to San Bernardino County are provided by Interstate 15 (I-15) and Interstate 215 (I-215), as well as by other major and minor local roadways. I-10 also provides access to Arizona, and I-15 and I-215 provide access to Nevada and San Diego County.

4.17.1.2 Local Roadways

The Project would span over or trench within (across or along) approximately 46 roads. The local roadways that may be used to access the study area are generally two- to four-lane roads providing access to local and regional areas. Some of the roads would be affected during line stringing activities over the roads, while others would be used for access throughout the construction phase of the Project. The Project sites would primarily be accessed by use of public roadways and private unpaved and paved access roads.

The Project would utilize up to seven staging area locations, each of which would be accessible by roads listed in Table 4.17-1. Potential staging areas include portions of the existing Mira Loma Substation and proposed Circle City Substation sites and vacant fields located off Hamner Avenue, and Hellman Avenue. For example, one potential staging area is located at the SCE Ontario Service Center, which would be accessed via South Grove Avenue, and South Parco Avenue. Another potential staging area is located at Jefferson Substation, which would be accessed via Rimpau Avenue, Magnolia Avenue, Ontario Avenue, and Lincoln Avenue. The proposed staging yard options are depicted in Figure 2-9, Potential Staging Yard Locations in Chapter 2, *Project Description*.

TABLE 4.17-1
SUMMARY OF STUDY AREA ROADWAY CHARACTERISTICS

Roadway	Jurisdiction	Classification	No. of Lanes	Existing Average Daily Traffic Volume	Daily LOS[b]	Peak-Hour Traffic Volume	Physical Relationship to Project
Interstate 15	Caltrans	Interstate	8	148,000-187,000	LOS D – LOS F	10,300-13,500	Access Road / Spanned[a]
State Route 60	Caltrans	Freeway	12	140,000-224,000	LOS B – LOS D	10,300-15,200	Access Road
State Route 71	Caltrans	Expressway	4	70,000-101,000	LOS E – LOS F	6,000-8,800	Access Road
State Route 83 / Euclid Avenue	Caltrans	Expressway	4	33,200-43,800	LOS B – LOS C	2,750-3,850	Access Road
State Route 91	Caltrans	Freeway	8	219,000-256,000	LOS F	15,200-16,500	Access Road
Harrison Avenue	Eastvale	Secondary Arterial	4	5,200	LOS C	n/a	Access Road
Railroad Street	Corona	Collector	4	11,300	LOS C	n/a	Access Road / Underground Longitudinal Encroachment
Sheridan Street	Corona	Secondary Arterial	2	4,600	LOS C	n/a	Access Road / Underground Longitudinal Encroachment
Main Street	Corona	Major Arterial	6	30,900-32,900	LOS C	n/a	Access Road
East Blaine Street	Corona	Secondary Arterial	2	2,700	LOS C	n/a	Access Road / Underground Longitudinal Encroachment
Joy Street	Corona	Secondary Arterial	4	5,100	LOS C	n/a	Access Road
Grand Boulevard	Corona	Collector	4	14,500	LOS C	n/a	Access Road / Underground Longitudinal Encroachment
3rd Street	Norco/Corona	Collector	4	n/a	n/a	n/a	Access Road
6th Street	Corona	Major Arterial	4 to 6	19,900-27,800	LOS C	n/a	Access Road / Spanned
Magnolia Avenue	Corona	Major Arterial	5	19,300-41,100	LOS C – LOS F	n/a	Access Road / Underground Longitudinal Encroachment
Leeson Lane	Corona	Local	2	n/a	n/a	n/a	Access Road / Underground Longitudinal Encroachment
North Cota Street	Corona	Secondary Arterial	2	6,200	LOS C	n/a	Access Road / Underground Longitudinal Encroachment
River Road	Corona	Major Arterial	4	4,100	LOS C	n/a	Access Road / Spanned / Underground Longitudinal Encroachment
Baron Drive	Eastvale	Secondary Arterial	2	n/a	n/a	n/a	Access Road
Hellman Avenue	Chino/Eastvale	Secondary Arterial	4	n/a	n/a	n/a	Spanned/Access Road (Staging Area)
Archibald Avenue	Ontario/Eastvale	Urban Arterial	2 to 6	15,300	LOS C	n/a	Spanned

TABLE 4.17-1 (CONTINUED)
SUMMARY OF STUDY AREA ROADWAY CHARACTERISTICS

Roadway	Jurisdiction	Classification	No. of Lanes	Existing Average Daily Traffic Volume	Daily LOS	Peak-Hour Traffic Volume	Physical Relationship to Project
Limonite Avenue	Eastvale	Urban Arterial	4	41,400	LOS F	n/a	Access Road / Spanned
Ontario Avenue	Corona	Major Arterial	4 to 6	13,800	LOS C	n/a	Access Road (Staging Area)
South Promenade Avenue	Corona	Secondary Arterial	4	11,500	LOS C	n/a	Access Road
Mountain Avenue	Norco	Secondary Arterial	4	n/a	n/a	n/a	Access Road
Norco Drive	Norco	Secondary Arterial	4	n/a	n/a	n/a	Access Road
Chandler Street	Eastvale	Arterial	4	5,000	LOS C	n/a	Access Road
Schleisman Road	Eastvale	Urban Arterial	6	15,300	LOS C	n/a	Access Road
Milliken Avenue	Eastvale	Urban Arterial	4	15,600	LOS C	n/a	Access Road
Hamner Avenue	Eastvale	Urban Arterial	4	14,500	LOS C	n/a	Access Road (Staging Area)
Cantu-Galleano Ranch Road	Eastvale	Urban Arterial	5	4,400	LOS C	n/a	Access Road
East Riverside Drive	Ontario	Minor Arterial	4	n/a	n/a	n/a	Access Road
South Grove Avenue	Ontario	Urban Arterial	7	n/a	n/a	n/a	Access Road (Staging Area)
South Parco Avenue	Ontario	Local	4	n/a	n/a	n/a	Access Road (Staging Area)
Edison Avenue	Chino	Major Arterial	4	n/a	n/a	n/a	Spanned
Pine Avenue	Ontario	Urban Arterial	2	n/a	n/a	n/a	Spanned
Chino Corona Road	Corona	Urban Arterial	2	n/a	n/a	n/a	Spanned
Corydon Street/Corydon Avenue	Corona/Norco	Secondary Arterial	2	10,300	LOS D	n/a	Spanned
Haven Avenue	Ontario	Local	2	n/a	n/a	n/a	Spanned
2nd Street	Norco	Secondary Arterial	2	n/a	n/a	n/a	Spanned
Auburndale Street	Corona	Collector	2	2,000	LOS C	n/a	Spanned
Lincoln Avenue	Chino	Secondary Arterial	4	n/a	n/a	n/a	Spanned / Access Road (Staging Area)
Bateman Circle	Corona	Local	2	n/a	n/a	n/a	Crossed
West Rincon Street	Corona	Collector	4	2,500	LOS C	n/a	Crossed
Rimpau Avenue	Corona	Collector	4	13,700	LOS C	n/a	Crossed / Access Road (Staging Area)

[a] I-15 would be spanned by the proposed Pedley Source Lines and the Databank Source Lines would cross over I-15 within an existing empty duct bank in the Magnolia Street I-15 Bridge. The proposed Pedley Source Lines would cross under the I-91 bridge underground within Grand Boulevard.

b According to Florida Department of Transportation guidance, daily values that exceed the LOS D threshold are considered LOS F because intersection capacities have been reached. Where LOS C is shown for arterial and collector roadways, LOS may actually be better (i.e., LOS A or LOS B).

SOURCES: Caltrans, 2017; Riverside County, 2014; City of Corona, 2017; Florida Department of Transportation, 2012.

Bicycle Routes

Bikeways are found throughout the counties of Riverside and San Bernardino, including the cities of Corona, Eastvale, Norco, Chino, and Ontario. Bicycle facilities take different forms: bike paths are paved trails that are separated from the roadways (Class 1); bike lanes are separate lanes on roadways designated for use by bicycles by striping, pavement legends, and signs (Class 2); and bike routes are on roadways designated for bicycle use, but without a separate lane like for Class 2 bicycle lanes (Class 3). The Project would span (cross overhead) the following roads that have bike lanes: Archibald Avenue, Auburndale Street, Chino Corona Road, Corydon Street/ Corydon Avenue, Edison Avenue, Haven Avenue, Hellman Avenue, and Lincoln Avenue. The Project would be located within (open trenching) portions of Magnolia Avenue that has bike lanes. No component of the Project or alternatives would cross a bikeway.

Rail Service

Amtrak currently serves Riverside County in two locations—the cities of Palm Springs and Riverside. Amtrak's Southwest Chief Service stops at the Downtown Riverside Metrolink Station and provides connections to Los Angeles and cities to the east, including Flagstaff, Albuquerque, St. Louis, and Chicago. The Project would not span any Amtrak routes.

Three Metrolink commuter rail lines serve western Riverside County and provide connections to destinations in Los Angeles, Orange, San Bernardino, and Ventura counties. There are currently five commuter rail stations serving Riverside County—two are in the City of Riverside, one is in the community of Pedley, and two are in the City of Corona. Metrolink is operated by the Southern California Railroad Authority and also provides passenger rail service for San Bernardino County. Metrolink connects San Bernardino Valley communities with the rest of Southern California and to the rest of the United States through Amtrak's services. Metrolink also connects with MetroRail in Los Angeles County.

The North Main Corona Metrolink Station is located immediately adjacent to the Project area at the intersection of North Main Street and East Blaine Street. The Mira Loma-Jefferson 66 kV line would be installed via horizontal boring, creating an underground crossing of the Metrolink tracks that cross Cota Avenue and Magnolia Avenue in the City of Corona. The Project would also span the Metrolink tracks that cross Joy Street in the City of Corona.

Mass Transit – Bus Service

Public transportation in the Project area is provided by Riverside Transit Agency (RTA). Currently, RTA operates 40 fixed bus routes within a 2,500-square-mile area of western Riverside County. RTA coordinates with OmniTrans in San Bernardino County to provide bus service between downtown Riverside and downtown San Bernardino, which also connects with OmniTrans bus service to the City of Ontario. In addition, RTA coordinates with Orange County Transit Agency in Orange County and provides connections to select Metrolink stations.

Specialized public transportation services are available in the City of Corona. Greyhound Bus Lines provides private transportation services that link Riverside and San Bernardino counties with other regions, which includes east-west service connecting the cities of Blythe, Indio, Palm

Springs, Banning/Beaumont, and Riverside (via San Bernardino). The service continues westward to downtown Los Angeles with intermediate stops. North-south service connects the City of Riverside with the City of Temecula, continuing southward to the City of San Diego. The Corona Cruiser, the City of Corona's fixed-route bus system, travels throughout the city. Corona Cruiser bus routes also connect with RTA regional bus routes and the North Main Street Corona Metrolink station.

Project work sites would be along the following bus routes:

- Magnolia Avenue (on which a Corona Cruiser/RTA bus route operates),
- East 6th Street (on which an RTA bus route operates), and
- River Road (on which a Corona Cruiser bus route operates).

Air Transportation

Riverside County contains 12 public-use airports, one military airport (March Air Reserve Base), and six airports owned by cities or private entities. San Bernardino County contains 44 public- and private-use airports, six of which are managed by San Bernardino County. The nearest public airports to the Project are Chino Airport, located approximately 0.7 mile to the northwest of the Mira Loma-Jefferson alignment, and Corona Municipal Airport, located approximately 1.1 miles to the southwest of the Mira Loma-Jefferson alignment. In addition, Ontario International Airport is located approximately 3 miles north-northwest of the Mira Loma Substation. The nearest private-use airport is Lake Mathews Airport, with one 3,300-foot-long runway, located approximately 6.3 miles southeast of the proposed Circle City Substation site.

Emergency Evacuation Routes

Section 4.9, *Hazards and Hazardous Materials,* provides a description of the emergency evacuation routes and plans in Riverside and San Bernardino counties. The major freeways and expressways in the Project area (e.g., I-10, I-15, SR 91, SR 60, SR 71, and SR 83) could all be utilized in the event of an emergency evacuation.

4.17.1.3 Regulatory Setting

Federal

Hazardous Materials Transportation Act of 1974 (49 U.S.C. § 1801 et seq.)

This act directs the United States Department of Transportation (USDOT) to establish criteria and regulations regarding safe storage and transportation of hazardous materials. The Hazardous Materials Regulations promulgated by USDOT (49 CFR §171.1 et seq.) address transportation of hazardous materials, types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials. Additionally, the Motor Carrier Safety Regulations (49 CFR §390.1 et seq.) specify safety considerations for the transport of hazardous materials over public roadways.

Federal Aviation Administration Regulations (14 CFR 77.9)

Federal Aviation Administration (FAA) regulation 14 CFR 77.9, *Construction or alteration requiring notice*, states in part: "If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA…". The Section contains a list of the types of construction or alterations of existing structures for which a notice must be filed with the FAA. The Section also lists notice exemptions, including exemptions applicable to, among other things, certain objects that would be shielded by existing structures.

State

The California Vehicle Code contains statutes pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. California Department of Transportation (Caltrans) is the administering agency that implements these vehicle-related laws through additional regulations and licensing activities. Caltrans manages the state's highway and freeway system, provides inter-city rail services, permits public-use airports and special-use hospital heliports, and works with local agencies to improve mobility.

An encroachment permit must be obtained from a local Caltrans District 8 Office for all proposed activities for placement of encroachments within, under, or over the state highway ROWs. Some examples of work requiring an encroachment permit are overhead power line crossings, excavations, and driveway installations. Only Caltrans has authority to approve and issue permits for activities on Caltrans' ROW. Authority for Caltrans to control encroachments within the state highway ROWs is contained in the Streets and Highways Code Section 660 et seq.

Any work within the existing right of way within Caltrans' jurisdiction would comply with Caltrans permitting requirements. This includes a traffic control plan that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (MUTCD) (Caltrans, 2014). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers.

Local

Per California Public Utilities Commission (CPUC)-adopted General Order (GO) 131-D, local jurisdictions are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to CPUC's jurisdiction, but in locating such projects, the public utilities shall consult with local agencies regarding land use matters. As such, the following local policies are included for informational purposes only.

Riverside County Airport Land Use Commission Airport Land Use Compatibility Plans

The Riverside County Airport Land Use Commission develops land use compatibility plans for airports within Riverside County. The land use plans are intended to promote the safety and welfare of residents in the airport vicinity and users of the airport. Specifically, the plans address

protecting the public from aircraft noise and accidents, and also seek to ensure that no structures or activities encroach upon or adversely affect the use of navigable airspace. The boundaries of the airport that influence areas contained in the compatibility plans may be reduced or extended from the conical surfaces specified in Federal Aviation Regulation Part 77 to more accurately reflect the specific flight paths for each airport.

The Project area is located within the Airport Land Use Compatibility Plan boundaries for the Chino Airport and Corona Municipal Airport. Land use zones crossed by the Project for both Chino Airport and Corona Municipal Airport are listed in Table 4.9-3: Airport Safety Zones Crossed by the Project in Section 4.9, *Hazards and Hazardous Materials*.

City of Chino General Plan

The following City of Chino policy applies to operational transportation and traffic (Chino, 2010):

> *Policy P1:* The City shall achieve an average LOS D or better at intersections and along roadway segments while also prioritizing pedestrian safety near schools, parks, and other public destinations. This average shall be demonstrated to the satisfaction of the Director of Public Works.

For the purposes of construction, the City of Chino has concluded that such issues are addressed through "preparation and submittal of a construction area traffic management plan…" (City of Chino, 2015; and 2015).

Chino Airport Master Plan

The Chino Airport Master Plan identifies compatible uses for the area surrounding the airport as including light and heavy industrial development, some commercial development, and agricultural activities (Chino Airport, 2011). The Project would not be located in any of the safety areas, runway protection zones, approach, departure, or obstacle-free zones specified in the Chino Airport Master Plan.

City of Corona General Plan

City of Corona operational transportation policy is as follows (Corona, 2004):

> *Policy 6.1.6*: Maintain Level of Service D or better on arterial streets wherever possible. At some key locations, such as at heavily traveled freeway interchanges, LOS E may be adopted as the acceptable standard, on a case-by-case basis. Locations that may warrant the LOS E standard include Lincoln Avenue at SR 91, Main Street at SR 91, McKinley Avenue at SR 91, Hidden Valley Parkway at I-15, Cajalco Road at I-15 and Weirick Road at I-15. A higher standard such as LOS C or better may be adopted for local and collector streets in residential areas.

For the purposes of construction, the City of Corona has not applied the above operational LOS policy, instead electing to require implementation of a Construction Management Plan to ensure impacts are less than significant (City of Corona, 2015).

Corona Municipal Airport Comprehensive Land Use Plan

The Comprehensive Land Use Plan for the Corona Municipal Airport contains policies and goals to protect the general public from aircraft noise and accidents, and to ensure that no structures or activities encroach upon the use of navigable airspace associated with the airport. The Project would not be located in any of the safety zones specified in the Corona Municipal Airport Comprehensive Land Use Plan.

City of Eastvale General Plan

The following City of Eastvale policy applies to operational transportation and traffic (Eastvale, 2012):

> *Policy C-10*: Seek to maintain the following target levels of service: "C" along all City-maintained roads. A peak hour level of service of "D" may be allowed in commercial and employment areas, and at intersections of any combination of major highways, urban arterials, secondary highways, or freeway ramp intersections.

For the purposes of construction, the City of Eastvale has not applied the above operational LOS policy, instead electing to require implementation of a Construction Traffic Management Plan to ensure impacts are less than significant (City of Eastvale, 2016).

City of Norco General Plan

The City of Norco General Plan Circulation Element establishes LOS D as an operational target for roadway segments and intersections at peak hours under build-out conditions.

For the purposes of construction, the City of Norco does not appear to rely upon this operational target, instead this target appears designed for operational traffic ("Commuter Traffic") (City of Norco, 2000).

City of Ontario General Plan

The City of Ontario Policy Plan Mobility Element establishes LOS D as an operational target at all intersections (Ontario, 2009).

For the purposes of construction, the City of Ontario has not applied the above operational LOS policy (City of Ontario, 2006).

Congestion Management Programs

The County of Riverside has prepared a Congestion Management Program (CMP); however, such programs "are not related to construction or other activities along a segment or elsewhere." (County of Riverside, 2011; see also Gov. Code § 65089.4(f)(2).) The County of San Bernardino CMP only requires a Transportation Impact Assessment (TIA), when "a proposed change in land use, development project…are forecast to equal or exceed the CMP threshold of 250 two-way peak hour trips generated…" (County of San Bernardino, 2016). The proposed Project's construction activities are not considered a change in land use or a development project under the CMPs.

4.17.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant transportation and traffic effects on the environment if it would:

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

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

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks;

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e) Result in inadequate emergency access; or

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.17.3 Applicant Proposed Measures

SCE has proposed the following applicant proposed measure (APM) to minimize impacts associated with transportation and traffic that could be caused by the Project (SCE, 2015). This impact analysis assumes that the APM would be implemented as part of the Project.

APM TRA-01: Minimize Use of SR 91. Heavy-duty construction vehicles and equipment would not utilize SR 91 within the City of Corona (from the Green River Road exit to the Pierce Street exit) to access the proposed Circle City Substation site during peak traffic hours throughout the approximately 9-week-long grading period at the substation site. On weekdays between 7:00 a.m. and 9:00 a.m., heavy-duty construction vehicles and equipment would not utilize SR 91 heading west, and would not utilize SR 91 heading east between 4:00 p.m. and 6:00 p.m. Alternate travel routes, such as East 6th Street or Magnolia Avenue, would be used instead during these times.

4.17.4 Impacts and Mitigation Measures

4.17.4.1 Approach to Analysis

According to the CEQA Guidelines, a project would normally result in an impact to transportation and traffic if it would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Occasional post-construction maintenance activities would likely involve fewer than 10 trips per day dispersed throughout the Project area, which would briefly affect only local segments.

The duration of potentially significant impacts related to short-term disruption of traffic flow and increased congestion generated by construction vehicles, and/or loss of a travel lane to accommodate the construction work zone, would be limited to the period of time needed to complete construction of a Project component. Therefore, mitigation measures identified below focus on reducing the short-term construction effects of the Project. Short-term impacts associated with transportation and traffic would result from increases in traffic volumes, temporary loss of travel lanes, and potential safety effects.

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

Impact 4.17-1: Construction could adversely affect traffic and transportation conditions. *Less than significant with mitigation* (Class II)

Construction activities that would be associated with the Project would include the movement of light-, medium-, and heavy-duty vehicles (including oversize vehicles such as cranes) over I-15, SR 60, I-10, SR 91, SR 71, and/or SR 83, and local roads maintained by the cities of Corona, Ontario, Chino, Norco, and Eastvale. Project-related vehicles and equipment would generally travel from local temporary staging yards or contractor yards to work sites in the morning, returning to their points of departure in the evening. Based on a conservative assumption of simultaneous construction activities, SCE has estimated that construction of the Project would generate a maximum of approximately 256 daily vehicle trips. The 256 daily vehicle trips would include commute trips by 100 workers (two per day between home and the work site), and 56 one-way construction truck trips per day (SCE, 2015). The actual number of daily vehicle trips may be lower depending on the final construction schedule, but the maximum number of daily vehicle trips is used here to ensure that potential impacts are not understated.

Some new temporary and permanent access roads would be established within SCE rights-of-way (ROWs), public ROWs, and public and private lands to facilitate access from existing roads to the pole sites. Property owner approval would be obtained prior to construction activities for access roads in areas outside of SCE ROWs. Rehabilitation and improvements to existing roads may be required to facilitate construction access. Primary access to Circle City Substation would be from Leeson Lane along the eastern boundary of the substation property, with secondary access from Leeson Lane along the western boundary of the substation property. These primary and secondary access routes would be located within SCE easements that would measure about 60 feet wide. A total of four new permanent access roads and five permanently-widened existing roads would be established to access the Mira Loma-Jefferson 66 kV line.

I-15, SR 91, and SR 60 - the primary freeways that would be used to access the Project area during construction - would each experience a less-than-one-percent increase in average daily traffic volume during peak construction period. In addition, SCE would encourage carpooling to reduce personal vehicle traffic to the greatest extent possible. Subtransmission line work crews would generally leave their personal vehicles at designated locations (e.g., park-and-ride

facilities, materials staging yards, or substations) and would proceed to the work site in crew trucks. If SCE construction crews are used, they would typically be based at SCE's existing local facilities, such as Mira Loma Substation.

Project construction activities (e.g., trenching for underground components) would require temporary lane closures, on Magnolia Avenue, East Grand Boulevard, and West Blaine Street. Temporary lane closures would also be required to install the existing Archibald-Chino-Corona 66 kV Subtransmission Line in an underground configuration across Hellman Avenue. In addition, temporary lane closures may be necessary in areas where poles are located adjacent to roadways during initial pulling operations. In areas where road shoulders are present, or where bike lanes, parking spaces, or other areas are located adjacent to the roadway (e.g., along portions of River Road, Hellman Avenue, Baron Drive, West Blaine Street, East Blaine Street, El Sobrante Road, and East 3rd Street), construction activities may not require lane closures. Lane closures could be implemented during pole installation, pole removal, overhead crossings, and/or conductor-pulling activities.

The above-described construction-generated traffic and lane closures would be temporary, and therefore would not result in long-term degradation on operating conditions on area roadways. Project-generated truck trips would be spread over the course of the work day, and construction workers would commute to and from the worksite primarily before or after peak traffic hours. In addition, subtransmission line-worker traffic increases would be dispersed throughout the Project alignments. Peak construction periods are expected to last approximately 9 weeks (out of the approximately 18-month duration of construction). An increase of approximately 256 daily vehicle and truck trips during the approximately 9-week peak construction period would result in a less-than-0.2-percent increase in average daily traffic volume on I-15, SR 91, and SR 60. The primary impact from construction truck traffic would be a temporary and intermittent reduction of roadway capacities due to the slower movements of trucks compared to passenger vehicles.

Temporary closure of travel lanes could adversely affect the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, railroad tracks, pedestrian and bicycle routes, and mass transit. Jurisdictions such as the cities and counties affected by the Project, and Caltrans, require traffic management measures, in the form of a Traffic Management Plan (TMP), to reduce or avoid impacts caused by construction activities. TMPs are prepared as part of jurisdictions' encroachment permit requirements. While SCE would obtain and comply with State and local road encroachment permits for public roads that are crossed by the subtransmission and source lines, temporary lane closures would result in significant impacts related to traffic congestion without mitigation. However, implementation of Mitigation Measure 4.17-1 would ensure that impacts would be less than significant.

The Project would increase wear-and-tear on the designated haul routes used by construction vehicles (e.g., heavy trucks to transport equipment and material) to access the Project work sites. The degree to which this impact would occur depends on the pavement type, thickness, and existing condition of the road. The Project's impacts are expected to be negligible on major arterial roads that are designed for heavier truck loads. Residential streets are generally not built with a pavement thickness that will withstand substantial truck traffic volumes. This impact is considered significant

without mitigation. However, implementation of Mitigation Measures 4.17-1 would ensure that impacts would be reduced to less than significant.

Mitigation Measure 4.17-1: As part of any encroachment permit, SCE shall prepare and implement a Traffic Management Plan subject to approval of Caltrans and/or the applicable local government(s), including agencies that operate alternative modes of transportation (e.g., North Main Corona Metrolink Station, the Corona Cruiser/RTA bus route, and the Metrolink Rail path). The approved Traffic Management Plan and documentation of agency approvals shall be submitted to the CPUC prior to the commencement of construction activities. At a minimum, the plan shall:

- Include a discussion of work hours, haul routes, and work area delineation within public road rights-of-way. Heavy-duty construction vehicles and equipment would not utilize SR 91 within the City of Corona (from the Green River Road exit to the Pierce Street exit) to access the proposed Circle City Substation site during peak traffic hours throughout the approximately 9-week-long grading period at the substation site. On weekdays between 7:00 a.m. and 9:00 a.m., heavy-duty construction vehicles and equipment would not utilize SR 91 heading west, and would not utilize SR 91 heading east between 4:00 p.m. and 6:00 p.m. Alternate travel routes, such as East 6th Street or Magnolia Avenue, would be used instead during these times to avoid peak traffic hours along SR 91.
- Require construction work to utilize traffic control and flagging when construction vehicles are present;
- Provide access and parking restrictions through posted signage;
- Require workers to park personal vehicles at the approved staging area and take only necessary project vehicles to the work sites;
- Lay out plans for notifications and a process for communication with adjacent residents and landowners prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which road/lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; and
- Include plans to coordinate all construction activities with emergency service providers in the area prior to construction to ensure that construction activities and associated lane closures would not significantly affect emergency response vehicles. Emergency service providers shall be notified of the timing, location, and duration of construction activities. SCE shall submit verification of its consultation with emergency service providers to the CPUC. All roads shall remain passable to emergency service vehicles at all times.
- Identify all roadway locations where special construction techniques (e.g., night construction) would be used to minimize impacts to traffic flow.
- Repair roads damaged by Project construction to a structural condition equal to that which existed prior to construction activity. The SCE and the local jurisdiction(s) shall enter into an agreement prior to construction that will detail the pre-construction conditions and the post-construction requirements of the rehabilitation program.
- Lane closures shall occur during off-peak traffic hours (i.e., 9:00 a.m. to 4:00 p.m. and 6:00 p.m. to 7:00 a.m.)

Significance after Mitigation: Less than Significant.

Impact 4.17-2: Project operation and maintenance could adversely affect traffic and transportation conditions. *Less than significant* (Class III)

Components of the Project would be unstaffed during typical daily operations. Electrical equipment would be remotely monitored and controlled by an automated system. However, SCE personnel would visit the Project components for routine or emergency repair or maintenance purposes, and infrastructure along the Project alignments would be inspected approximately once annually. The estimated number of vehicle trips associated with normal operation of the Project would be fewer than 10 per day; therefore, impacts to the current circulation system would be less than significant.

Mitigation: None required.

---

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

Impact 4.17-3: Operation and maintenance could cause conflict with level-of-service standards. *Less than significant* (Class III)

The Project is located in Riverside and San Bernardino counties, and crosses several cities. As noted above in the Regulatory Setting, the CMP Transportation Impact analyses were not developed to address temporary impacts associated with construction projects (like the Project), which are transitory in nature.

As described above, components of the Project would be primarily unstaffed during operations. SCE personnel would visit substation sites for routine or emergency repair or maintenance purposes, and infrastructure along the transmission and source line corridors would be inspected approximately once annually. The estimated number of total vehicle trips would be fewer than 10 per day dispersed throughout the Project area on infrequent days when maintenance activities would occur. That level of increased traffic would not trigger the CMP screening criteria or be expected to alter an existing roadway LOS. In addition, existing operational maintenance activities would decrease in certain portions of the proposed Project alignment due to the lower maintenance requirements of the tubular steel poles and light-weight steel poles that would replace existing wood distribution poles along the proposed source line routes and the Mira Loma-Jefferson 66 kV Subtransmission Line. For these reasons, the proposed Project's impact would be less than significant.

Mitigation: None required.

---

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks.

Impact 4.17-4: Changes in air traffic patterns and increased air traffic levels could result in safety risks. *Less than significant with mitigation* (Class II)

As discussed in the setting, there are three public-use airports in the general vicinity of the Mira Loma-Jefferson line corridor: Chino Airport is located approximately 0.7 mile northwest of the proposed Mira Loma-Jefferson subtransmission line alignment, and Corona Municipal Airport is located approximately 1.1 miles southwest of the proposed Circle City Substation site. In addition, Ontario International Airport is located approximately 0.9 mile northeast of the potential staging yard location at the SCE Ontario Service Center.

Federal Aviation Regulation (FAR) Part 77 regulates structure heights near airports through established threshold heights of protected air space. These surfaces are defined by horizontal planes above specific ground elevations and or sloped planes at specific ratios. The overall intent of protected air space is to protect airplanes and structures from interface hazards.

The proposed Project is located within the Riverside County Airport Land Use Commission's Airport Land Use Compatibility Plan boundaries for the Chino Airport and Corona Municipal Airport. However, the proposed Project is not subject to the use limitations and regulations contained within the plans, as local authority is pre-empted by the CPUC. The proposed Project would generally be consistent with the guidelines contained within the Land Use Compatibility Plans, with the exception of approximately 0.2 mile of the Mira Loma-Jefferson 66 kV Subtransmission Line, where approximately four LWS poles would be replaced within Airport Land Use Zone C of the Chino Airport. The maximum height of the LWS poles would be 85 feet (approximately the same height as those currently at this location), which is higher than the limit of 70 feet of Airport Land Use Zone C. The crane used to replace the LWS poles also would exceed the suggested height limit, and would be taller than the poles. However, construction activities would be temporary and short-term, lasting 4 to 8 days (i.e., 1 to 2 days per pole).

Title 14, Part 77 of the CFR states that FAA notification is necessary for construction projects greater than 200 feet in height or those located within 20,000 feet of a public-use airport that exceeds a 100-to-1 surface ratio from any point on an airport's longest runway measuring more than 3,200 feet. The proposed Project would exceed a 100-to-1 surface ratio for both the Chino and Corona Municipal airports (SCE, 2015).

As discussed under Impact 4.9-4 in Section 4.9, *Hazards and Hazardous Materials*, the FAA would conduct its analysis of the Project structures and may recommend no changes to the design of the proposed structures; or it may request redesigning the proposed structures near the airports to reduce their height, marking the structures (including the addition of aviation lighting), or placing marker balls on wire spans. Implementation of Mitigation Measure 4.9-4 would ensure that the desired intent of the FAA recommendations with regard to aviation safety are incorporated in the Project, and would reduce this potentially significant impact to aviation safety to a less-than-significant level.

No helicopter use is anticipated to be necessary during construction of the proposed Project. While construction of the proposed Project may temporarily obstruct navigable airspace for the Chino Airport due to the replacement of approximately four LWS poles, impacts would be temporary and short-term, and there would be no permanent substantial change to existing air traffic patterns following construction of the proposed Project. In addition, SCE would coordinate with necessary agencies prior to construction through the FAA notification process. For these reasons, impacts to air traffic patterns during Project construction would be less than significant.

There would be no operation and maintenance activities that would affect air traffic levels or patterns, as the required periodic (approximately once per year or as needed) inspections of TSPs and LWS poles along the proposed Source Line Route and the Mira Loma-Jefferson 66 kV Subtransmission Line would occur from the ground (i.e., no aerial inspections by helicopters).

Mitigation: Implement Mitigation Measure 4.9-4.

Significance after Mitigation: Less than Significant.

---

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact 4.17-5: Traffic safety hazards could increase for vehicles, bicyclists, and pedestrians on public roadways. *Less than significant with mitigation* (Class II)

Construction

Construction of the Project would not change the configuration (alignment) of area roadways. However, heavy equipment operating adjacent to or within a road ROW, and use of temporary lane closures to install Project components adjacent to public roadways, would increase the risk of accidents (resulting in a significant impact), as construction-related trucks on local and state roadways would interact with other vehicles. Potential conflicts could also occur between construction traffic and alternative modes of transportation (e.g., bicyclists and buses) that also would result in a significant impact. Implementation of Mitigation Measure 4.17-1 would require SCE to prepare a Traffic Management Plan in accordance with professional engineering standards prior to construction, including compliance with roadside safety protocols, emergency access, and flaggers to reduce the risk of accidents. Therefore, temporary increases in the potential for traffic accidents associated with the proposed Project would be mitigated to a less than significant level with implementation of Mitigation Measure 4.17-1.

Mitigation: Implement Mitigation Measure 4.17-1.

Significance after Mitigation: Less than Significant.

Operation and Maintenance

The Project would not change the configuration (alignment) of area roadways. Traffic from operation and maintenance would not create a substantial increase in traffic, introduce

incompatible uses to area roadways, or result in an increase in safety hazards for bicyclists, and pedestrians on public roadways. The Project would result in subtransmission line poles being on both sides of the northern part of Hellman Avenue, which could increase the hazards potential if a vehicle were to leave the road (i.e., a Fixed Object Collision). There are already parts of Hellman Avenue with poles on both sides of the road, and the increased hazards potential caused by the Project would not be substantial. Four new permanent access roads would be constructed for the Mira Loma-Jefferson 66 kV Subtransmission Line, with the roads designed to allow safe ingress and egress from the public roadways. Therefore, impacts pertaining to a substantial increase in hazards due to a design feature or incompatible use would be less than significant.

---

e) Result in inadequate emergency access.

Impact 4.17-6: Construction activities could result in delays for emergency vehicles on roadways in the area. *Less than significant with mitigation* (Class II)

All construction activities at the substation site would be within the fencelines of those facilities. Associated activities and vehicles at the substations would not reduce the width of access roads or driveways, or block roads or driveways, and thus would not impair emergency access to or from the substations.

Subtransmission-related construction activities such as the proposed source lines, the Mira Loma-Jefferson 66 kV Subtransmission Line, and the Archibald-Chino-Corona underground crossover would require temporary lane closures, and would involve the movement of oversize vehicles that could affect emergency vehicle access to and through the Project construction areas. Temporary lane closures could also occur during stringing or removing the conductors across roadways, during the installation and removal of guard structures, or during the installation of poles adjacent to roadways. Delays could occur along emergency access routes during these construction-related lane closures. Therefore, impacts regarding emergency access are considered significant.

Implementation of Mitigation Measure 4.17-1 requires the construction contractor to coordinate all construction activities with emergency service providers in and along the Project corridors to minimize disruption to emergency vehicle access to land uses along the corridors. Implementation of this measure would ensure that potential impacts associated with temporary effects on emergency service provider access would be mitigated to less-than-significant levels.

Mitigation: Implement Mitigation Measure 4.17-1.

Significance after Mitigation: Less than Significant.

---

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Operation and Maintenance

Operations of the Project would not directly or indirectly eliminate alternative transportation corridors or facilities pertaining to bicycle lanes or public transit, nor would it include changes in policies or programs that support modes of alternative transportation. The Project would be largely unattended during operation, with periodic maintenance and monitoring visits. In addition, existing operational maintenance activities would decrease in certain portions of the proposed Project alignment due to the lower maintenance requirements of the tubular steel poles and light-weight steel poles that would replace existing wood distribution poles along the proposed Source Line Route and the Mira Loma-Jefferson 66 kV Subtransmission Line. While lane closures may be required during pole-maintenance activities, the frequency of these activities would not significantly increase compared to existing maintenance activities for the existing lines. Therefore, there would be no impact associated with operation and maintenance.

Impact 4.17-7: Alternative modes of transportation (public transit, bicycle or pedestrian) could be adversely affected during construction. ***Less than significant with mitigation*** **(Class II)**

Construction of the Project could adversely affect the railway, bus routes, and bike lanes that would be spanned or crossed by the Project as a result of increased traffic and temporary lane closures due to conductor-pulling activities, trenching activities, string of the transmission line over roadways, and installation of poles and crossing structures. For example, access to the North Main Corona Metrolink Station could be temporarily delayed due to lane closures, the Corona Cruiser/RTA bus route and the Metrolink Rail path would be affected by construction activities, and the Project would span or cross about 15 bike lanes. Where road shoulders, bike lanes, parking spaces, or open areas are located adjacent to roadways, partial lane closures would be necessary. Where these elements are not present, complete lane closures would likely be required. SCE would obtain encroachment permits or other required agreements from the local jurisdictions, as appropriate, for construction activities that would encroach upon any public ROW, public easement, or a private ROW, such as the railroad. Therefore, impacts are considered significant.

Construction would generally occur within existing utility corridors and would not involve any activities that would conflict with transportation policies, plans, or programs. Although construction of the Project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities, nor would the Project include changes in policies or programs that support alternative transportation, implementation of Mitigation Measure 4.17-1 would reduce potential impacts related to temporary conflicts with established policies regarding impaired access to alternative transportation facilities and temporary reduction in performance and safety of such facilities to a less-than-significant level.

Mitigation: Implement Mitigation Measure 4.17-1.

Significance after Mitigation: Less than Significant.

4.17.5 Alternatives

4.17.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would not affect transportation and traffic conditions (No Impact).

4.17.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Under Alternative B, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be constructed and the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed. Impact classifications to transportation and traffic would be the same as those disclosed for the Project (i.e., less than significant impacts (Impacts 4.17-1 and 4.17-4 through 4.17-7) with implementation of Mitigation Measures 4.17-1 or 4.9-4 (Class II), and less than significant impacts that require no mitigation (Impacts 4.9-2 through 4.9-3; Class III). However, due to the decrease in construction within public roadways that would result by not constructing the substation source lines part of the Project, Alternative B would result in reduced impacts associated with construction vehicles adversely affecting traffic and transportation conditions; potential delays for emergency vehicles on roadways; and construction vehicles adversely affecting alternative modes of transportation (Impacts 4.17-1, 4.17-6, and 4.17-7).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Alternative C1 would have the same alignment as the proposed Mira Loma-Jefferson subtransmission line; however, it would be constructed underground for one-half mile within Hellman Avenue beginning at the southwest corner of American Heroes Park continuing south to Pine Avenue/Schleisman Road, where it would transition to overhead for the remainder of Hellman Avenue.

Because Alternative C1 would result in the line being installed underground for this half-mile portion of the alignment, Hellman Avenue would be subject to open trenching, which would increase temporary impacts along this roadway compared to the proposed Project (Impacts 4.17-1 and 4.17-5 through 4.17-7; Class II). However, undergrounding the line along the half-mile segment of Hellman Avenue would eliminate the hazard under the proposed Project of a vehicle striking a pole where poles would exist on both sides of the road under the Project (No Impact). The change to air traffic patterns impact under this alternative would be reduced relative to the proposed Project; however, implementation of Mitigation Measure 4.9-4 is suggested.

Implementation of this measure would reduce this potentially significant impact on air traffic patterns to a less-than-significant level (Impact 4.17-4; Class II). The other impacts under this alternative would be the same as the Project; Impacts 4.17-2 and 4.17-3 would be less than significant (Class III).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

The Alternative C2 segment deviates from the proposed Mira Loma-Jefferson subtransmission line route where SCE's existing ROW is crossed by Archibald Avenue. At this location, this line alternative would transition to underground and continue within Archibald Avenue to Smith River Road, where it would transition to overhead, and continue south along Archibald Avenue. Like the proposed Project, it would span the Santa Ana River, but unlike the Project, it would not do so in the vicinity of an existing bridge/road. In addition, this alternative would result in an additional 1.2 miles of the line being installed underground, which would subject this portion of Archibald Avenue to open trenching that would increase the intensity of transportation and traffic impacts compared to the proposed Project segment it would replace on Hellman Avenue and River Road. However, because Archibald Avenue (6-lane divided road) has more travel lanes than Hellman Avenue (2-lane road), it would be better able to accommodate traffic disturbances during construction than would Hellman Avenue, although the existing traffic volume on Archibald Avenue is higher than on Hellman Avenue. Construction-related traffic impacts associated with Alternative C2 would be the same as for the proposed Project with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1 and 4.17-5 through 4.17-7; Class II). Alternative C2 would eliminate the hazard of a vehicle striking a pole where poles would exist on both sides of Hellman Avenue under the Project (No Impact).

Similar to the proposed Mira Loma-Jefferson subtransmission line alignment, the Alternative C2 alignment is in the vicinity of Chino Airport; however, with the exception of the new pole that would transition the overhead line to underground in SCE's ROW at Archibald Avenue, the other overhead poles and conductor would be outside of the 100-to-1 surface ratio relative to the airport runway. The change to air traffic patterns impact under this alternative would be reduced relative to the proposed Project; however, given that the FAA would need to be notified about the one structure, to ensure that the desired intent of any FAA recommendations with regard to aviation safety are incorporated as part of the project, implementation of Mitigation Measure 4.9-4 is suggested. Implementation of this measure would reduce this potentially significant impact on air traffic patterns to a less-than-significant level (Impact 4.17-4; Class II). The other operational impacts under this alternative would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3 (Class III).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Under Alternative C3, up to three subtransmission-level (66 kV) battery storage and substation facilities, associated subtransmission and telecommunication lines, and upgrades to existing Jefferson Substation, would be constructed and operated instead of the Mira Loma-Jefferson 66 kV line component of the Project. The subtransmission line connections for the three battery storage and substation facilities would be along 6th Street, Ontario Avenue, and Magnolia Avenue. Construction-related traffic impacts associated with Alternative C3 would be reduced

compared to the proposed Project. With implementation of Mitigation Measure 4.17-1, short-term adverse impacts to traffic conditions would be less than significant (Impacts 4.17-1 and 4.17-5; Class II), and although impacts related to emergency vehicle delays and adverse effects on alternative modes of transportation would be reduced given the shorter subtransmission line lengths compared to the proposed Mira Loma-Jefferson subtransmission line, these impacts would also be mitigated to less than significant (Impacts 4.17-6 and 4.17-7; Class II). Alternative C3 would eliminate the hazard of a vehicle striking a pole where poles would exist on both sides of Hellman Avenue under the Project (No Impact).

The Alternative C3 subtransmission line alignments are not in the immediate vicinity of Chino Airport or Corona Airport and would be outside of the 100-to-1 surface ratio relative to the airport runways. Unlike the proposed Mira Loma-Jefferson subtransmission line alignment, there would be no impact related to changing to air traffic patterns under this alternative. The other operational impacts under this alternative would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

4.17.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Alternative D1 would be located immediately northwest of and adjacent to the proposed Circle City Substation site on the same property at Leeson Lane. The site would be accessed by a 26-foot wide driveway from Leeson Lane that would enter the site from the northeast. Two of the underground distribution circuit connections would enter Leeson Lane and would turn southwest and then cross the street to Magnolia Avenue, where they would connect to existing distribution circuits in an existing vault. The other two underground distribution circuit connections would transition to overhead at Leeson Lane where they would be connected to two other existing distribution circuits on an existing pole.

Alternative D1 would result in construction and operation impacts similar to the proposed Project, except that impacts to motorists would be substantially decreased compared to the proposed Project because Alternative D1 would not include construction of the substation source lines. The amount and duration of lane closures would be substantially reduced in this case. Although, some limited construction in Leeson Lane would be required to connect distribution circuits, and construction would be required in or along Magnolia Avenue, Railroad Street, Grand Avenue, Quarry Street, 6th Street, and other streets to connect the telecommunication lines, the overall construction-related impacts would be reduced compared to the proposed Project, and impacts would be less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II).

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class II) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative D1 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

Alternative D2: 66/12 kV Substation Site Alternative

Alternative D2 would be located south of Leeson Lane, east of All American Way, and west of Temescal Street in the City of Corona, just east of the proposed substation site. Construction and operation impacts would be the same as described for the proposed Project. Although this alternative would be on an adjacent parcel, it would be constructed using the same specifications as the proposed Project. Therefore, impacts to transportation and traffic from implementation of Alternative D2 would be the same as disclosed for the proposed Project and would be less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II).

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class II) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative D2 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

Alternative E1: Quarry Street 66 kV Source Line Segment

Alternative E1 would follow the proposed Pedley Source Lines, except where the proposed lines would turn due east at the intersection of Third Street and Grand Boulevard, Alternative E1 would continue underground in a southeasterly direction along East Grand Boulevard to Quarry Street. At Quarry Street this alternative would turn east and continue underground along Quarry Street for approximately 500 feet, where it would transition to overhead and include installation of light-weight steel poles along the north side of Quarry Street.

Because both the proposed Pedley Source Lines and Alternative E1 would replace and install electric infrastructure along residential roads with similar road characteristics, Alternative E1 would result in construction and operation impacts consistent with the proposed Project, except that impacts to residents and motorists would be increased compared to the proposed Project because Alternative E1 would be located underground (road would be subject to open trenching) for an additional length of the alignment along East Grand Boulevard and the west portion of Quarry Street. Impact classifications for transportation and traffic associated with construction of Alternative E1 would be the same as those disclosed for the Project, less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II). However, due to the increase in construction activities within public roadways that would be associated with Alternative E1, its impacts would be greater than the proposed Pedley Source Lines with respect to transportation and traffic impacts.

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class II) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative E1 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Alternative E2 would have the same alignment as the proposed Pedley Source Lines, but would be installed underground from just west of I-15 to the proposed Circle City Substation site. Because Alternative E2 would result in this portion of the alignment being installed underground and East 6th Street, Magnolia Avenue, and Leeson Lane would be subject to open trenching, it would increase the impacts along these roadways compared to the proposed Project. Impact classifications for transportation and traffic associated with construction of Alternative E2 would be the same as those disclosed for the Project, less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II). However, due to the increase in construction activities within public roadways that would be associated with Alternative E.2, its impacts would be greater than the proposed Pedley Source Lines with respect to transportation and traffic impacts.

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class II) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative E2 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

Alternative E3: Southern 66 kV Source Lines Alignment

Alternative E3 would be an alternative to the proposed Databank Source Lines. This alternative route, running overhead, would begin at the intersection of Old Temescal Road and Compton Avenue, and then would continue north along Compton Avenue to Pico Street, where it would continue north to a location where it would cross over I-15, and proceed in a northeasterly direction across vacant land, across Sherborn Street, and across a small body of water to All American Way, where it would enter the southern end of the proposed substation site. The total length of Alternative E3 would be approximately 1.3 miles. Although Alternative E3 would require an overhead crossing of I-15 that could temporarily affect interstate traffic during conductor stringing operations, it would require less underground construction work than the proposed Project (avoiding open trenching in Magnolia Avenue), resulting in an overall decrease in impacts compared to the proposed Project. Impact classifications for transportation and traffic associated with construction of Alternative E3 would be the same as those disclosed for the Project, less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II). However, due to the decrease in construction activities within public roadways that would be associated with Alternative E3, its impacts would be reduced compared to the proposed Databank Source Lines with respect to transportation and traffic impacts.

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class II) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative E3 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

Alternative E4: Databank 66 kV Source Lines Only

Alternative E4 would result in only the proposed Databank Source Lines and the Circle City Substation to Corona Substation telecommunications line being connected to Circle City Substation and the Pedley Source Lines would not be constructed. Same as for the proposed Project, Alternative E4 would require open trenching in Magnolia Avenue; however, the open trenching that would be associated with the proposed Pedley Source Lines would not occur. Impact classifications for transportation and traffic would be the same as those disclosed for construction of the Project, less than significant with implementation of Mitigation Measure 4.17-1 (Impacts 4.17-1, 4.17-6, and 4.17-7; Class II, and less than significant, Class III). However, due to the decrease in construction within public roadways, the impacts under Alternative E4 would be reduced.

The adverse effects on air traffic patterns (Impact 4.17-4; Class II) and traffic hazards related to poles on both sides of Hellman Avenue (Impact 4.17-5; Class III) associated with the Mira Loma-Jefferson subtransmission line would continue to occur under this alternative. The other operational impacts under Alternative E4 would be the same as the Project, less than significant (Impacts 4.17-2 and 4.17-3; Class III).

References – Transportation and Traffic

California Department of Transportation (Caltrans), 2014. California Manual of Uniform Traffic Control Devices, 2014 Edition, Revision 3 (March 8, 2018). Available online at: http://www.dot.ca.gov/trafficops/camutcd/. Site visited May 18, 2018.

Caltrans, 2017. 2016 Traffic Volumes on California State Highways. Online. http://www.dot.ca.gov/trafficops/census/. Site visited May 17, 2018.

Chino Airport. 2011. Airport Master Plan. Online. http://www.chinohills.com/chino-airport-master-plan-documents/. Site visited June 14, 2016.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: http://www.cityofchino.org/government-services/community-development/general-plan. Accessed on June 10, 2016.

City of Chino, 2014. Falloncrest at The Preserve Master Plan Draft Environmental Impact Report, page 4.2-112.

City of Chino, 2015. Watson Industrial Park Final Environmental Impact Report, p. 4.13-19.

City of Corona, 2004. City of Corona General Plan. Available online at: http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf. Accessed on June 12, 2016.

City of Corona, 2015. Skyline Heights Project Draft Environmental Impact Report, p. 4.M-24.

City of Corona, 2017. Existing Traffic Control with Average Daily Traffic Volumes. Available online at: https://www.coronaca.gov/home/showdocument?id=722. Created on May 30, 2017.

City of Eastvale, 2012. City of Eastvale General Plan. Available online at: http://www.eastvaleca.gov/home/showdocument?id=2360. Accessed on June 12, 2016.

City of Eastvale, 2016. Eastvale Crossings Project Draft Environmental Impact Report, pp. 3.12-183.

City of Norco, 2000. General Plan Circulation Element, pp. 3 and 30. Adopted March 15, 2000.

City of Ontario, 2006. Ontario Wal-Mart Supercenter Subsequent Environmental Impact Report, pp. 4.4-20 through 22.

City of Ontario, 2009. City of Ontario Policy Plan. Available online at: http://www.ontarioplan.org/policy-plan/. Accessed on June 14, 2016.

County of Riverside, 2011. 2011 Riverside County Congestion Management Program, December 14, 2011.

County of Riverside, 2014. County of Riverside Transportation Department – Traffic Counts - 2014. Available online at: http://rctlma.org/trans/Engineering-Services/Traffic-Counts. Accessed on June 21, 2016.

County of Riverside, 2014. County of Riverside General Plan. Available online at: http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx. Accessed on June 12, 2016.

County of San Bernardino, 2007. County of San Bernardino General Plan. Available online at: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf. Accessed on June 10, 2016.

County of San Bernardino, 2016. San Bernardino Congestion Management Program, 2016 Update, Appendix B, p. B-2, June 2016.

Florida Department of Transportation, 2012. Quality/Level of Service Handbook Tables.

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment (December 2015).

4.18 Utilities and Service Systems

This section addresses the impacts on water, wastewater, and solid waste disposal systems that would result from construction, operation, and maintenance of the Project and alternatives. The Project would be located primarily in the City of Corona, as well as in the cities of Chino, Eastvale, Norco, and Ontario, and in unincorporated Riverside County. The cities of Corona, Eastvale, and Norco are located in Riverside County, and the cities of Chino and Ontario are located in San Bernardino County.

4.18.1 Setting

4.18.1.1 Water Services

Drinking water for the City of Corona is provided by the city's Department of Water and Power. Forty-three thousand acre-feet or 14 billion gallons per year of water is produced by the Department of Water and Power and supplied to customers. The City of Corona's water supply is a blend of local production wells and water that is imported from the Metropolitan Water District of Southern California (MWD). In 2013, the Department of Water and Power obtained approximately 57 percent of its supply from City of Corona groundwater wells. An additional approximately 35 percent of the city's water was imported from the Colorado River, 4 percent was imported through the State Water Project, and 3 percent was purchased from the Western Municipal Water District (WMWD).[1] Half of the groundwater in the City of Corona is treated at Temescal Desalter. Water from the Colorado River is treated at the city's two surface water treatment facilities: the Sierra Del Oro and Lester water treatment facilities. There are also five active blending facilities that the Department of Water and Power operates (City of Corona, 2015a).

The Chino Basin Desalter Authority (CDA) is a Joint Exercise of Powers Agency formed between Jurupa Community Services District, the Santa Ana River Water Company, the cities of Chino, Chino Hills, Norco, and Ontario, WMWD, and the Inland Empire Utilities Agency. The CDA purifies groundwater extracted from the lower Chino Basin and distributes the drinking water to member agencies. CDA member agencies have take or pay contracts with CDA for 24,600 acre feet per year of water supply from the desalters. Member agencies also purchase water from the MWD, but the more the desalters produce, the less the member agencies buy from MWD. Chino Basin groundwater is the only water source for the CDA. Chino Basin is one of the largest groundwater basins in Southern California (CDA, 2017). The City of Chino's water is drawn from a mix of approximately 28 percent surface water and 72 percent groundwater. Surface water is imported from the Metropolitan Water District of Southern California through the State Water Project and is treated at the Agua de Lejos Water Treatment Plant. The

[1] The Metropolitan Water District of Southern California (MWD) is a regional wholesaler that delivers water to 26 member public agencies – 14 cities, 11 municipal water districts, one county water authority – which in turn provides water to more than 19 million people in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. MWD currently delivers an average of 1.5 billion gallons of water per day to a 5,200-square-mile service area (MWD, 2017).

groundwater is obtained from local wells operated by the City of Chino or the Chino Basin Desalter Authority (CDA) (City of Chino, 2010).

The City of Eastvale's water is supplied by the Jurupa Community Services District, which draws most of its water from local groundwater and the CDA. The CDA owns and operates two water treatment plants in the Chino Basin (JCSD, 2016).

The majority of the City of Norco's groundwater supplies are pumped from the Temescal and Chino groundwater basins. Norco has four active groundwater wells located in Temescal that provide water directly to the water distribution system. Norco owns three inactive groundwater wells located in the Chino groundwater basin. Water purchased by the City from the CDA is extracted from the Chino groundwater basin. Water purchased by the City from the Arlington Desalter is extracted from the Arlington groundwater basin.

The unincorporated part of Riverside County near where the proposed Project would cross the Santa Ana River is within the City of Norco's Sphere of Influence and receives water utility service from Norco (City of Norco, 2015). The City of Norco is a member agency of the CDA and also receives its water from the CDA.

Water for the City of Ontario is provided by the Municipal Utilities Company. Approximately 80 percent of Ontario's drinking water comes from local groundwater sources, including 17 percent of the total supply from two water treatment plants operated by the CDA. The remaining 20 percent of Ontario's water is imported surface water supplied through the State Water Project and treated at the Agua de Lejos Treatment Plant before it is delivered to Ontario for use (City of Ontario, 2016). Supplemental water for the cities of Chino and Ontario is provided by the Inland Empire Utilities Agency (IEUA), which operates five regional water recycling plants and which imports water from the Metropolitan Water District of Southern California (MWD). The nearest regional treatment plants are Regional Water Recycling Plant 1, located in Ontario, and Regional Water Recycling Plant 2, located in Chino (IEUA, 2016).

4.18.1.2 Wastewater Services

Wastewater in Riverside County, including the cities of Corona, Eastvale, and Norco, is primarily managed by the WMWD, which operates two treatment plants in the cities of Corona and Riverside. The treatment plant in the City of Corona is a joint powers authority and is governed by the Western Riverside County Regional Wastewater Authority (WRCRWA). This facility is capable of providing clean recycled water for irrigation or for discharge into the watershed and has a design capacity of 8 million gallons per day with the capacity for future expansion. The WRCRWA plant collects wastewater from the WMWD, the City of Norco, the Jurupa Community Services District, and the Home Gardens Sanitary District, and then processes it and releases it into the Santa Ana River. The Riverside facility, known as the Western Water Recycling Facility and located near March Air Reserve Base, has a capacity of 3 million gallons per day and produces recycled water for irrigation use (WMWD, 2016).

The City of Corona operates three treatment facilities: Water Reclamation Facilities #1, #2, and #3. This system serves approximately 144,000 customers and treats 13.5 million gallons per day

on average (City of Corona, 2016). Corona also operates a reclaimed water system that consists of three water storage tanks, five booster stations, and 44 miles of reclaimed water lines. In 2015, the City delivered 4,055 acre-feet of water to nearly 300 connections via a dedicated distribution system for landscaping, toilet flushing with dual pumped systems, firefighting, dust control, and construction applications (City of Corona, 2015b).

The Water and Sanitation Division of the San Bernardino County Special District manages wastewater throughout much of San Bernardino County (San Bernardino County, 2016a). The Division of Environmental Health Services of the Department of Public Health oversees septic system construction when building projects are unable to connect to existing sewer infrastructure (San Bernardino County, 2016b).

Wastewater from the cities of Chino and Ontario is treated by the IEUA. IEUA owns and operates five facilities specializing in regional wastewater and recycled water services. IEUA's water recycling plants collectively take in approximately 50 million gallons of wastewater per day for treatment (IEUA, 2015).

4.18.1.3 Solid Waste and Recycling Service

Residential waste collection in the cities of Chino (City of Chino, 2016), Corona (City of Corona, 2004), and Norco (City of Norco, 2016) is provided by Waste Management, Inc. The City of Ontario provides a refuse and recycling service within the city, and waste is sent to the West Valley Material Recovery Facility (MRF) in the City of Fontana, which is under the administration of the San Bernardino County Department of Public Health. Most refuse is transported from the MRF to El Sobrante Landfill in the City of Corona. Solid waste collection in the City of Eastvale is provided by Waste Management, Inc. and Burrtec Waste Industries, Inc. (Burrtec) (City of Eastvale, 2016). Burrtec operates a transfer station in the City of Fontana near the Project, and a landfill in Salton City (Burrtec, 2016). San Bernardino County contracts with Burrtec and is responsible for solid waste management in unincorporated areas of the county (San Bernardino County, 2006). The locations of local landfills, along with the types of waste they accept, capacity, and distance from the Project are provided in **Table 4.18-1**.

4.18.1.4 Regulatory Setting

Federal

Safe Drinking Water Act

Originally passed by Congress in 1974 and amended in 1986 and 1996, the Safe Drinking Water Act (SDWA) allows the United States Environmental Protection Agency (USEPA) to establish drinking water standards and oversee water supplies to ensure that they are in compliance with those standards. The standards apply to public and private water suppliers serving 25 or more individuals. The SDWA is intended to protect drinking water supplies from both naturally occurring and artificially introduced contaminants.

TABLE 4.18-1
LANDFILLS AND RECYCLING CENTERS NEAR THE PROJECT SITE

Facility and Location	Waste Accepted	Approximate Capacity (cubic yards)		Approximate Distance from the Proposed Substation Site (miles)
		Total	Remaining	
El Sobrante Landfill 10910 Dawson Canyon Road, Corona	Solid waste, household refuse, yard trimmings, furniture, appliances, electronic waste	184,930,000	145,530,000	6.4
Frank R. Bowerman Sanitary Landfill 11002 Bee Canyon Access Road, Irvine	Mixed municipal, industrial, construction/demolition	266,000,000	205,000,000	14.4
West Valley Material Recovery Facility/Transfer Station (Transfer/ Processing Facility; Composting Facility; Construction and Demolition debris and Inert Debris Processing) 13373 Napa Street, Fontana	Construction/demolition, green materials, industrial, mixed municipal, wood waste	--	--	15.0
Olinda Alpha Sanitary Landfill 1932 North Valencia Avenue, Brea	Agricultural, industrial, construction/demolition, mixed municipal, tires, wood waste	74,900,000	38,578,383	18.4
San Bernardino County: Mid-Valley Landfill 2390 Alder Avenue, Rialto	Treated wood, solid waste, household refuse, yard trimmings, furniture, appliances, electronic waste, construction waste	101,300,000	67,520,000	19.8
Badlands Sanitary Landfill 31125 Ironwood Avenue, Moreno Valley	Solid waste, household refuse, electronic waste, tires	33,560,993	14,730,025	23.4
SAFETY-KLEEN (LAIDLAW) Imperial County, Westmorland, CA 92281	Wastewaters, contaminated soil, inorganics, organics, latex paint sludges, PCBs (< 50 ppm), pesticides, TCLP toxic metals, acid sludges, caustic sludges, and oil sludges	--	--	--
Buttonwillow Landfill 2500 West Lokern Road, Buttonwillow	Non-hazardous soil, California hazardous soil, hazardous soil for direct landfill, hazardous waste for treatment of metals, plating waste, hazardous and non-hazardous liquid, and debris for microencapsulation	10,000,000	950,000	150

NOTES:
1 Due to the distance of the landfills and recycling centers from the Project in general, the proposed Circle City Substation site was selected as a reference point because it is representative of the Project as a whole for purposes of evaluating relative distances from the site.
2 "--" means information is not applicable or available.

SOURCE: CalRecycle. 2016a.

Clean Water Act

The Clean Water Act (CWA) was originally enacted in 1948 and has been amended numerous times, with significant expansions in 1972 and 1977. The CWA's main objectives are to maintain and restore the chemical, physical, and biological integrity of waters through the authorization of water quality programs, regulation of discharges of pollutants, and establishment of water quality standards. Authority for the implementation and enforcement of the CWA lies primarily with the USEPA and its delegated state and local agencies, namely the State Water Resources Control Board (SWRCB), and in the Project area, the Santa Ana Regional Water Quality Control Board (SARWQCB).

State

Porter-Cologne Water Quality Control Act

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and assigns primary responsibility for the protection and enhancement of water quality to the SWRCB and the nine RWQCBs. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility of granting CWA National Pollutant Discharge Elimination System permits and Waste Discharge Requirement for certain point-source and non-point discharges to waters. The Porter-Cologne Act allows the SWRCB to adopt statewide Water Quality Control Plans and Basin Water Quality Control Plans, which serve as the legal, technical, and programmatic basis of water quality regulation statewide or for a particular region. The water quality control plans limit impacts on water quality from a variety of sources. The Water Quality Control Plan for the Santa Ana River Basin (or Basin Plan) establishes water quality objectives and beneficial uses for waters in the Santa Ana River basin, and is implemented by the SARWQCB. The Basin Plan designates beneficial uses and water quality objectives for "waters of the State," including surface waters and groundwater, and includes programs of implementation to achieve the water quality objectives.

Urban Water Management Planning Act

All urban water suppliers within the State of California are required to prepare Urban Water Management Plans. Sections 10610 through 10657 of the California Water Code detail the information that must be included in these plans, as well as who must file them.

NPDES General Permit for Discharges of Stormwater Associated with Construction Activities (Order 2009-0009-DWQ)

Construction activities disturbing 1 acre or more of land, or that disturb less than 1 acre but are part of a larger common plan of development of 1 or more acres, are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbing Activities (Construction General Permit). This General Permit requires that storm water discharges and authorized non-storm water discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards (identified in the Basin Plan).

The Construction General Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must be developed for the specific project type,

location, and characteristics, and must be submitted to the SWRCB along with the permit application (a Notice of Intent) before construction begins. A SWPPP is designed to ensure that: 1) all pollutants and their sources are controlled; 2) all non-stormwater discharges are identified and either eliminated, controlled, or treated; 3) site best management practices (BMPs) result in the reduction or elimination of pollutants in stormwater and authorized non-stormwater discharges; 4) calculations, design details, and BMP controls are correct; and 5) post-construction stabilization BMPs are completed.

The SWPPP provides specific construction-related BMPs to prevent soil erosion and loss of topsoil. Post-construction requirements require that construction sites match pre-project hydrology to ensure that the physical and biological integrity of aquatic ecosystems are sustained in their existing condition, unless the site is located within an area subject to the post-construction standards of an active Phase I or II municipal separate storm sewer system (MS4) permit that has an approved stormwater management plan. The post-construction standards include structural and nonstructural control measures to replicate the pre-project water balance and pre-project drainage density, and reduce pollutants in storm water discharges.

California Integrated Waste Management Act of 1989 and Assembly Bill 341

The California Integrated Waste Management Board (CIWMB) was created to oversee, manage, and track waste generated in California. The authority and responsibilities of the CIWMB were promulgated in Assembly Bill (AB) 939 and Senate Bill 1322, which were signed into law as the California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30). The California Integrated Waste Management Act, as modified by subsequent legislation, mandated all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (PRC Section 41780). In January 2010, the CIWMB changed its name to the Department of Resources, Recycling, and Recovery (CalRecycle).

AB 341, which amends the Integrated Waste Management Act of 1989 and was adopted by the California legislature in October 2011, directs CalRecycle to adopt a state policy that actively seeks to achieve a goal of diverting 75 percent of solid waste from landfills by 2020. The new legislation focuses largely on commercial waste generators, as this sector was identified as the most in need of improved waste management. AB 341 does not alter the 50 percent diversion mandate; rather, it is a “legislative declaration of policy” to guide CalRecycle’s administration of the California Integrated Waste Management Act (Theroux, 2012).

A jurisdiction’s diversion rate is the percentage of total generated waste it diverts from disposal through source reduction, reuse, and recycling programs. The state determines compliance with the 50 percent diversion mandate through a complex formula. Use of the formula requires cities and counties to conduct empirical studies to establish a base-year waste generation rate against which future diversion is measured. The diversion rate in subsequent years is determined through deduction instead of direct measurement. Rather than counting the amount of material recycled and composted, the city, county, or State agency tracks the amount of material disposed of at landfills and then subtracts that amount from the base-year amount; the difference is assumed to be diverted (PRC Section 41780.2).

Table 4.18-2 provides the 2005 and 2006 diversion rates (the most recent available data) for the cities within the study area, as well as for the unincorporated areas of San Bernardino County (CalRecycle, 2016b).

TABLE 4.18-2
DIVERSION RATES (AS A PERCENT OF THE TOTAL WASTE STREAM)

Jurisdiction	2005	2006
City of Corona	56	58
City of Eastvale*	--	--
City of Norco	60	65
City of Chino	62	61
City of Ontario	62	64
San Bernardino County (Unincorporated)	49	49
Riverside County	57	64
Riverside County (Unincorporated)	54	53

NOTE:
* The City of Eastvale had not yet incorporated in 2005 or 2006.
SOURCE: CalRecycle, 2016b

More recent data are available as per capita disposal rates. The per capita disposal rate is a jurisdiction-specific index used as one of several factors in determining a jurisdiction's compliance with AB 939. The per capita disposal rate allows jurisdictions, as well as the California Department of Resources Recycling and Recovery (CalRecycle), to set their primary focus on successful implementation of diversion programs (CalRecycle, 2016c). **Table 4.18-3** provides the 2014 per capita disposal rates in pounds per day for population and employment disposal.

TABLE 4.18-3
2014 JURISDICTIONAL PER CAPITA DISPOSAL RATES

	Population Disposal (pounds per day)		Employment Disposal (pounds per day)	
Jurisdiction	Target	Annual	Target	Annual
City of Corona	8.6	6.5	18.6	15.6
City of Eastvale	3.6	2.4	25.9	18.7
City of Norco	11.4	6.1	23.1	13.1
City of Chino	9.4	5.2	17.4	11.1
City of Ontario	9.9	6.6	16.4	11.0
San Bernardino County (Unincorporated)	6.2	4.5	43.3	28.0
Riverside County	8.6	5.8	19.5	13.3
Riverside County (Unincorporated)	7.3	5.0	30.9	27.9

SOURCE: CalRecycle, 2016c

22 California Code of Regulations Division 4.5

Title 22 of the California Code of Regulations (CCR) discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transport, disposal and recycling of universal wastes, where universal wastes are defined as those wastes identified in Section 66273.9 of Title 22 of the CCR, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also provides restrictions and standards relevant to waste destination facilities, and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements. Hazards and hazardous materials are described in detail in Section 4.9, *Hazards and Hazardous Materials*.

Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Project. Pursuant to CPUC General Order No. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only. Relevant local policies and ordinances for the jurisdictions that would be crossed by the Project were reviewed. There were none for the cities of Norco or Ontario that are be relevant to utilities and service systems. The following discussions provide relevant local policies and/or ordinances for Riverside County, San Bernardino County, the City of Chino, the City of Corona, and the City of Eastvale.

Riverside County General Plan

The following policies from the Circulation Element of the Riverside County General Plan are relevant to utilities and public services:

> *Policy C 1.4:* Utilize existing infrastructure and utilities to the maximum extent practicable and provide for the logical, timely, and economically efficient extension of infrastructure and services.
>
> *Policy C 25.2:* Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

Riverside Countywide Integrated Waste Management Plan

Since 2000, the California Integrated Waste Management Board, now administered by the California Department of Resources Recycling and Recovery (CalRecycle), has required all

jurisdictions to divert at least 50 percent of their waste from going directly to landfills (Public Resources Code §41780). The Riverside Countywide Integrated Waste Management Plan (CIWMP) outlines the goals, policies, and programs that the county and its cities will implement to create an integrated and cost-effective waste management system that complies with the provisions of AB 939 and its diversion mandates. The Riverside County Waste Management Department is specifically charged with the following responsibilities:

- Implementing programs that adhere to the goals, policies, and objectives outlined in the Source Reduction and Recycling Element of the county's General Plan that enable the unincorporated portion of Riverside County to achieve 50 percent diversion of solid waste from landfill disposal.
- Implementing programs that adhere to the goals, policies, and objectives outlined in the county's Household Hazardous Waste Element to reduce the amount of household hazardous waste that is disposed of within landfills.
- Meeting the solid waste disposal needs of all Riverside County residents.
- Maintaining and updating the CIWMP and reporting to CalRecycle on the county's progress in complying with AB 939.

Riverside Countywide Construction and Demolition Debris Ordinance

Riverside County Ordinance No. 657 establishes regulations for the collection, transfer, and removal of solid waste for construction and demolition (C&D) projects within Riverside County. This ordinance requires permit applicants working C&D projects within unincorporated areas of the county to practice waste prevention; reuse, recycle, or salvage; and landfilling solid wastes. (County of Riverside, 2017).

City of Chino

The City of Chino adopted Ordinance No. 2012-19, which requires that construction and demolition materials being diverted to recycle or salvage in the City of Chino must increase from 50 percent to 65 percent in accordance with the Integrated Waste Management Act of 1989.

City of Corona General Plan

The following policies from the Infrastructure and Utilities Element of the City of Corona's General Plan pertain to utilities and service systems:

> *Policy 7.7.1:* Ensure that new development does not degrade surface waters or the groundwater system;
>
> *Policy 7.12.3:* Continue to provide for the undergrounding of new and existing electrical distribution lines unless it is determined not to be economically or practically feasible as a result of significant environmental or other constraints;
>
> *Policy 7.13.2:* Provide for the continued development and expansion of telecommunications systems including cable and, as feasible, fiber optics, for access of data and information, and communication purposes;
>
> *Policy 7.13.4:* Promote the extension of the regional fiber optic network into the City; and

Policy 7.8.1: Provide an adequate and orderly system for collection and disposal of solid waste for new and existing development in the City and Sphere of Influence.

City of Eastvale General Plan

The following policies from the Land Use, Circulation and Infrastructure, and Design elements of the City of Eastvale General Plan pertain to utilities and service systems:

Policy C-29: Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.

Policy DE-16: The City will seek to reduce the unsightly appearance of overhead and aboveground utilities by placing them underground as new development occurs.

Policy AQ-32: Utilize source reduction, recycling, and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

4.18.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant effects related to utilities and service systems if it would:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects;

d) Not have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;

e) Result in a determination by the wastewater treatment provider that would serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

f) Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs; or

g) Not comply with federal, state, and local statutes and regulations related to solid waste.

4.18.3 Applicant Proposed Measures

Southern California Edison (SCE) has not identified any application proposed measures to reduce impacts to utilities and service systems that would be associated with the construction, operation, and/or maintenance of the Project.

4.18.4 Impacts and Mitigation Measures

4.18.4.1 Approach to Analysis

This section presents an analysis of the impacts to utilities and service systems that would be associated with the construction, operation, and maintenance of the Project.

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Impact 4.18-1: The Project would result in wastewater that would need to be treated per the requirements of the Santa Ana Regional Water Quality Control Board (RWQCB). *Less than significant* (Class III)

Construction

The Project would not exceed any wastewater treatment requirements of Santa Ana Regional Water Quality Control Board (RWQCB). During construction, portable toilets would be provided for crews. Construction activities would be temporary, lasting approximately 18 months, and peak construction would employ a maximum of 100 workers per day. The portable toilets would be maintained by a licensed provider in compliance with all applicable wastewater treatment requirements of the RWQCB. Wastewater would be ultimately discharged into a local wastewater treatment facility and treated in accordance with the standards set forth by each local jurisdiction, and in accordance with the RWQCB portable toilet treatment requirements. Additionally, no other wastewater would be generated by Project construction. Impacts, therefore, would be less than significant.

Operation and Maintenance

Project operation and maintenance would include personnel visits for routine and emergency inspections and to repair or maintain the infrastructure at the proposed Circle City Substation, and along the source lines and subtransmission line alignments. The frequency of inspection and maintenance activities would depend upon weather effects and any unique problems that may arise due to such variables as substantial storm damage or vandalism. The operational activities along the Project alignments would be similar in scope to the existing operational activities taking place at these locations for other infrastructure, and the volume of wastewater discharged from proposed operational activities would not increase relative to current discharge volumes. See also discussion e), below.

The proposed substation would include a permanent restroom installed within the substation perimeter. SCE would apply to the City of Corona for sewer and water service. The substation would be automated and monitored from the existing Mira Loma Substation; no SCE employees would be stationed at the site. Maintenance crews would visit the proposed substation three to four times a month, resulting in no more than eight uses per month. A standard low-flow toilet would draw 1.6 gallons of water and discharge it as wastewater for each use, resulting in approximately 150 gallons of wastewater per year. Approximately 1 gallon of water would be required for each use of the restroom sink, resulting in a total of 2.6 gallons of water drawn for each use, or approximately 300 gallons per year.

Approximately 100 gallons per year of deionized water from the existing Mira Loma Substation is used to wash existing SCE power line infrastructure. A similar quantity would also be sufficient for washing new insulators and conductors associated with Circle City Substation. Therefore, the Project would not generate large volumes of wastewater to be sent to a treatment facility or that would exceed treatment requirements set forth by the SARWQCB. As a result, impacts would be less than significant.

Mitigation: None required.

---

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (No Impact)

Construction

As previously described, portable toilets would be provided for crew members during construction of the Project. This wastewater would be disposed of off-site in compliance with applicable standards and would not require new facilities or the expansion of existing facilities. Approximately 107 acre-feet of water would be required during the 18-month construction period primarily for dust control and cleanup, but also for crew member consumption and hand washing. This water use would be temporary in nature and would not generate wastewater that would require treatment or disposal. Water used for dust suppression would evaporate or be absorbed by the soil and therefore would not create any demand for wastewater treatment. There would be no need for the construction or expansion of new water or wastewater treatment facilities. There would be no impact.

Operation and Maintenance

As described under Impact 4.18-1, the Project would include a stand-alone, permanent restroom located within the proposed Circle City Substation that would use approximately 300 gallons per year. Approximately 100 gallons per year of deionized water would be used for washing new insulators and conductors associated with Circle City Substation. SCE would apply for service for the restroom from the City of Corona's Department of Water and Power. Because the Project would not draw large volumes of water or discharge large volumes of wastewater, there would be no need for the expansion of new water or wastewater treatment facilities. There would be no impact.

---

c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact 4.18-2: The Project would require the construction of new storm water drainage facilities, or expansion of existing facilities. *Less than significant* (Class III)

As discussed in Section 4.10, *Hydrology and Water Quality*, the Project would not result in a significant increase in impermeable surfaces that would increase storm water discharge from the

Project. Section 4.10 also provides discussion of drainage patterns and flooding. If required by the City of Corona, an approximately 700-foot extension of the existing storm drain system may be constructed to direct flows toward new drainage swales that would be located around the substation perimeter. Water would then discharge onto Leeson Lane. In addition, a standard catch basin would be installed in the Leeson Lane right-of-way. An alternative to these surface swales would include the installation of an approximately 1,300-foot-long buried drain pipe through the eastern access corridor. While construction of new storm water drainage facilities would be unnecessary, due to the minimal increase in impermeable surfaces that would occur as a result of the Project, this extension is a minor change that would improve the drainage from the site and would further reduce already less-than-significant impacts under criterion c. Staging yards and work areas would be graded such that water would run toward the direction of natural drainage. Access road maintenance would include repair, replacement, and installation of storm water diversion devices on an as-needed basis.

SCE would also be required to obtain coverage under the SWRCB General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ. In order to obtain coverage under the permit, SCE would develop and provide a Storm Water Pollution Prevention Plan (SWPPP) to the SWRCB prior to initiating construction activities, which is described in the Regulatory Setting, above, and in Section 4.10, *Hydrology and Water Quality*. In conjunction with the SWPPP, appropriate best management practices (BMPs) (e.g., the installation of silt fencing and covering of spoil piles) would be developed to minimize impacts associated with storm water runoff. Examples of stormwater management work include cleaning ditches, moving and establishing berms, clearing and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Preparation of the SWPPP is required by SWRCB as part of the Project, and would then be implemented and monitored throughout the Project by a Qualified SWPPP Practitioner. As a result, the implementation of the SWPPP would reduce the impact to a less-than-significant level.

Mitigation: None required.

---

d) Require new or expanded water supply resources or entitlements.

Impact 4.18-3: The Project would require the use of municipal water supplies but would not require new or expanded water supply resources or entitlements. *Less than significant* (Class III)

Construction

SCE estimates that approximately 107 acre-feet of water would be drawn from local sources (cities of Corona, Eastvale, Norco, Chino, and Ontario) and be used during construction. Prior to construction, SCE would submit applications for temporary fire hydrant meters to connect to local fire hydrants to draw water for temporary construction needs for the other Project components described in the Project Description. The primary use of water during construction would be for dust suppression on access roads and active work sites.

During construction of the Circle City Substation, a single-source hydrant meter would be established and a stand tank would be delivered to the site for water storage. As previously discussed, the Project would draw approximately 107 acre-feet of water from local sources primarily for dust control and cleanup, but also for crew member consumption and hand washing for the 18-month construction period. This equates to approximately 96,000 gallons per day of water, assuming a 5-day work week consistently over an 18-month construction period.

As described in Section 4.10, *Hydrology and Water Quality*, groundwater could be encountered during construction at the Project sites and in areas along the proposed alignments. Groundwater encountered would be pumped and dispersed onsite or disposed of at an off-site disposal facility, in accordance with applicable laws. Dispersion of pumped groundwater onto these sediments near construction sites would effectively replace the groundwater removed, ensuring that construction activities would not deplete groundwater supplies. Restroom facilities would be portable and would not draw from local supplies.

Water supply sources for the jurisdictions in which the Project would be constructed are described in the Regulatory Setting, including local groundwater, local surface water, and finally, water imported from the state water project. Water supply use would be relatively minor, and would be acquired from various distributing jurisdictions. Water use would not threaten any of these sources' supply, because it would be acquired from several, reducing the per-jurisdiction requirement to a very minor quantity.

Between the five jurisdictions (cities of Corona, Eastvale, Norco, Chino, and Ontario) that would distribute water for the Project, the total water supply available would exceed 40,000 acre-feet per year. Of this, the proposed Project would require 107 acre-feet over an 18-month construction period, or 71 acre-feet per year. This water use would represent a maximum of 0.17 percent of the overall supply, a small fraction that could be easily accommodated, and much of which would percolate back into the groundwater basin as described above. Therefore, the Project would not draw a significant volume of water, and available water supplies would be more than sufficient to serve the Project's limited demand. Additional discussion of water resources in the Project area is included in Section 4.10, *Hydrology and Water Quality*.

Operation and Maintenance

Operation and maintenance of the Project would require the use of water for washing of the insulators to prevent the buildup of contaminants such as dust, salts, droppings, and condensation, and reduce the possibility of electrical arcing that would result in circuit outages and potential fire. The frequency of insulator washing would be based on local conditions and build-up of contaminants. As previously discussed, SCE would apply for water service from the City of Corona's Department of Water and Power to accommodate the proposed restroom. It is expected that no more than 400 gallons of water would be required annually for the restroom, and approximately 100 gallons of deionized water from the existing Mira Loma Substation would be required for cleaning of equipment. Annually, the City of Corona supplies 14 billion gallons of water to its consumers. The proposed restroom would represent less than 0.001 percent of the total water supply available. Therefore, there would not be a need for any new or expanded

entitlements, resources, or facilities to accommodate this demand. As a result, impacts would be less than significant.

Mitigation: None required.

---

e) Result in a determination by the wastewater treatment provider that would serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (No Impact)

Construction

As described under criterion d), the primary use of water during construction would be associated with dust suppression. Water disposal would not be required because the water used during dust suppression activities would be minimal and would evaporate or be absorbed into the ground. In addition, construction crews would use portable sanitation facilities (portable toilets), generating relatively small volumes of wastewater for a limited time during the construction phase. Sanitation waste would be disposed of according to sanitation waste management practices. No other sources of wastewater are anticipated during the Project construction. There would be no impact.

Operation and Maintenance

Wastewater generated by the Project's restroom facilities would be transferred through connecting underground infrastructure to the City of Corona's Water Reclamation Division and, if additional capacity is needed, generate more than 150 gallons of wastewater per year, or 0.42 gallons per day. Existing waste water treatment facilities that would serve the Project have a combined capacity of over 20 million gallons per day, and could accommodate the production volume of the restroom. The construction and operation water usage of the Project would not affect the ability of wastewater treatment facilities to fulfill existing commitments. There would be no impact.

---

f) Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.

Impact 4.18-4: The Project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. *Less than significant* (Class III)

Construction

Construction would generate various waste materials, including wood, metal, soil, vegetation, and miscellaneous construction materials. This impact would be of short duration, lasting approximately 24 months (i.e., 18 months of construction and approximately 6 months of additional site clean-up.) As described in Chapter 2, *Project Description*, the Project would require the removal and disposal of the existing wood poles, tubular steel poles, lightweight steel poles, and H-frame hybrid poles once the subtransmission, distribution, and telecommunication lines are transferred to the new poles.

In general, soil and vegetative material excavated for the Project would be used as fill, backfill, made available for use by the landowner, reused, or disposed of off-site in accordance with applicable requirements. Soils and vegetative matter unsuitable for backfill use would be disposed of at appropriate disposal sites. Construction of the tubular steel pole foundations would result in the displacement of mud slurry. Depending on site conditions, the mud slurry brought to the surface would be collected in a pit adjacent to the foundation or vacuumed into a truck and then pumped out to be reused or discarded at an appropriate off-site disposal facility. The Project would also include new underground 66 kV subtransmission line conduits and associated transition and support structures. Approximately 22,400 cubic yards of material would be removed from the trenches needed to accommodate the underground line conduits. Approximately one-third of excavated materials would be reused as fill for the Project, and the remainder would be disposed of in one of the eight off-site disposal facilities with capacity to accept disposal material, as listed in Table 4.18-1, in accordance with applicable laws. In the case that horizontal boring would be used instead of an open-cut trenching method, excess soil material would also be hauled off-site and disposed of an approved disposal facility.

Solid waste from the Project would be separated by construction crews at the Project site into salvageable, recyclable, and non-reusable items. Items that could be recycled and salvaged (including conductor wire, steel from towers, and hardware) would be transported to staging areas. The existing wood poles removed for the Project sites would be returned to the staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a municipal landfill that the RWQCB has approved for the disposal of treated wood waste. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Material Safety Data Sheets (MSDS) would be made available at the construction site for all crew members. Other miscellaneous non-hazardous construction materials that cannot be reused or recycled would be disposed of at El Sobrante Landfill, Frank R. Bowerman Sanitary Landfill, West Valley Material Recovery Facility/Transfer Station, Olinda Alpha Sanitary Landfill, Valley Landfill, Badlands Sanitary Landfill, and/or Buttonwillow Landfill. Any hazardous materials would be recycled, treated, and/or disposed of in accordance with federal, state, and local laws. Impacts related to the removal and disposal of treated wood and construction materials would be less than significant (see Section 4.9, *Hazards and Hazardous Materials*, for additional information).

Overall, the amount of waste the Project would produce would be minor relative to the remaining permitted capacities of each of the possible disposal facilities shown in Table 4.18-1 that could be used by the Project. Furthermore, each of the landfills listed in Table 4.18-1 has a permitted capacity to operate during and well past the construction period. The impact would be less than significant.

Operation and Maintenance

The operation and maintenance of the Project would generate negligible waste. Operation and maintenance would not significantly differ from existing conditions, and would generate a relatively small amount of waste. Impacts would be less than significant.

Mitigation: None required.

---

g) Comply with federal, state, and local statutes and regulations related to solid waste. (No Impact)

As discussed under Impact 4.18-4, the proposed Project would generate waste during construction and no waste during operation and maintenance. Construction waste would include disposal of a limited amount of materials that would be recycled or reused as much as possible. The remainder would be disposed at one of the eight landfills listed in Table 4.18-1, above. Each of these landfills has sufficient capacity to accept anticipated proposed Project construction and demolition materials.

Project construction would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (e.g., from portable toilets). The Project would comply with the California Integrated Waste Management Act and the relevant locally-applicable laws, including the Riverside Countywide Construction and Demolition Debris Ordinance. Thus, the proposed Project would not result in impacts related to conflict with statutes or regulations related to solid waste and recycling (No Impact).

4.18.5 Alternatives

4.18.5.1 Alternative A: No Project Alternative

Under the No Project Alternative, no new facilities would be constructed, and existing facilities would not be altered, replaced, or installed. Implementation of this alternative would have no effect on utilities and service systems (No Impact).

4.18.5.2 Subtransmission Service Objectives Alternatives

The proposed Mira Loma-Jefferson 66 kV subtransmission line is shown on **Figure 2-6** in Chapter 2, *Project Description*. Alternatives C1 and C2 are shown on **Figure 3-2a** and Alternative C3 is shown on **Figure 3-2b**, in Chapter 3, *Project Alternatives.*

Alternative B: Mira Loma-Jefferson 66 kV Subtransmission Line Without Substation

Construction, operation, and maintenance of Alternative B would have reduced water, wastewater, storm water, and solid waste effects compared to the proposed Project because the substation and source lines would not be constructed. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue

Construction, operation, and maintenance of Alternative C1 would have similar water, wastewater, and storm water effects as the proposed Project because it would not substantially change the scope or type of facilities that would be constructed. This alternative would generate more excavated soil compared to the Project as it would include construction of an additional 0.5 mile of underground line. However, existing landfills have adequate permitted capacity to accept this waste; therefore, overall impacts to utilities and service systems would be the same as the Project. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative C2: 66 kV Subtransmission Line along Archibald Avenue

Construction, operation, and maintenance of Alternative C2 would have similar water, wastewater, and storm water effects as the proposed Project because it would not substantially change the scope or type of facilities that would be constructed. This alternative would generate more excavated soil compared to the Project as it would include construction of an additional 1.2 miles of underground line. However, existing landfills have adequate permitted capacity to accept this waste. The overall length of Alternative C2 would be approximately 1.5 miles shorter than the proposed Project; therefore, it would likely generate less construction debris. Overall impacts to utilities and service systems would be the same as the Project. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative C3: 66 kV Subtransmission-Level Battery Storage

Construction, operation, and maintenance of Alternative C3 would have increased water, wastewater, solid waste, and storm water effects compared to the proposed Project because although the length of the Alternative C3 66 kV subtransmission lines would be less than the Mira Loma-Jefferson 66 kV subtransmission line that would not be constructed, the three battery storage and substation facilities under this alternative would each result in additional long-term effects similar to that of the proposed Circle City Substation. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

4.18.5.3 Distribution Service Objectives Alternatives

The proposed Pedley and Databank 66 kV source lines and the proposed Circle City Substation are shown on **Figure 2-5**, in Chapter 2, *Project Description*. Alternative D1 is shown on **Figures 3-3** and **3-4** and Alternatives D2, E1, E2, E3, and E4 are shown on **Figure 3-6** in Chapter 3, *Project Alternatives.*

Alternative D1: 12 kV Distribution-Level Battery Storage

Construction, operation, and maintenance of Alternative D1 would have reduced water, wastewater, storm water, and solid waste effects compared to the proposed Project due to the reduced size of the battery storage facility site compared to the proposed Circle City Substation site. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative D2: 66/12 kV Substation Site Alternative

Construction, operation, and maintenance of Alternative D2 would have similar water, wastewater, storm water, and solid waste effects as the proposed Project due to its size and proximity to the proposed Circle City Substation site. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative E1: Quarry Street 66 kV Source Line Segment

Construction, operation, and maintenance of Alternative E1 would have similar water, wastewater, and storm water effects as the proposed Project because it would not substantially change the scope or type of facilities that would be constructed. This alternative could generate more construction debris and excavated soil compared to the Project as it would be approximately 300 feet longer and would include construction of an additional 800 feet of underground line conduit. However, existing landfills have adequate permitted capacity to accept this waste; therefore, overall impacts to utilities and service systems would be the same as the Project. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation

Construction, operation, and maintenance of Alternative E2 would have similar water, wastewater, and storm water effects as the proposed Project because it would not substantially change the scope or type of facilities that would be constructed. This alternative would generate more excavated soil compared to the Project as it would include construction of an additional 1.5 miles of underground line. However, existing landfills have adequate permitted capacity to accept this waste; therefore, overall impacts to utilities and service systems would be the same as the Project. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative E3: Southern 66 kV Source Lines Alignment

Construction, operation, and maintenance of Alternative E3 would have similar water, wastewater, and storm water effects as the proposed Project because it would not substantially change the scope or type of facilities that would be constructed. This alternative would result in a reduced volume of excavated soil as it would be constructed entirely overhead, compared to approximately 2,500 feet of underground line for the proposed Project. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

Alternative E4: Databank 66 kV Source Lines Only

Construction, operation, and maintenance of Alternative E4 would have reduced water, wastewater, and storm water effects compared to the proposed Project because the Pedley Source Lines would not be constructed under Alternative E4. Impacts would be less than significant (Impacts 4.18-1 through 4.18-4; Class III).

References – Utilities and Service Systems

Burrtec, 2016. Landfill/Transfer. Available online at www.burrtec.com/landfill. Accessed June 9, 2016.

California Department of Resources Recycling and Recovery (CalRecycle), 2016a. Available online at www.calrecycle.ca.gov/Government/default.htm, Accessed June 9, 2016.

CalRecycle 2016b. Jurisdiction Diversion/Disposal Rate Summary (1995-2006). Available online at www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversion.aspx. Accessed June 14, 2016.

CalRecycle 2016c. Jurisdiction Diversion/Disposal Rate Summary (2007-Current). Available online at www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/Jurisdiction Diversion.aspx. Accessed June 14, 2016.

Chino Basin Desalter Authority (CDA), 2017. CDA Official Website- About Us. Available online at http://www.chinodesalter.org/index.aspx?NID=8. Accessed April 26, 2017.

City of Chino, 2010. Envision Chino General Plan 2025. Available online at: www.cityofchino.org/government-services/community-development/general-plan. Accessed June 8, 2016.

City of Chino, 2016. Residential Curbside Refuse and Recycling. Available online at www.cityofchino.org/residents/green-chino/residential-curbside-refuse-and-recycling. Accessed June 9, 2016.

City of Corona, 2004. City of Corona General Plan. Available online at http://discovercorona.com/City-Departments/Community-Development/Planning-Division/FINAL-GP.aspx. Accessed June 9, 2016.

City of Corona, 2015a. Department of Water and Power, Consumer Confidence Report 2015 for the year 2014. Available online at: www.discovercoronadwp.com/pubs/CCR/2015-CCR.pdf. Accessed June 8, 2016.

City of Corona, 2015b. 2015 Urban Water Management Plan, Volume 1-Draft Report. May 2016.

City of Corona, 2016. Department of Water & Power. Quick Facts. Available online at www.discovercoronadwp.com/about/quick-facts.shtml. Accessed June 9, 2016.

City of Eastvale, 2016. Helpful Links and Phone Number. Available online at www.eastvaleca.gov/about-eastvale/helpful-links-phone-numbers. Accessed June 9, 2016.

City of Norco, 2015. Urban Water Management Plan 2015. Available online at www.ci.norco.ca.us/depts/pw/urban_water_management_plan.asp. Accessed June 8, 2016.

City of Norco, 2016. Residential Solid Waste and Recycling Program Information. Available online at: www.ci.norco.ca.us/documents/WM%20Cart%20Service%20Flyer%202015.pdf/ Accessed June 9, 2016.

City of Ontario, 2016. About the Water Utility. Available online at www.ontarioca.gov/municipal-utilities-company/utilities/about-water-utility. Accessed June 8, 2016.

County of Riverside, 2017. Ordinance No. 657 (as amended through 657.6). An ordinance of the County of Riverside Amending Ordinance No. 657 Regulating the collection, transfer, and removal of solid waste. Available online at http://www.rivcocob.org/ords/600/657.6.pdf. Accessed April 20, 2017.

Inland Empire Utilities Agency (IEUA), 2015. Inland Empire Utilities Agency 2015 Annual Report for Fiscal Year 2014-2015. Available online at www.ieua.org/2015-annual-report/. Accessed June 9, 2016.

IEUA, 2016. Facilities. Available online at www.ieua.org/facilities/. Accessed June 8, 2016.

Jurupa Community Services District (JCSD), 2016. Jurupa Community Services District webpage. Available online at www.jcsd.us/customers/about-your-water. Accessed June 8, 2016.

Metropolitan Water District of Southern California (MWD), 2017. Overview. Available online at http://www.mwdh2o.com/WhoWeAre/Mission/Pages/default.aspx. Accessed April 26, 2017.

San Bernardino County, 2006. Final Environmental Impact Report and Appendices. Available online at www.sbcounty.gov/Uploads/lus/GeneralPlan/FinalEIR2007.pdf. Accessed June 9, 2016.

San Bernardino County, 2016a. Department of Public Health, Division of Environmental Health Services. Wastewater. Available online at http://specialdistricts.org/index.aspx?page=66. Accessed June 9, 2016.

San Bernardino County, 2016b. Department of Public Health, Division of Environmental Health Services. Wastewater. Available online at www.sbcounty.gov/dph/dehs/Depts/EnvironmentalHealth/BusinessServices/wastewater.aspx. Accessed June 9, 2016.

Santa Ana Regional Water Quality Control Board, 2010. ORDER NO. R8-2010-0036NPDES NO. CAS618036. Available online at http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2010/10_036_SBC_MS4_Permit_01_29_10.pdf. Accessed April 19, 2017.

Theroux, Michael, 2012. *California AB 341 Legislative Analysis, New Diversion Law Modifies California's Integrated Waste Management Act*. June 2012.

Western Municipal Water District (WMWD), 2016. Wastewater. Available online at www.wmwd.com/178/Wastewater. Accessed June 9, 2016.

This page intentionally left blank

CHAPTER 5
Comparison of Alternatives

This section summarizes and compares the environmental advantages and disadvantages of the proposed Project and the alternatives evaluated in this EIR. This comparison is based on the assessment of environmental impacts of the Project and each alternative, as identified in Sections 4.1, *Aesthetics,* through 4.18, *Utilities and Service Systems*. Chapter 2, *Project Description*, introduces and describes the proposed Project. Chapter 3, *Project Alternatives*, introduces and describes the alternatives considered in this EIR.

Section 5.1 describes the methodology used for comparing alternatives. Section 5.2 summarizes the environmental impacts of the Project and alternatives. Section 5.3 defines the Environmentally Superior Alternative, based on comparison of each alternative with the Project.

5.1 Comparison Methodology

CEQA does not provide specific direction regarding the methodology of alternatives comparison. Each project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting. Issue areas that are generally given more weight in comparing alternatives are those with long-term impacts (e.g., visual impacts and permanent loss of habitat or land use conflicts). Impacts associated with construction (i.e., temporary or short-term) or those that are easily mitigable to less-than-significant levels are generally considered to be less important.

This comparison is designed to satisfy the requirements of CEQA Guidelines Section 15126.6(d), Evaluation of Alternatives, which states that:

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

If the Environmentally Superior Alternative is the No Project Alternative, CEQA requires identification of an Environmentally Superior Alternative among the other alternatives (CEQA Guidelines §15126.6[e][2]).

The following methodology was used to compare alternatives in this EIR:

Step 1: Identification of Alternatives. An alternatives screening process (described in Chapter 3, *Project Alternatives*) was used to evaluate alternatives to the Project. That screening process identified four alternatives to meet the Subtransmission Service Objective and six alternatives to meet the Distribution Service Objective. A No Project Alternative was also identified. No other feasible alternatives were identified that would lessen or alleviate significant environmental impacts while meeting the basic Project objectives.

Step 2: Determination of Environmental Impacts. The environmental impacts of the Project and alternatives are identified in Sections 4.1, *Aesthetics* through 4.18, *Utilities and Service Systems*, including the potential impacts of construction, operation, and maintenance.

Step 3: Comparison of the Project with Alternatives. The environmental impacts of the Project were compared to those of each alternative to determine the Environmentally Superior Alternative. The Environmentally Superior Alternative was then compared to the No Project Alternative.

The CPUC may consider various combinations of the Subtransmission Service Objective alternatives and Distribution Service Objective alternatives when deciding whether or not to approve the proposed Project or one or more of the alternatives to address the identified objectives. Although this EIR identifies an Environmentally Superior Alternative for the Subtransmission Service Objective and for the Distribution Service Objective, it is possible that the CPUC could choose to balance the relative importance of each impact area differently and reach a different conclusion during the project approval process. Therefore, the CPUC may approve a project that is not the Environmentally Superior Alternative.

5.2 Evaluation of Project Alternatives

This section compares the potential environmental impacts of the proposed Project with the environmental impacts of the 10 Project alternatives. A detailed analysis of environmental impacts and mitigation for the alternatives is provided in Sections 4.1 through 4.18.

Upon consideration of the Applicant's objectives, electrical demand projections, and other laws and regulations, this EIR identifies the following as the CPUC's basic CEQA objectives:

- **Subtransmission Service Objective.** Maintain electrical system reliability by addressing overloads on the Mira Loma-Corona-Jefferson and Mira Loma-Corona 66 kV subtransmission lines that could occur under peak electrical demand conditions during the 2017 to 2026 forecast period; and

- **Distribution Service Objective.** Maintain electrical system reliability by ensuring ~~Ensure~~ that the Corona, Jefferson, and Chase substations do not exceed their combined capacity under peak electrical demand conditions through the 2017 to 2026 forecast period.

The CPUC considers these two CEQA objectives to be the underlying purpose for the proposed Project. Under the proposed Project, the Subtransmission Service Objective would be addressed

by constructing the proposed Mira Loma-Jefferson subtransmission line and associated facilities; and the Distribution Service Objective would be addressed by the construction of the Circle City Substation, its source lines, and other associated facilities. Each of the alternatives considered is designed to address at least one of these basic objectives. Therefore, each Project alternative would have to meet at least one of these two objectives in order to be considered a viable alternative to the proposed Project.

The Project would result in significant and unavoidable environmental effects on aesthetics, air quality, and noise. No other significant impacts of the Project have been identified that cannot be reduced with mitigation to a less-than-significant level. Based on the methodology described above, each potential alternative was evaluated for its ability to meet either the Subtransmission Service Objective (Alternatives B, C1, C2, and C3) or the Distribution Service Objective (Alternatives D1, D2, E1, E2, E3, and E4), its potential feasibility, and its ability to avoid or substantially lessen one or more of the significant effects of the Project without creating significant unmitigable impacts of its own. **Table 5-1**, *Summary of Significant Unavoidable (Class I) Environmental Impacts of the Project*, provides a summary of impacts by resource section. These are identified as Class I environmental impacts for analysis purposes. **Table 5-2** provides a comparison of potential impacts by alternative for each resource category. Table 5-2 divides the proposed Project and the alternatives by objective for ease of comparison; as noted in the table, the proposed Project components are divided in this table such that impact conclusions are provided for components satisfying the Subtransmission Service Objective (the Mira Loma-Jefferson 66 kV subtransmission line and associated facilities) and for those satisfying the Distribution Service Objective (the Circle City Substation, its source lines, and other associated facilities).

TABLE 5-1
SUMMARY OF SIGNIFICANT UNAVOIDABLE (CLASS I) ENVIRONMENTAL IMPACTS OF THE PROJECT

Issue Area	Impact
Aesthetics	• Adverse effects to scenic vistas resulting from the new subtransmission line and poles associated with the Subtransmission Service Objective and the new source lines and poles associated with the Distribution Service Objective. • Degradation of the existing visual character and quality resulting from the new subtransmission line and poles associated with the Subtransmission Service Objective and the new source lines and poles associated with the Distribution Service Objective.
Air Quality	• Construction activities would generate nitrogen oxides (NO_x) and fine particulate matter (PM_{10}) emissions that could contribute substantially to a violation of an air quality standard. • Construction activities would result in emissions of PM_{10} and NO_x that would be cumulatively considerable. • Construction activities would expose sensitive receptors to harmful pollutant concentrations of PM_{10}.
Noise	• Construction activities would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations.

This page intentionally left blank

TABLE 5-2
PROPOSED PROJECT VS. ALTERNATIVES
SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Impact	No Project (Alt A)	*Subtransmission Service Objective (Mira Loma-Jefferson 66 kV subtransmission line and associated facilities, or alternatives to these components)*					*Distribution Service Objective (Circle City Substation, its source lines, and other associated facilities, or alternatives to these components)*						
		Proposed Project[1]	Alternative B	Alternative C1	Alternative C2	Alternative C3	Proposed Project[2]	Alternative D1	Alternative D2	Alternative E1	Alternative E2	Alternative E3	Alternative E4
Section 4.1: Aesthetics													
Impact 4.1-1: The Project could adversely affect scenic vistas.	NI	SU	SU	LS	LS	SU ↑	SU	LS	SU	SU ↓	SU ↓	SU ↑	SU ↓
Impact 4.1-2: Construction of the Project could degrade the existing visual character or quality of the sites and their surroundings during the construction period.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.1-3: Operation of the Project could substantially degrade the existing visual character or quality of the site and its surroundings.	NI	SU	SU	LS	LS	SU ↑	SU	LS	SU	SU ↓	SU ↓	SU ↑	SU ↓
Impact 4.1-4: Construction and operation of the Project would create new sources of light and/or glare that could adversely affect day or nighttime views in the area.	NI	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Section 4.2: Agriculture and Forestry Resources													
Impact 4.2-1: The Project would convert Farmland to non-agricultural uses.	NI	LSM	LSM	LSM	LSM ↓	NI	NI	NI	NI	NI	NI	NI	NI
Section 4.3: Air Quality													
Impact 4.3-1: Construction activities would generate pollutant emissions that would conflict or obstruct implementation of the applicable air quality plan.	NI	SU	SU	SU ↑	SU	SU ↑	SU	SU ↓	SU	SU ↑	SU ↑	SU ↓	SU ↓
Impact 4.3-2: Construction activities would generate pollutant emissions that would contribute substantially to an existing or projected air quality violation.	NI	SU	SU	SU ↑	SU	SU ↑	SU	SU ↓	SU	SU ↑	SU ↑	SU ↓	SU ↓
Impact 4.3-3: Operation and maintenance activities would generate pollutant emissions that could contribute to an existing or projected air quality violation.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.3-4: Construction activities would result in emissions of PM10 and NOx that would be cumulatively considerable**.**	NI	SU	SU	SU ↑	SU	SU ↑	SU	SU ↓	SU	SU ↑	SU ↑	SU ↓	SU ↓
Impact 4.3-5: Operation and maintenance activities would result in emissions of criteria pollutants that would not be cumulatively considerable..	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.3-6: Construction activities would generate emissions of criteria pollutants and precursors, potentially exposing sensitive receptors to harmful pollutant concentrations.	NI	SU	SU	SU ↑	SU	SU ↑	SU	LS	SU	SU ↑	SU ↑	SU ↓	SU ↓
Impact 4.3-7: Construction activities would generate emissions of Toxic Air Contaminants, potentially exposing sensitive receptors to harmful pollutant concentrations.	NI	LS	LS	LSM ↑	LSM ↑	SU	LSM	LS	SU	LSM	LSM	LSM	LSM
Impact 4.3-8: Construction activities could expose local sensitive receptors to *Coccidioides immitis* spores.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↑	LSM	LS ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.3-9: Operation and maintenance activities would generate emissions of Toxic Air Contaminants but would not expose sensitive receptors to harmful pollutant concentrations.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.3-10: Construction and operation would not create objectionable odors.	NI	LS	LS	LS ↑	LS ↑	LS	LS	LS	LS	LS	LS	LS	LS

[1] The environmental impact conclusions in this column are specific to the proposed Mira Loma-Jefferson 66 kV subtransmission line and associated facilities under the proposed Project.
[2] The environmental impact conclusions in this column are specific to the proposed Circle City Substation, its source lines, and other associated facilities under the proposed Project.

TABLE 5-2 (CONTINUED)
PROPOSED PROJECT VS. ALTERNATIVES
SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Impact	No Project (Alt A)	*Subtransmission Service Objective (Mira Loma-Jefferson 66 kV subtransmission line and associated facilities, or alternatives to these components)*					*Distribution Service Objective (Circle City Substation, its source lines, and other associated facilities, or alternatives to these components)*						
		Proposed Project[1]	Alternative B	Alternative C1	Alternative C2	Alternative C3	Proposed Project[2]	Alternative D1	Alternative D2	Alternative E1	Alternative E2	Alternative E3	Alternative E4
Section 4.4: Biological Resources													
Impact 4.4-1: Construction activities would result in adverse impacts to special-status plants, if present.	NI	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LS	LSM	LSM	LSM	LSM
Impact 4.4-2: Construction activities would result in adverse impacts to special-status reptiles and amphibians, if present.	NI	LSM	LSM	LSM	LSM	LS	LSM	LS	LSM	LSM	LSM	LSM	LSM
Impact 4.4-3: Construction activities would result in adverse impacts to Riverside fairy shrimp and vernal pool fairy shrimp, if present.	NI	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Impact 4.4-4: Construction activities would result in adverse impacts to special-status fish, if present	NI	LSM	LSM	LSM	LSM ↑	LS	LS	LS	LS	LS	LS	LSM	LSM
Impact 4.4-5: Construction activities would result in adverse impacts to least Bell's vireo, Southwestern willow flycatcher, yellow-billed cuckoo, and their habitats.	NI	LSM	LSM	LSM	LSM	LS	LS	LS	LSM	LS	LS	LSM	LSM
Impact 4.4-6: Construction activities would result in adverse impacts to burrowing owl.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.4-7: Construction activities would result in adverse impacts to nesting birds and raptors protected under MBTA, BGEPA, and Fish and Game Code.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.4-8: Installation of power lines and poles would result in collisions and/or electrocution of birds, especially raptors.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.4-9: Construction activities would temporarily result in adverse impacts to sensitive natural communities, such as willow riparian forest, coastal sage scrub, and grassland.	NI	LSM	LSM	LSM	LSM ↑	LS	LSM	LS	LSM	LSM	LSM	LSM ↑	LSM
Impact 4.4-10: Construction activities would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the federal CWA, and the potential loss and degradation of wetland habitats protected under state regulations.	NI	LSM	LSM	LSM	LSM ↑	LS	LSM	LS	LSM	LSM	LSM	LSM ↑	LSM
Impact 4.4-11: The Project could interfere with the movement of a native wildlife species or with established native resident or migratory wildlife corridors.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.4-12: The Project activities would disturb special-status bats or maternity bat roosts, if present..	NI	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM
Impact 4.4-13: Project activities could require protected tree removal and/or trimming.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.4-14: The project could conflict with the Western Riverside MSHCP.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LSM ↑	LS
Section 4.5: Cultural Resources													
Impact 4.5-1: Implementation of the Project could cause a substantial adverse change in the significance of the Grand Boulevard Historic District.	NI	NI	NI	NI	NI	NI	LSM	NI	LSM	LSM	LSM	LSM	LS
Impact 4.5-2: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered historical resources.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.5-3: Implementation of the Project could cause a substantial adverse change in the significance of previously undiscovered archaeological resources.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.5-4: Project implementation could directly destroy a unique paleontological resource.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.5-5: Project construction could result in damage to previously unidentified human remains.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↑	LSM ↓	LSM ↓

TABLE 5-2 (CONTINUED)
PROPOSED PROJECT VS. ALTERNATIVES
SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Impact	No Project (Alt A)	*Subtransmission Service Objective (Mira Loma-Jefferson 66 kV subtransmission line and associated facilities, or alternatives to these components)*					*Distribution Service Objective (Circle City Substation, its source lines, and other associated facilities, or alternatives to these components)*						
		Proposed Project[1]	Alternative B	Alternative C1	Alternative C2	Alternative C3	Proposed Project[2]	Alternative D1	Alternative D2	Alternative E1	Alternative E2	Alternative E3	Alternative E4
Section 4.5: Cultural Resources (cont.)													
Impact 4.5-6: Implementation of the Project could cause a substantial adverse change in the significance of previously unknown tribal cultural resources.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Section 4.6: Energy Conservation													
Impact 4.6-1: Construction, operation, and maintenance would result in the consumption of energy.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↑	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Affect local and regional energy supplies to the point that additional capacity of those energy supplies would be required.	LS	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI
Adversely affect existing energy resources during operation.	LS	BI	LS	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI
Impact 4.6-2: Construction could adversely affect existing energy resources.	NI	LS	LS	LS ↑	LS ↑	LS ↑	LS	LS ↓	LS	LS ↑	LS ↑	LS ↓	LS ↓
Section 4.7: Geology and Soils													
Impact 4.7-1: Strong seismic ground shaking could damage Project structures exposing people to risks.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.7-2: The project would result in increased risk of substantial adverse effects involving liquefaction.	NI	LSM	LSM	LSM ↑	LSM ↓	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM	LSM ↓
Impact 4.7-3: The project could result in soil erosion or loss of topsoil.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↓	LSM	LSM ↓
Impact 4.7-4: Sections of the Project alignment would be located on soil that could become unstable as a result of the Project.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↓
Impact 4.7-5: Portions of the Project would be located on expansive soil, creating risks to life and property.	NI	LSM	LSM	LSM ↓	LSM ↑	LSM ↓	LSM	LSM ↓	LSM	LSM ↓	LSM ↓	LSM ↑	LSM ↓
Section 4.8: Greenhouse Gas Emissions													
Impact 4.8-1: The Project would generate GHG emissions.	NI	LS	LS	LS ↑	LS	LS ↑	LS	LS ↓	LS	LS ↑	LS ↑	LS ↓	LS ↓
Section 4.9: Hazards and Hazardous Materials													
Impact 4.9-1: Construction and operation and maintenance would require the use of hazardous materials that could pose a potential hazard to the public or the environment if improperly used or inadvertently released.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.9-2: Construction could release previously unidentified hazardous materials into the environment.	NI	LSM	LSM	LSM ↑	LSM ↑	LSM	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.9-3: Construction activities could release hazardous materials within the vicinity of an existing school.	NI	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	LSM	NI	LSM
Impact 4.9-4: Construction, operation, and maintenance of the Project could result in an aviation safety hazard for people residing or working in the project area.	NI	LSM	LSM	LSM ↓	LSM ↓	NI	NI	NI	NI	NI	NI	NI	NI
Impact 4.9-5: Construction of the Project could interfere with an emergency response or evacuation plan.	NI	LSM	LSM	LSM ↑	LSM	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓

TABLE 5-2 (CONTINUED)
PROPOSED PROJECT VS. ALTERNATIVES
SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Impact	No Project (Alt A)	*Subtransmission Service Objective (Mira Loma-Jefferson 66 kV subtransmission line and associated facilities, or alternatives to these components)*					*Distribution Service Objective (Circle City Substation, its source lines, and other associated facilities, or alternatives to these components)*						
		Proposed Project[1]	Alternative B	Alternative C1	Alternative C2	Alternative C3	Proposed Project[2]	Alternative D1	Alternative D2	Alternative E1	Alternative E2	Alternative E3	Alternative E4
Section 4.9: Hazards and Hazardous Materials (cont.)													
Impact 4.9-6: Construction could increase the probability of a wildfire.	NI	LSM	LSM	LSM	LSM ↓	LSM ↓	LSM	LSM ↓	LSM	LSM	LSM	LSM	LSM
Impact 4.9-7: Operation could increase the probability of a wildfire.	NI	LS	LS	LS ↓	LS ↓	LS	LS	LS ↓	LS	LS	LS	LS ↑	LS ↓
Impact 4.9-8: Induced currents associated with operation of the Project could generate perceivable currents or small electrical shocks.	NI	LSM	LSM	LSM ↓	LSM ↓	LSM ↓	LSM	LSM ↓	LSM	LSM	LSM	LSM ↑	LSM ↓
Section 4.10: Hydrology and Water Quality													
Impact 4.10-1: The Project would discharge stormwater and groundwater in compliance with water quality standards.	NI	LS	LS	LS ↑	LS ↑	LS	LS	LS ↓	LS	LS ↑	LS ↑	LS	LS ↓
Impact 4.10-2: The Project would result in discharge and use of groundwater.	NI	LS	LS	LS ↑	LS ↑	LS ↑	LS	LS ↓	LS	LS ↑	LS ↑	LS	LS ↓
Impact 4.10-3: The Project would temporarily alter drainage patterns, including in the Santa Ana River, and would permanently alter drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation.	NI	LS	LS	LS ↑	LS ↑	LS ↓	LS	LS ↓	LS	LS ↑	LS ↑	LS	LS ↓
Impact 4.10-4: The Project would alter existing drainage patterns in the vicinity of new access roads, improved access roads, and the Circle City Substation, which could result in flooding.	NI	LS	LS	LS ↑	LS	LS	LS	LS	LS	LS ↑	LS ↑	LS	LS ↓
Impact 4.10-5: The Project would place structures within the 100-year flood hazard area.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS ↓
Impact 4.10-6: The Project could expose construction workers to flooding in the event of dam failure.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS ↓
Impact 4.10-7: The Project could expose workers to potential mudflows in the case of dam failure.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS ↓
Section 4.12: Mineral Resources													
Impact 4.12-1: The Project would install structures within an area where significant mineral deposits have been mapped by the state.	NI	LS	LS	LS ↑	LS	LS	LS	LS ↓	LS	LS ↑	LS ↑	LS ↓	LS ↓
Impact 4.12-2: The Project could result in the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans.	NI	LS	LS	LS ↑	LS	LS	LS	LS ↓	LS	LS ↑	LS ↑	LS ↑	LS ↓
Section 4.13: Noise													
Impact 4.13-1: Operation and maintenance-related noise levels would contribute to ambient noise levels.	NI	LS	LS	LS ↓	LS ↑	LSM	LS	LS ↓	LSM	LS ↓	LS ↓	LS ↑	LS ↓
Impact 4.13-2: Construction of the Project would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations.	NI	SU	SU	SU	SU ↑	SU ↑	SU	SU	SU ↑	SU	SU	SU ↑	SU ↓
Section 4.14: Population and Housing													
Impact 4.14-1: Construction could indirectly induce population growth.	NI	LS	LS	LS ↑	LS ↑	LS ↑	LS	LS ↓	LS	LS ↑	LS ↑	LS	LS ↓

TABLE 5-2 (CONTINUED)
PROPOSED PROJECT VS. ALTERNATIVES
SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Impact	No Project (Alt A)	*Subtransmission Service Objective (Mira Loma-Jefferson 66 kV subtransmission line and associated facilities, or alternatives to these components)*					*Distribution Service Objective (Circle City Substation, its source lines, and other associated facilities, or alternatives to these components)*						
		Proposed Project[1]	Alternative B	Alternative C1	Alternative C2	Alternative C3	Proposed Project[2]	Alternative D1	Alternative D2	Alternative E1	Alternative E2	Alternative E3	Alternative E4
Section 4.16: Recreation													
Impact 4.16-1: Construction and operation of the Project would increase the use of existing parks and recreational facilities.	NI	LS	LS	LS ↑	LS	LS ↓	LS	LS	LS	LS ↑	LS	LS	LS
Section 4.17: Transportation and Traffic													
Impact 4.17-1: Construction could adversely affect traffic and transportation conditions.	NI	LSM	LSM	LSM ↑	LSM	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.17-2: Project operation and maintenance could adversely affect traffic and transportation conditions.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.17-3: Operation and maintenance could cause conflict with level-of-service standards.	NI	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
Impact 4.17-4: Changes in air traffic patterns and increased air traffic levels could result in safety risks.	NI	LSM	LSM	LSM ↓	LSM ↓	LSM	NI	NI	NI	NI	NI	NI	NI
Impact 4.17-5: Traffic safety hazards could increase for vehicles, bicyclists, and pedestrians on public roadways.	NI	LSM	LSM	LSM ↑	LSM	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.17-6: Construction activities could result in delays for emergency vehicles on roadways in the area.	NI	LSM	LSM	LSM ↑	LSM	LSM ↓	LSM	LSM ↓	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Impact 4.17-7: Alternative modes of transportation (public transit, bicycle or pedestrian) could be adversely affected during construction.	NI	LSM	LSM ↓	LSM ↑	LSM	LSM ↓	LSM	LSM	LSM	LSM ↑	LSM ↑	LSM ↓	LSM ↓
Section 4.18: Utilities and Service Systems													
Impact 4.18-1: The Project would result in wastewater that would need to be treated per the requirements of the Santa Ana Regional Water Quality Control Board (RWQCB).	NI	LS	LS	LS	LS	LS ↑	LS	LS ↓	LS	LS	LS	LS	LS ↓
Impact 4.18-2: The Project would require the construction of new storm water drainage facilities, or expansion of existing facilities.	NI	LS	LS	LS	LS	LS ↑	LS	LS ↓	LS	LS	LS	LS	LS ↓
Impact 4.18-3: The Project would require the use of municipal water supplies but would not require new or expanded water supply resources or entitlements.	NI	LS	LS	LS	LS	LS ↑	LS	LS ↓	LS	LS	LS	LS	LS ↓
Impact 4.18-4: The Project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	NI	LS	LS	LS ↑	LS ↑	LS ↑	LS	LS ↓	LS	LS ↑	LS ↑	LS ↓	LS ↓

SYMBOL NOTES:

NI = No Impact (Class VI);
LS = Less than Significant impact, no mitigation recommended (Class III);
LSM = Less than Significant impact with mitigation (Class II);
SU = Significant and Unavoidable impact, even with implementation of mitigation (Class I);
BI = Beneficial Impact;
↑ = Same impact class as Project, but increased severity; and
↓ = Same impact class as Project, but decreased severity of impact (compared to proposed Project).

This page intentionally left blank

5.3 Comparison of Alternatives

As discussed in the previous section, the proposed Project would have significant and unavoidable impacts on aesthetics, air quality, and noise. The selection of an Environmentally Superior Alternative is based on differences in intensity and duration of significant impacts (see Table 5-2).

The No Project Alternative (Alternative A) is described in Section 3.4.1. Alternative A would not result in any significant and unavoidable impacts, and would therefore be the Environmentally Superior Alternative. Under Alternative A, the Project would not be constructed and would therefore have no environmental impacts related to Project construction and maintenance. However, Alternative A would fail to meet the Distribution Service Objective and as a result, the Electrical Needs Area (ENA) would potentially experience a shortage of electricity and the electrical distribution system could become vulnerable to upset starting year 2024. The distribution system would experience system-wide power flow and reliability problems due to overloading as new demand is added. This could result in curtailed generation, thermal overload, and blackouts. Alternative A would also fail to meet the Subtransmission Service Objective by failing to increase the capacity of the subtransmission delivery infrastructure, which could result in the operating limit of the Mira Loma-Corona-Jefferson Subtransmission Line to be exceeded during an N-1 outage to the Mira Loma-Cleargen-Delgen subtransmission lines in 2018 under peak electrical demand conditions and abnormal system configurations, and could result in the operating limit of the Mira Loma-Corona Subtransmission Line to be exceeded in 2020 under normal peak electrical demand conditions.

Under the rules, guidelines, and regulations of the CPUC, Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, and the Western Electricity Coordinating Council, electrical systems must have sufficient capacity to maintain safe, reliable, and adequate service to customers under normal conditions (i.e., when all facilities are in service) as well as abnormal conditions (e.g., conditions resulting from line or equipment failures, scheduled or unscheduled (emergency) maintenance events). Without the Project, SCE could not provide for the long-term capacity, reliability, and system operational flexibility needs of the ENA in accordance with applicable law, creating the potential for increased incidence of extended outages in the future. Such disruptions to electric service could result in indirect impacts to the provision of public services.

CEQA Guidelines Section 15126(e)(2) requires that if the Environmentally Superior Alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. As discussed in Chapter 3, *Project Alternatives*, the EIR team evaluated alternatives to the proposed Project that could feasibly accomplish most of the basic objectives of the proposed Project and could avoid or substantially lessen one or more of the significant effects (CEQA Guidelines §15126.6(c)).

As described above, CPUC may consider various combinations of the alternatives when deciding whether or not to approve the proposed Project or one or more of the alternatives to address the identified objectives. **Figure 3-1**, *Project Alternative Options*, provides an illustration of the various project alternatives relative to the Project objectives. The summaries below address only

the components associated with the specified alternative. For example, Alternative C1 is described below as avoiding a significant aesthetic impact along Hellmann Avenue. However, if Alternative C1 is paired with the proposed source lines, this combination would still result in significant and unavoidable aesthetic impacts associated with the proposed source lines.

Resource categories where environmental impacts would either be materially lessened or increased with implementation of a Project alternative are discussed below for each service objective.

5.3.1 Subtransmission Service Objective

Project alternatives designed to address the Subtransmission Service Objective include Alternatives B, C1, C2, and C3. The aesthetics, air quality, and noise effects these alternatives would have relative to the proposed Mira Loma-Jefferson subtransmission line and associated facilities are discussed below.

- **Aesthetics** – Impacts would be significant and unavoidable for effects on scenic vistas and visual character/quality for the proposed Project, Alternative B, and Alternative C3. Alternatives C1 and C2 would reduce the significant effects on scenic vistas and visual character/quality along Hellman Avenue, and after Alternative B, Alternative C1 would have the next least impacts on aesthetics out of the other Subtransmission Service Objective alternatives. The significant aesthetics impacts would be long-term, and therefore are weighted more heavily in the comparison of alternatives than temporary construction-related impacts on air quality and noise.
- **Air Quality** – Short-term impacts would be significant and unavoidable during construction for the proposed Project and each of the alternatives from generation of pollutant emissions that would conflict with an air quality plan; emissions that would contribute substantially to an existing air quality violation; emissions of PM_{10} and NO_x that would be cumulatively considerable; and emissions of criteria pollutants and precursors that could expose sensitive receptors to harmful pollutant concentrations. However, only Alternative C3 would result in a significant cancer risk impact associated with diesel particulate matter (DPM) that would be emitted during construction. The proposed Project and Alternative B would have the least impact on air quality.
- **Noise** – Impacts would be significant and unavoidable during construction for the proposed Project and all alternatives from the temporary increase in ambient noise levels at sensitive receptor locations. Alternatives C2 and C3 would have greater short-term effects than the proposed Project while Alternative B would have the same effects. The proposed Project, Alternative B, or Alternative C1 would have the least impacts associated with noise. Alternative C3 would have the greatest effects of all the Subtransmission Service Objective alternatives because it would result in new long-term noise sources (i.e., battery storage/substation facilities) in the immediate vicinity of residences.

5.3.1.1 Environmental Ranking of Subtransmission Service Objective Alternatives

As mentioned above, significant long-term aesthetics impacts are weighted more heavily in the comparison of alternatives than temporary construction-related significant air quality and noise

impacts, and are therefore used as the primary basis in the environmental ranking of alternatives. Alternative B would result in a material reduction of adverse impacts compared to the proposed Project because it would eliminate construction and operation of the proposed Circle City Substation and its source lines or the construction and operation of an alternative that would address the Distribution Service Objective; however, the Distribution Service Objective would not be accomplished under Alternative B and as a result, the ENA would potentially experience a shortage of electricity and the electrical distribution system could become vulnerable to upset starting year 2024. Therefore, Alternative B is not included in the ranking of the Subtransmission Service Objective Alternatives.

The environmental ranking of Subtransmission Service Objective alternatives, with ranking No. 1 as the environmentally superior alternative, is presented in **Table 5-3**. One of these alternatives or the proposed Mira Loma-Jefferson subtransmission line would be paired with an alternative, a group of alternatives, the proposed Circle City Substation and source lines, or a combination thereof, that address the Distribution Service Objective (see Section 5.3.2, below).

TABLE 5-3
SUBTRANSMISSION SERVICE OBJECTIVE RANKING OF ALTERNATIVES AND THE PROJECT

Rank	Alternative	Rationale
Mira Loma-Jefferson Subtransmission Line Alternative		
1	Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue	The significant aesthetics impact along Hellman Avenue associated with the Mira Loma-Jefferson subtransmission line would be avoided.
2	Alternative C2: 66 kV Subtransmission Line along Archibald Avenue	The significant aesthetics impact along Hellman Avenue associated with the Mira Loma-Jefferson subtransmission line would be avoided, but aside from that segment of the proposed subtransmission line, the visual impacts associated with the overhead portion of this alternative would generally be greater (but still less than significant) compared to the proposed Project because the overhead portions would be visible to substantially more motorists.
3	Proposed Project: Mira Loma-Jefferson 66 kV Subtransmission Line	The proposed Project would result in a significant aesthetics impact along Hellman Avenue associated with the Mira Loma-Jefferson subtransmission line.
4	Alternative C3: 66 kV Subtransmission-Level Battery Storage.	Alternative C3 would avoid the significant aesthetics impact along Hellman Avenue associated with the proposed subtransmission line, but it would result in additional significant aesthetic impacts in City of Corona.

NOTES: Blue text = Rank 1; Red text = Rank 2

As described in Table 5-3, Alternative C1, *Underground 66 kV Subtransmission Line along Hellman Avenue*, ranks first for the Subtransmission Service Objective, followed by Alternative C2, *66 kV Subtransmission Line along Archibald Avenue*, the proposed Mira Loma-Jefferson 66 kV Subtransmission Line, and Alternative C3, *66 kV Subtransmission-Level Battery Storage*, respectively.

5.3.2 Distribution Service Objective

Project alternatives designed to address the Distribution Service Objective include Alternatives D1, D2, E1, E2, E3, and E4. The aesthetics, air quality, and noise effects these alternatives would

have relative to the proposed Circle City Substation, its source lines, and associated facilities are discussed below.

- **Aesthetics** – Impacts of the proposed source lines and Alternatives E1 and E3 on scenic vistas and visual character/quality would be significant and unavoidable. Alternatives E2 would avoid these significant impacts on scenic vistas and visual character/quality in the vicinity of I-15 and along East 6th Street. Alternative E3 would avoid the significant impact associated with the proposed Databank Source Lines along Magnolia Avenue; however, the significant and unavoidable impacts of Alternative E3 to drivers and passengers on I-15 is considered more severe given the substantially greater number of people that would be affected. Alternative E4 would eliminate the significant and unavoidable impacts of the proposed Pedley Source Lines. Alternative D1 would have the least adverse visual impact compared to the proposed Project and other Distribution Service Objective alternatives because it would eliminate the need for the substation source lines, and the associated long-term aesthetics impacts would not occur.
- **Air Quality** – Impacts would be significant and unavoidable during construction for the proposed Project and each of the alternatives from the generation of pollutant emissions that would conflict with an air quality plan; emissions that would contribute substantially to an existing air quality violation; emissions of PM_{10} and NO_x that would be cumulatively considerable; and emissions of criteria pollutants and precursors that could expose sensitive receptors to harmful pollutant concentrations. However, total emissions generated under Alternative D1 would be less compared to the proposed Project and the other Distribution Service Objective alternatives, and Alternative D1 would eliminate the significant and unavoidable local particulate matter impact on sensitive receptors along the proposed source lines alignments and would reduce the health risk impact on residents at the Corona La Linda Mobile Home Park to less than significant. Alternative D2 would have the greatest effects of all the Distribution Service Objective alternatives because it would result in a significant health risk impact on the residents at the Corona La Linda Mobile Home Park even with incorporation of mitigation.
- **Noise** – Under the proposed Project and Alternatives E1 through E4, impacts would be significant and unavoidable during construction from the temporary increase in ambient noise levels at sensitive receptor locations. Alternative D1 would have the least adverse noise impacts compared to the proposed Project and other alternatives because it would eliminate the need for the substation source lines and the associated noise impacts. Alternative D2 would have the greatest effects of all the Distribution Service Objective alternatives because it would move the Circle City Substation site closer to homes at the Corona La Linda Mobile Home Park, which would result in elevated short-term construction and long-term operational noise at those residences.

5.3.2.1 Environmental Ranking of Distribution Service Objective Alternatives

As mentioned above, significant long-term aesthetics impacts are weighted more heavily in the comparison of alternatives than temporary construction-related significant air quality and noise impacts, and are therefore used as the primary basis in the environmental ranking of alternatives. Where pairing of alternatives can achieve additional reduction of impacts, that pair is ranked as well. The environmental ranking of the Distribution Service Objective alternatives, with ranking No. 1 as the environmentally superior alternative, is presented in **Table 5-4**. Because some of the alternatives only address one of the Project components, the table is organized by header rows for

TABLE 5-4
DISTRIBUTION SERVICE OBJECTIVE RANKING OF ALTERNATIVES AND THE PROJECT

Rank	Alternative	Rationale
Substation Alternatives		
1	Alternative D1: 12 kV Distribution-Level Battery Storage	The battery storage facility under Alternative D1 would reduce significant air quality impacts and less than significant aesthetic impacts associated with the proposed substation, while resulting in no new significant aesthetics impacts.
2	Proposed Project: Circle City Substation	The proposed Circle City Substation would result in less-than-significant aesthetics impacts and less-than-significant impacts with mitigation associated with health risk due to diesel particulate matter exposure and noise.
3	Alternative D2: 66/12 kV Substation Site Alternative	Significant health risk impacts from construction-related diesel particulate matter, and construction-related noise impacts would be increased under Alternative D2 and would be significant and unavoidable for nighttime construction and mitigated to less than significant for daytime construction.
Pedley Source Line Alternatives		
1	Alternative D1: 12 kV Distribution-Level Battery Storage	Same as above. Substation source lines would not be constructed because the proposed substation would not be constructed.
2	Alternative E4: Databank 66 kV Source Lines Only	The Pedley Source Lines would not be constructed. Alternative E4 would eliminate the significant aesthetic impacts and reduce the contribution to the significant air quality and noise impacts associated with the proposed Pedley Source Lines.
3	Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation paired with Alternative E1: Quarry Street 66 kV Source Lines Segment.	These alternatives paired together would avoid the significant aesthetics impact associated with the proposed Pedley Source Lines in the vicinity of Interstate 15 and reduce the significant impact in the vicinity of Grand Boulevard; however, they would increase the significant air quality impacts due to increased emissions associated with undergrounding the two line segments.
4	Alternative E2: Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation	Alternative E2 would avoid the significant aesthetics impact associated with the proposed Pedley Source Lines in the vicinity of Interstate 15 and East 6th Street, while increasing the significant air quality impact due to increased emissions associated with undergrounding the line. Significant aesthetics impacts would occur associated with the proposed Pedley Source Lines in the vicinity of Grand Avenue.
5	Alternative E1: Quarry Street 66 kV Source Lines Segment	Alternative E1 would reduce the significant impact associated with the Pedley Source Lines in the vicinity of Grand Boulevard, while increasing the significant air quality impact due to increased emissions associated with undergrounding the line. Significant aesthetics impacts would occur associated with the proposed Pedley Source Lines in the vicinity of Interstate 15 and East 6th Street.
6	Proposed Pedley Source Lines	The proposed Project would result in significant aesthetics impacts associated with the Pedley Source Lines in the vicinity of Grand Boulevard, Interstate 15, and East 6th Street.
Databank Source Line Alternatives		
1	Alternative D1: 12 kV Distribution-Level Battery Storage	Same as above.
2	Proposed Databank Source Lines	The proposed Project would result in significant aesthetics impacts associated with the Databank Source Lines along Magnolia Avenue.
3	Alternative E3: Southern 66 kV Source Lines Alignment.	Alternative E3 would result in the same significant aesthetics impacts associated with the Pedley Source Lines in the vicinity of Grand Boulevard, Interstate 15, and East 6th Street. Although the significant aesthetics impact associated with the Databank Source Lines would be avoided, this alternative would result in new significant aesthetics impacts to Interstate 15 motorists that would be more severe than the aesthetics impacts associated with the Databank Source Lines.

NOTES: Blue text = Rank 1; Red text = Rank 2

each of the Project components proposed to meet the Distribution Service Objective. One of these alternatives, or group of alternatives/Project components, to address the proposed Circle City Substation, Pedley Source Lines, and Databank Source Lines would be paired with the proposed Mira Loma-Jefferson subtransmission line or an alternative that addresses the Subtransmission Service Objective (see Section 5.3.1, above).

As described in Table 5-4, Alternative D1, *112 kV Distribution-Level Battery Storage*, ranks first because it is the only alternative that reduces impacts associated with the proposed Circle City Substation, Pedley Source Lines, and Databank Source Lines. The group of alternatives/Project components to rank second are the proposed Circle City Substation combined with Alternative E4, *Databank 66 kV Source Lines Only*, and the proposed Databank Source Lines. Because the environmental impacts associated with the proposed Circle City Substation would be less than those associated with Alternative D2, *66/12 kV Substation Site Alternative,* and the environmental impacts associated with the proposed Databank Source Lines would be less than those associated with Alternative E3, *Southern 66 kV Source Lines Alignment,* the next highest ranked alternatives/Project components would be the proposed Circle City Substation and Databank Source Lines grouped with Alternative E1, *Quarry Street 66 kV Source Lines Segment*, and Alternative E2, *Underground Pedley 66 kV Source Lines from I-15 to Circle City Substation*, followed by the proposed Circle City Substation and Databank Source Lines grouped with only Alternative E2, and so on as described in Table 5-4.

5.3.3 Environmentally Superior Alternative(s)

Alternative B would result in a material reduction of adverse impacts compared to the proposed Project because it would eliminate construction and operation of the proposed Circle City Substation and source lines and/or the construction and operation of an alternative that would address the Distribution Service Objective; however, the Distribution Service Objective would not be accomplished under Alternative B and as a result, the ENA would potentially experience a shortage of electricity and the electrical distribution system could become vulnerable to upset starting year 2024. Therefore, environmentally superior alternatives are identified among the other alternatives. **For purposes of meeting the Subtransmission Service Objective, the Environmentally Superior Alternative is Alternative C1: Underground 66 kV Subtransmission Line along Hellman Avenue. For purposes of meeting the Distribution Service Objective, the Environmentally Superior Alternative is Alternative D1: 12 kV Distribution-Level Battery Storage.** While short-term significant air quality and noise impacts cannot be reduced to a less-than-significant level under any combination of alternatives, in comparison to the proposed Project and other alternatives, Alternatives C1 and D1 are considered environmentally superior in that they eliminate all of the significant and unavoidable long-term aesthetics impacts that would be associated with the proposed Project. In addition, under Alternative D1, a battery storage system would be constructed that could be used during off-peak timeframes to facilitate the use of Distributed Energy Resources (e.g., small-scale solar electric generation) to reduce fossil-fuel electric generation.[3] Alternative D1 could provide a net beneficial impact because of the potential for long-term reductions in greenhouse gas emissions.

[3] Refer to the Commission's 2018 Decision, D.18-01-003, for further information about the potential for multiple uses of energy storage installations.

For informational purposes only, the Applicant's estimated costs of the proposed Project and all components of the Environmental Superior Alternative are provided in **Table 5-~~3~~5**.

TABLE 5-~~3~~5
CONSTRUCTION COST ESTIMATES FOR THE PROPOSED PROJECT AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Alternative	Applicant's Construction Cost Estimate
Proposed Project	$140 million
Alternatives C1 and D1*	$100 to $120 million (depending on battery storage facility size as determined during the Formal Proceeding for A.15-12-007)

NOTE:
* Includes battery revenues from estimated energy arbitrage opportunities, and assumes that the proposed substation would not be constructed. Also includes $1.7 million in additional costs for the underground segment of Alternative C1.

SOURCES: SCE 2017; and 2018.

References – Comparison of Alternatives

Southern California Edison (SCE), 2017. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 7, Question 2, for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, received via e-mail, March 2017.

SCE, 2018. Southern California Edison Responses to California Public Utilities Commission (CPUC) Data Request No. 16, Questions 10 and 12, for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, January and February 2018.

This page intentionally left blank

CHAPTER 6
Cumulative Effects

As defined in CEQA Guidelines Section 15355, the term "cumulative impacts" refers to two or more individual effects, which, when considered together, are considerable or that compound or increase other environmental impacts. "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines Section 15355(b); see also, CEQA Guidelines Section 15130(a)(1).

Section 6.1 identifies past, present, and reasonably foreseeable future projects that have been considered as part of the cumulative scenario. Section 6.2 analyzes whether the Project's incremental effects, combined with the effects of other projects, would cause a significant cumulative impact. The Project's incremental contribution to any significant cumulative impact also is evaluated in Section 6.2 to determine whether it is cumulatively considerable. An incremental Project-specific impact would be cumulatively considerable if it is "significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines §15065(a)(3)).

6.1 Projects Considered in the Cumulative Analysis

Consistent with the CEQA Guidelines requirements (§15355), a cumulative scenario has been developed to identify projects that could potentially contribute to cumulative impacts in combination with the proposed Project. While a cumulative analysis includes past, present, and reasonably foreseeable future projects, the category of past projects is captured within the existing setting, or baseline, against which impacts are judged throughout Chapter 4. Thus, they are captured in the cumulative analysis as part of existing conditions. The cumulative scenario is composed of projects that are within the vicinity of the proposed Project and alternatives, and include:

- Projects that are currently under construction;
- Approved projects that have not yet been constructed;
- Projects requiring an agency approval for an application that has been received at the time the Notice of Preparation was released;
- Projects that have been budgeted, planned, or included as a later phase of a previously approved project; and
- Probable future projects that are determined to be reasonably foreseeable for other reasons.

San Bernardino and Riverside counties; the cities of Chino, Corona, Eastvale, Norco, and Ontario; and the California Department of Transportation (Caltrans) were contacted for information on projects within their respective jurisdictions. Information also was requested from Southern California Edison (SCE) about current and future SCE projects. The projects considered to be part of the cumulative scenario are presented in **Table 6-1**, *Cumulative Scenario – Approved and Pending Projects*, which also describes the approximate geographic location of each project (see **Figure 6-1**, *Cumulative Projects in the Project Vicinity*). Major development projects are shown on the Figure with larger circles. The projects in the cumulative scenario include a range of project types in the cities of Chino, Corona, Eastvale, Norco, and Ontario. Although the San Bernardino and Riverside county planning departments were consulted, it was determined that no projects in unincorporated areas of either county would be or are within 1 mile of the Project (Riverside County, 2017; San Bernardino County, 2017). Riverside County public works department capital improvement projects in the vicinity of the Project are also listed in Table 6-1 (RCTC, 2016a and 2016b; and RCTD, 2016). The San Bernardino County Public Works Department determined that no capital improvement plan projects in the unincorporated area of the County would be in the vicinity of the Project (San Bernardino County, 2017).

TABLE 6-1
CUMULATIVE SCENARIO – APPROVED AND PENDING PROJECTS

Map ID	Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
1	Jeffrey Holbrook West Coast Development	Southeast corner of Harrington Street and Lincoln Avenue	City of Corona	148 multi-family units on 7.3 acres	Project is being re-entitled; Planning Commission Date was 3/11/2016
2	Pecuniary Capital, LLC	North of Corona Avenue, west of I-15	City of Corona	60 townhome units (multi-family) on 3.5 acres	Project entitled; inactive
3	Nova Homes	Laurel Canyon, northeast of Old Temescal	City of Corona	103 single-family lots on 61 acres	Mass grading commenced December 2015; no builder at this time; was anticipated 2017
4	ASTA/Strata	Northwest of Main and Parkridge	City of Corona	45 townhomes on 3.8 acres	Entitled; no activity
5	C & C Development	Sixth Street, west of Rimpau Avenue	City of Corona	86 affordable units	Entitlements were expected spring 2016
6	Sherborn, LLC	South of Magnolia Avenue, west of Sherborn Street	City of Corona	29 industrial lots on 76 acres	Map extended; inactive
7	Corona Regional Medical Center Expansion	South Main Street, north of Ninth Street	City of Corona	Phase 1: 72,000-square-foot addition, 120,000-square-foot Medical office building, 870-space parking structure. Phase 2: 140,000-square-foot addition	Entitled; plan check through state architect. Phase 1 was expected in 2016, Phase 2 expected 2030.
8	Roger Egge; Private Realty Advisors	Malloy Court/Rincon Street	City of Corona	Four industrial buildings totaling 95,500 square feet	Needs parcel map
9	Lu and Ciccone; Connor Commercial	NWC of East Sixth Street/Radio Road	City of Corona	Two industrial buildings totaling 216,072 square feet	Plan check was spring 2015
10	04-110 – Storm Drain Line 52	Joy Street and East Grand Boulevard	City of Corona	Construction of a storm drain line in Joy Street and East Grand Boulevard from Third Street to the Temescal Creek Channel. Rehab of the street full width.	Construction expected to be complete in July 2018
11	Vulcan Materials	Sherborn Street	City of Corona	Expansion of existing surface mine by 100 acres; extension of permit	Extension approved; DBESP under agency review spring 2015
12	Berzansky/PB Devel.	Northeast corner of Grand & Third	City of Corona	Two medical office buildings totaling 39,200 square feet on 2.49 acres	Entitled, but inactive
13	SMP12-001M – Vulcan Materials	Sherborn, SE Terminus	City of Corona	5,974 square-foot industrial office and surface mine stock pile	Entitlement process
14	DPR16-014	515 S. Promenade	City of Corona	Demolition of a 72,000-square-foot building and rebuild of a 165,684-square-foot industrial building.	Initial Development Plan review
15	DPR15-010	1345 Quarry Street	City of Corona	17,115-square-foot industrial building	Under construction
16	DPR17-001	Quarry and Radio Road	City of Corona	3,169-square-foot industrial building	Initial Development Plan review
17	CUP16-010	N. Main Street and Metro Way	City of Corona	3,074-square-foot drive-through restaurant	Entitlement pending
18	CUP16-006	705 N. Main Street	City of Corona	5,400-square-foot drive-through restaurant	Entitled
19	DPR15-023	ES Buena Vista, north of State Route 91	City of Corona	56 senior apartments	Development Plan review/public outreach
20	V16-001 & PM 37133	School Street, north of Frontage Road	City of Corona	Variance/Parcel Map for relocated residential unit	Entitled – Plan Check
21	CUP16-005	Quarry Street, east of Rimpau Avenue	City of Corona	Self-storage expansion	Entitled
22	PP16-008	Sixth Street east of Lincoln Avenue	City of Corona	14-unit motel expansion	Entitled
23	DPR15-028	Corona Avenue, northeast of I-15	City of Corona	18 single-family lots	Initial Development Plan review
24	PP02-014M – Honda Cars of Corona	1051 Pomona Road	City of Corona	12,275-square-foot auto service building and new car inventory lot	Entitlement process
25	City of Corona Ion Exchange Facility	West of Rimpau and north of Sixth Street	City of Corona	Department of Water & Power ION Exchange Facility	Under construction
26	PP15-002 – City of Corona	SEC Rimpau Avenue and Quarry Street	City of Corona	Household waste drop off facility	Entitled
27	TTM 36864	ES Corona Avenue, south of I-15	City of Corona	7-lot subdivision	Entitlement process
28	Sherborn Industrial Development	ES Sherborn Street, south of Magnolia Avenue	City of Corona	Six industrial buildings totaling 686,133 square feet	Conceptual proposal
29	Home Gardens Water District Well Collection Line	1 – East Sixth Street between Grant Street and El Sobrante Road; 2 – El Sobrante Road between Sixth Street and Quarry Street; 3 – Quarry Street between Third Street and El Sobrante Road; 4 – Third Street between Quarry Street and Joy Street	City of Corona	New well at Grant Street and 14,200-foot, 24-inch well collection pipeline. Rehab of the street full width.	Expected completion by May 2018
30	River Road Bluff Street to Reclaimed Water WRCRWA Plant	River Road between Bluff Avenue and Baron	City of Corona	Construct reclaimed water pipeline	Unknown
31	River Road Reclaimed Waterline	River Road between Lincoln Avenue and Corydon	City of Corona	Construct reclaimed water pipeline	Unknown
32	Promenade Avenue Reclaimed Waterline	Promenade Avenue between McKinley Avenue and Sixth Street	City of Corona	Construct reclaimed water pipeline	Unknown
33	Magnolia Avenue Bridge Widening	Magnolia Avenue from All American Way to El Camino	City of Corona	Widening the bridge and street, new median, rehab the street, construct sidewalk, and curb and gutter.	Construction expected to begin late 2018
34	Citywide Sidewalk Replacement Project	Citywide	City of Corona	Remove and replace damaged sidewalk	Construction complete by December 2017
35	KB Homes – The Lodge, Residential Development Project No. 10-0124	NWC of Limonite Avenue and Scholar Way	City of Eastvale	205 detached single-family homes	Under construction

TABLE 6-1 (CONTINUED)
CUMULATIVE SCENARIO – APPROVED AND PENDING PROJECTS

Map ID	Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
36	Walmart – Eastvale Crossings Project No. 12-0051	Southeast corner of Limonite and Archibald (APNs 144-030-028, -012, -014)	City of Eastvale	Proposal for the development of a 177,000-square-foot retail store and several outparcels on 23.37 acres	Approved April 2017
37	Lennar – Mill Creek Crossing, Planned Residential Development Subdivision Project No. 12-0297	SEC Chandler/Hellman	City of Eastvale	Minor Development Plan Review for the development of a Master Home Plan for the "Mill Creek Crossing at Eastvale" residential development of 122 single-family dwelling units for Tract 29997	Under construction
38	The Campus (formerly known as Providence Business Park) Amendment to Major Development Review	West of Archibald Avenue and approximately 750 feet south of Limonite Avenue	City of Eastvale	Development of a business park consisting of 14 new industrial buildings ranging from 12,850 square feet to 129,000 square feet and associated improvements on 53.37 gross acres of vacant land (former Bircher's site)	Approved by Planning Commission on December 7, 2016. Road improvements under construction on Archibald Avenue.
39	LBA Realty Industrial Building Major Development Review Project No. 14-1077	North of Cantu-Galleano Ranch Road 1,00 feet east of Hamner Avenue. APN 160-020-033 and 156-050-025.	City of Eastvale	Major Development Review for a 446,173-square-foot industrial building on APN 160-020-033 (approximately 24 acres) and overflow parking on APN 156-050-025	Planning Commission approval on April 20, 2016. Revised construction plans were approved on December 22, 2016.
40	Stratham Homes – Sendero, Planned Residential Development Project No. 14-1398	Northwest corner Limonite and Harrison; APN 164-010-017	City of Eastvale	General Plan Amendment, Change of Zone, Planned Residential Development, and Tentative Tract Map for the subdivision of approximately 44 acres into 323 residential lots and 14 lots for open space and water basins.	Approved by City Council June 10, 2015. Applicant submitted second round of Master Home Plan on January 11, 2017.
41	Chandler Catholic Church Project No. 15-0175	14395 Chandler Street; APNs: 144-121-005, 144-130-008, 144-130-009, and 144-130-010	City of Eastvale	Pre-Application Review to be located at 14395 Chandler Street (four individual parcels owned by 3 separate owners) within the C-1/C-P and A-1 zoning districts	Pre-Application complete
42	Goodman Major Development Plan. Project No. PLN 16-00026	SEC Cantu Gelleano Ranch Road and Hamner Avenue.	City of Eastvale	Major Development Plan, Conditional Use Permit, and Specific Plan Amendment for Goodman Commerce Center for Amazon off-site parking located west of Goodman Way in planning area 5. The specific plan will be amended to increase building height in the industrial planning area from 50 feet to 55 feet.	City Council approved project on November 9, 2016
43	Goodman Commerce Center Tentative Parcel Map No. 37208.	SEC Cantu Gelleano Ranch Road and Hamner Avenue.	City of Eastvale	Tentative Parcel Map review for a portion of the Goodman Commerce Center site. This map will create parcels within approximately 80 acres of the Goodman Commerce Center to include parcels for a Costco, a gas station, parking for Amazon building 2 on the west side of Goodman Way, and retail sites.	Approved by Planning Commission on December 7, 2016
44	Goodman Retail Center Major Development Plan, Project No. PLN 16-00028	SEC Cantu Gelleano Ranch Road and Hamner Avenue.	City of Eastvale	Major Development Review for retail center adjacent to Costco at the Goodman Commerce site	Comment letter sent to applicant on January 13, 2017. Waiting for applicant to resubmit.
45	Costco Major Development Review and Condition Use Permit, Project No. 16-00020	SEC Cantu Gelleano Ranch Road and Hamner Avenue.	City of Eastvale	Major Development Review for the construction of approximately 158,000-square-foot Costco Warehouse building with a tire center and outdoor food court area at the commercial portion of the Goodman Commerce Center. Two Conditional Use Permits for the operation of the tire center and for the sale of alcohol. The tire center includes retail sales and installation area that will occupy approximately 5,200 square feet of building. A fueling station and car wash are proposed directly off Hamner Avenue.	Construction expected to be completed June 2018
46	Platinum Collision Center CUP, Project No. PLN 16-00046	Goodman Business Park	City of Eastvale	Not available	Application and plans submitted December 20, 2016; incompleteness and comment letter sent to applicant on January 17, 2017.
47	Goodman Commerce Center Business Park, Project No. 15-0551	Northeast corner of Bellegrave Avenue and Hamner Avenue	City of Eastvale	Proposal for the development of the Business Park. The development will include eight buildings of approximately 191,356 square feet of professional offices, light industrial and light assembly uses.	Currently under construction
48	Marketplace at Enclave Sign Program Amendment	Southwest corner of Schleisman Road and Archibald Avenue	City of Eastvale	Sign Program Amendment to include additional monument signage on the northern corner of the Starbucks location and northeast corner of shopping center site	Approved revised sign program on October 10, 2015.
49	The Ranch – Industrial Portion, Project No. PLN 16-00011	South of Bellegrave Avenue, north of Limonite (Kimball) Avenue, and east of Hellman Avenue	City of Eastvale	Major Development Review for six industrial buildings totaling 985,000 square feet on six parcels	Under construction
50	Leal Master Plan Special Project	Leal Property	City of Eastvale	This Master Plan describes the community's vision for the project area, identifies appropriate land uses, and includes the development standards that are necessary to achieve the vision, defines the character of the project's development, lists the steps involved with the development process, and provides the project's implementation plan.	Approved by City Council December 2017
51	Eastvale Marketplace Project No. 15-0958	NEC Limonite/Sumner	City of Eastvale	Proposal construction of a new neighborhood retail center with multi-tenant and single tenant buildings and associated parking facilities to be located at the northeast corner of Limonite Avenue and Sumner Avenue. Potential uses include grocery, banking, drug store, restaurants, general retail, service, and a tire store.	Approved, under construction
52	New Traffic Signal	Sumner Avenue and 65th Street	City of Eastvale	New Traffic Signal	Completed August 2017
53	Vantage Point Church Project No. 15-1174	8500 Archibald Avenue	City of Eastvale	Proposal to construct a sanctuary, church, community buildings, and associated site improvements	Applicant is conducting technical studies for the CEQA review
54	Two industrial buildings on Hamner and Riverside, Project No. 15-1508	SEC of Hamner Avenue and Riverside Drive (APN 156-040-087 and -088)	City of Eastvale	Major Development Review for two new industrial buildings (40,000 square feet and 115,000 square feet) on two parcels behind the vacant lot (Chevron Site)	Construction completed
55	Chandler Fire Station No. 31, Project No. 15-0835	Northeast corner of Chandler and Selby	City of Eastvale	Minor Development Review for the installation of a new wireless telecommunications facility disguised as an 85-foot-high water tank operated by Verizon within an approximately 529-square-foot lease area at the Chandler Fire Station	Incompleteness letter sent to applicant on July 20, 2016. City is waiting for additional materials.
56	Verizon on Grapewin Project No. 15-1662	Vacant lot located at 8306 Grapewin Street	City of Eastvale	Minor Development Review for the development of a new wireless telecommunication facility disguised as a 50-foot-tall monopalm consisting of 12 antennas, one parabolic antenna, and associated equipment	Building and Planning approved construction plans on December 19, 2016; currently being reviewed by Public Works

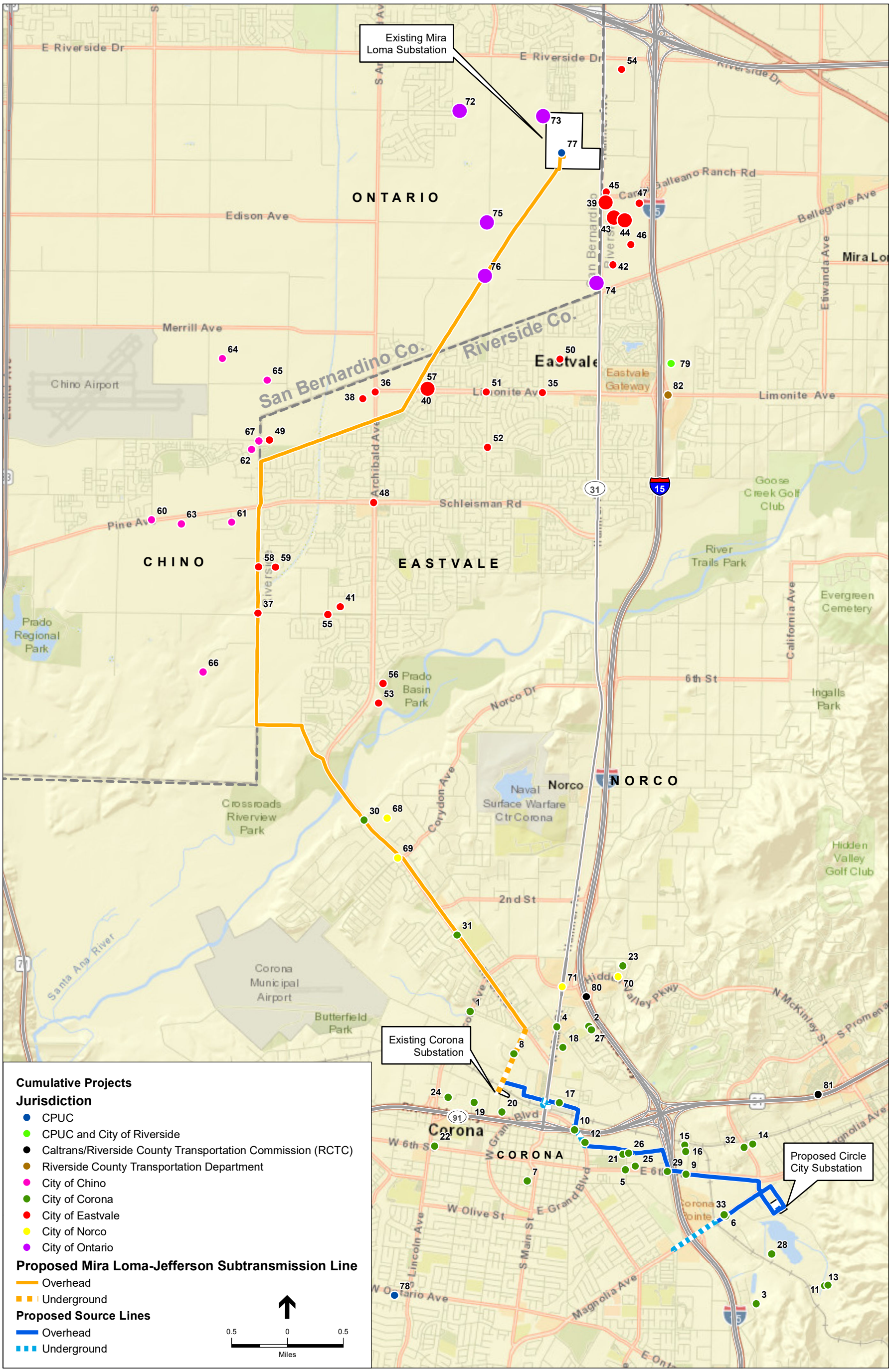
TABLE 6-1 (CONTINUED)
CUMULATIVE SCENARIO – APPROVED AND PENDING PROJECTS

Map ID	Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
57	Sendero Tentative Parcel Map, Project No. PLN 15-06023	NW corner of Limonite Ave. and Harrison Avenue APN: 164-010-025	City of Eastvale	Not available	Site clearing and grading underway as of December 2017
58	Philistine Rondo Elementary School	Off Hellman Avenue	City of Eastvale	Elementary school on 10 acres	Under construction
59	Zone 2 Storm Drains	Walters Street	City of Eastvale	Installation of storm drains	Phase 1 was completed in November 2016; Phase 2 was under design and expected to be awarded to contractor March 2017
60	Falloncrest at the Preserve	Northeast corner of East Preserve Loop and Pine Avenue	City of Chino	204 single-family detached residential units, 786 condo/townhouse units, 412 apartments, 77,597-square-foot shopping center, 77,597-square-foot general office	Phase 1 (single family detached) has been approved/entitled but not built. The rest is part of a master plan that is probably years away from getting built.
61	Lewis Residential (TM19980), Homecoming - Phase 4	South of Pine Avenue, West of Hellman Avenue	City of Chino	454 apartment units	Approved but not yet constructed
62	Laurel Lane (TM 18890)	Southwest corner of Kimball Avenue and Hellman Avenue	City of Chino	70 single-family detached units	Approved but not yet constructed
63	Saris Regis Industrial	Northwest corner of Kimball Avenue and Hellman Avenue	City of Chino	1,203,050 square feet of warehouse and light industrial/business park uses on 70 acres	Approved and in plan check
64	Harvest/Heirloom (TM 18480)	North of Pine Avenue, west of Hellman Avenue	City of Chino	600 single-family detached units	186 units have been approved for entitlements. The remainder are included in the Master Site Approval & TTM and will be entitled in the coming years
65	Watson Industrial Park	Merrill Avenue and Hellman area	City of Chino	263-acre business park with distribution centers, high-cube warehouses, and office buildings totaling 5.1 million square feet	First phase under construction
66	Rancho Miramonte	South of Chino-Corona Road, East of Cucamonga	City of Chino	823 single-family detached units	In early planning stages, has not received entitlements
67	Kimball Business Park	Northeast corner of Hellman and Kimball Avenue	City of Chino	352,000 square feet of high-cube warehouse/distribution center use within a single building; 564,000 square feet of warehousing use within 4 buildings; 140,500 square feet of general light industrial use within 3 buildings; 146,550 square feet of business park use within 17 buildings	Projected opening year of 2018
68	TTM 36717 (HC&D Architects/Dallape)	2877 River Road, East corner of River/Bluff	City of Norco	Subdivide 26.19 net acres into 38 single-family residential lots	Approved by City Council, not yet under construction
69	Site Plan 2015-23; CUP 2015-26, -27, -28 (Lewis Retail Centers)	Southwest side of River Road and northwest side of Corydon Street	City of Norco	113,331-square-foot commercial center with 7 buildings, and subdivide approximately 13.7 net acres into 9 parcels for the sale of distilled spirits, four drive-through, and a service station	Approved by City Council October 2015, not yet under construction
70	Site Plan 2015-22; CUP 2015-25 (Olsen)	Northwest of Hidden Valley Parkway, East of Yasment Drive	City of Norco	6,205-square-foot commercial center with two restaurant buildings and a CUP for one of the buildings to have a drive thru.	Approved by City Council October 2015. Not yet under construction
71	Hamner Avenue and Hidden Valley Parkway Turn Pocket Improvements	Hamner Avenue and Hidden Valley Parkway	City of Norco	Removal of existing median and asphalt concrete pavement and construct striping for an additional turn pocket located on Hamner Avenue and Hidden Valley Parkway. Project includes removal and re-paving of asphalt pavement including base rock, street striping, relocation of existing irrigation facilities, removal of existing curb median and all appurtenant related work.	Bids to complete the work were due to the City in March 2017
72	West Haven Development	North of Schaefer Avenue and west of Haven Avenue	City of Ontario	199-acre residential development that includes 740 single family units and 587 multifamily units,	Approved; implementation was expected to begin in 2017
73	Rich-Haven Development	South of Riverside Drive and east of Haven Avenue	City of Ontario	510-acre development that includes 1,553 single family units, 2,703 multifamily units, and 889,200 square feet commercial.	Approved; implementation was expected to begin in 2017
74	Esperanza Development	East of Cleveland Avenue and south of Edison Avenue	City of Ontario	233-acre residential development that includes 914 single family units and 496 multifamily units.	Approved; implementation was expected to begin in 2017
75	The Avenue Development	North of Edison Avenue and west of Haven Avenue	City of Ontario	568-acre development that includes 2,313 single family units, 562 multifamily units, and 130,000 square feet commercial.	Approved; implementation was expected to begin in 2017
76	Great Park Development	North of Eucalyptus Avenue and west of Haven Avenue	City of Ontario	320-acre residential development that includes 740 single family units and 587 multifamily units.	Approved; implementation was expected to begin in 2017 and continue through 2021
77	Maintenance at Mira Loma Substation	City of Ontario, within Mira Loma Substation	CPUC	Replace bushing on AA-bank, replace three circuit breakers, replace station batteries, install phase measurement devices, and replace one AA-bank.	Construction was anticipated to begin and end in 2017 for all components except for installation of the phase measurement devices and replacement of the AA-bank, which would begin and end in 2019.
78	Maintenance at Jefferson Substation	City of Corona, within Jefferson Substation	CPUC	Replace five circuit breakers and install one 14.4 MVAR 66 kV capacitor	Construction anticipated in 2018 and 2019
79	Southern California Edison's Riverside Transmission Reliability Project	Wildlife Substation , Wilderness Substation, Mira Loma Substation, and Vista Substation	CPUC and City of Riverside	Construction of a new 230 kV Substation and associated facilities; approximately 10 miles of new, double circuit 230 kV transmission line loop into the Wildlife Substation; certain facilities supporting the interconnection of Riverside's 230/69 kV Wilderness Substation to the Wildlife Substation; and installation of new telecommunications facilities between the existing Mira Loma and Vista Substations and the new Wildlife Substation.	Riverside County certified a Final EIR for the project in 2013; The CPUC issued a Notice of Preparation for a Subsequent EIR on January 25, 2017.
80	Interstate-15 Express Lanes Project	Between the Interstate 15/Cajalco Road interchange and the I-15/SR 60 interchange	Caltrans/ Riverside County Transportation Commission (RCTC)	Construct one to two tolled express lanes in each direction	Construction to start in 2018 and end in 2020

TABLE 6-1 (CONTINUED)
CUMULATIVE SCENARIO – APPROVED AND PENDING PROJECTS

Map ID	Project Name or Applicant	Location	Jurisdiction	Description	Status / Timeline
81	State Route 91 Project	Between the Orange County/Riverside County line and I-15, between State Route 71 and I-15, and between the I-15/SR 91 interchange and Pierce Street	RCTC	Extend tolled express lanes on State Route 91 between the Orange County/Riverside County line and I-15. Add one regular lane between State Route 71 and I-15. Add one regular lane from the I-15/State Route 91 Interchange to Pierce Street. Improve five local interchanges and the Interstate 15/SR 91 interchange	Construction completed in 2017
82	Limonite Avenue/Interstate-15 Interchange	Limonite Avenue and I-15	Riverside County Transportation Department	A new 8-lane overcrossing, three through lanes in each direction plus two turn lanes, widening of the off ramps from two to four lanes, the addition of two new loop on ramps, and widening of Limonite to four lanes in each direction between Hamner Avenue and Wineville Avenue.	Completed the PA/ED phase and is currently in final design phase, construction scheduled to begin in December 2017

SOURCES: CPUC, 2016; City of Corona, 2016a; City of Corona, 2016b; City of Eastvale, 2017a; City of Eastvale, 2017b; City of Norco, 2016; City of Ontario, 2016; RCTC, 2016a; RCTC, 2016b; Riverside County Information Technology, 2016; SCE, 2016; The Press Enterprise, 2014a; The Press Enterprise, 2014b; Urban Crossroads, 2016; Riverside County Transportation Department, 2016



Notes: Cumulative project #34 is a city-wide project for the City of Corona and is not shown on this map.
Please refer to Table 6-1 for the corresponding cumulative project descriptions.

SOURCE: SCE, 2015; CPUC, 2016; Caltrans/Riverside County Transportation Department, 2016;
City of Chino, 2016; City of Corona, 2016; City of Eastvale, 2017; City of Norco, 2016; City of Ontario, 2016

Circle City Transmission Line Project . 207584

Figure 6-1

Cumulative Projects in the Project Vicinity

This page intentionally left blank

6.2 Cumulative Effects Analysis

6.2.1 Aesthetics

The proposed Project and alternatives would have no impact pertaining to scenic resources within a state scenic highway. Therefore, the Project and alternatives would not cause or contribute to any cumulative impact related to this criterion.

The geographic scope of the cumulative effects analysis for visual resources consists of designated scenic corridors, major roadways, recreational areas, and other locations from which a viewer could see the Project along with views of other projects in the cumulative scenario, which is primarily the foreground viewshed, or within 0.5 mile of the viewer. This geographic scope of cumulative impacts analysis was established based on the natural boundaries of the affected resource, i.e., potential shared viewsheds, and not on jurisdictional boundaries. Cumulative effects on visual resources could occur during the construction period (e.g., from cumulative construction disturbances), or during Project operation or maintenance (e.g., cumulative visual disturbances within the landscape and glare).

The visual impacts of the Project alone are analyzed in Section 4.1.4, *Impacts and Mitigation Measures*. The analysis concluded that impacts pertaining to visual character during Project construction, and operation of the proposed Circle City Substation, would be less than significant (Class III). Impacts regarding light and glare would be less than significant, or less than significant with mitigation (Class II). Impacts regarding visual character during Project operation would be significant and unavoidable (Class I) at two locations along the Pedley Source Lines Route in Corona (along East 6th Street and paralleling I-15), at one segment of the Databank Source Lines route in Corona (along Magnolia Avenue), and at one segment of the Mira Loma-Jefferson subtransmission line route along Hellman Avenue in Eastvale. Impacts regarding scenic vistas also would be significant and unavoidable (Class I).

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 6.1, *Projects Considered in the Cumulative Analysis*. Cumulative projects in Table 6-1 that are within the visual study area of the Project (approximately 0.5 mile) have the potential to create new visual impacts that could be affected by the Project from public roadways and recreational areas. However, the projects would generally be located in urbanized, developed areas and would therefore not be likely to affect the area's visual character. In addition, future development within the various jurisdictions is guided by applicable city and county planning general plans, and associated planning and environmental documents and design review processes.

Construction and operation of the proposed Circle City Substation would result in a change to the area's visual character by constructing a substation on vacant land. The proposed substation would be located within an industrial area in the City of Corona on an approximately 19.5-acre site that was formerly occupied by a warehouse. The substation would not substantially degrade the existing character of this industrial landscape setting or result in significant light or glare

impacts. The City of Corona is developed with an urban landscape containing industrial and commercial uses, as well as residential uses in the vicinity of the proposed substation. No cumulative projects are located within 0.5 mile of the proposed substation; therefore, the planned projects would not be seen in the same viewshed as the substation. As a result, the development of Circle City Substation would not combine with existing and proposed development in the area and result in a significant cumulative impact (Class III).

The proposed Project would add new or upgraded electrical infrastructure to the overall visual setting of the Project area. The Project's aboveground facilities would occupy the same field of view as other built facilities or impacted landscapes in the viewshed, resulting in a significant cumulative impact. Existing utility infrastructure, including subtransmission and transmission lines and substations, have already compromised the existing visual setting in the Project vicinity. When considering that impacts attributable to the proposed source lines or the Mira Loma-Jefferson Subtransmission Line are related to obstruction of views of distant mountain ranges due to the proposed heights of new poles and lines, the Project's contribution to visual impacts would not be cumulatively considerable (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.2 Agriculture and Forestry Resources

The proposed Project and alternatives would have no impact with respect to conflicts with agricultural zoning or a Williamson Act contract; conflicts with or rezoning of forest or timberland; conversion or loss or forest land; or other changes that could result in conversion of forest land to non-forest use. Therefore, the Project would not cause or contribute to any cumulative impact related to these criteria.

The geographic scope of potential cumulative impacts on agriculture and forestry resources include agricultural and forest land within Riverside and San Bernardino counties. Cumulative impacts to which the proposed Project could contribute could be on-going, including beyond the operational lifetime of the Project, if the long-term conversion of agricultural land to non-agricultural uses would occur.

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 6.1. Some of the projects listed in Table 6-1 could cause impacts to farmland in the vicinity of the Project. Based upon the project locations shown on Figure 6-1, *Cumulative Projects in the Project Vicinity*, some small areas designated as *Prime Farmland*, *Unique Farmland*, or *Farmland of Statewide Importance* may be converted to non-agricultural use by these projects. In addition, Riverside and San Bernardino counties have experienced substantial loss of agricultural land due to continued conversion to non-agricultural uses. Between 1984 and 2014, Riverside County lost over 100,000 acres of *Prime Farmland*, *Unique Farmland*, or *Farmland of Statewide Importance*, or an annual average of over 3,500 acres lost (DOC, 2014a). During the same period San Bernardino County lost over 40,000 acres or over 1,400 acres per year (DOC, 2014b). Land use conversion trends indicate that the acreage of Farmland in

Riverside and San Bernardino counties is expected to decline with or without the Project. For purposes of this analysis, the historic decline and trend is considered evidence of an existing significant cumulative impact. Cumulative impacts to *Prime Farmland*, *Unique Farmland*, or *Farmland of Statewide Importance* would be significant.

The Project would result in a considerable contribution to this impact (approximately 0.5 acre of Farmland converted). However, implementation of Mitigation Measure 4.2-1 would compensate for the direct loss of agricultural land by requiring that SCE obtain a permanent agricultural easement at a 1:1 ratio for Farmland converted to non-agricultural use. With implementation of this mitigation measure, the Project's contribution to the existing significant cumulative impact would be less than significant because mitigation would offset the acreage of Farmland removed from agricultural production by the Project. (Class II).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.3 Air Quality

The geographic scope considered for cumulative impacts to air quality is the South Coast Air Basin.

In developing mass emissions thresholds of significance for criteria air pollutants and ozone precursors, air districts consider the emission levels for which a project's individual emissions would be cumulatively considerable. Therefore, if a project would exceed the identified construction or operational significance thresholds, its emissions would be cumulatively considerable, and if a project would not exceed the construction or operational significance thresholds, its emissions would not be cumulatively considerable.

As described in Section 4.3, *Air Quality* (see Impacts 4.3-1, 4.3-2, and 4.3-4), implementation of Mitigation Measures 4.3-1a and 4.3-1b would reduce Project-related construction emissions of particulate matter less than 10 microns (PM_{10}) and nitrogen oxides (NO_x), respectively; however, the significant impacts from construction emissions would not be mitigated to a less-than-significant level. Therefore, construction of the Project would result in a cumulatively considerable net increase in PM_{10} and NO_x emissions pre-mitigation, and the associated cumulative impact would be significant and unavoidable (Class I). All other criteria pollutant emissions would be less than the respective significance thresholds and therefore would not be cumulatively considerable and would result in less-than-significant cumulative impacts (Class III).

With regard to impacts on sensitive receptors, the total criteria pollutant and diesel particulate matter (DPM) emissions from Project on-site construction equipment that would occur at the Circle City Substation site would not combine with emissions from other cumulative projects to the extent that a significant cumulative impact would occur because, as identified on Figure 6-1, *Cumulative Projects in the Project Vicinity*, there are no cumulative projects within a 0.5 mile of the Circle City Substation site or the nearest residences at Corona La Linda Mobile Home Park.

The cumulative impact that would be associated with construction and operation of the Circle City Substation would be less than significant (Class III). There are several cumulative projects in the immediate vicinity of the proposed Mira Loma-Jefferson subtransmission line and substation source line alignments. If construction of these other projects were to occur at the same time and place as the Project, local combined concentrations of criteria pollutant emissions could have a significant cumulative effect on local sensitive receptors, and the proposed Project's contribution would be cumulatively considerable. As described in Section 4.3, *Air Quality* (see Impact 4.3-6), implementation of Mitigation Measures 4.3-1a and 4.3-1b would reduce Project-related onsite construction emissions of criteria pollutants; however, the Project-related significant impacts from construction emissions would not be mitigated to a less-than-significant level. Therefore, if combined with onsite criteria pollutant emissions from other cumulative projects, the Project emissions would be cumulatively considerable significant post-mitigation (Class I). With respect to cancer risk that would be caused by DPM emissions from on-site equipment that would be associated with construction of the Mira Loma-Jefferson subtransmission line and proposed source lines, these Project components would be constructed linearly and would not be expected to expose any one receptor along the alignments for longer than 2 to 3 weeks, significantly less than the two-month minimum recommended by OEHHA for assessment of cancer risk. Therefore, when combined with the emissions from the other adjacent projects identified in Section 6.1, the cumulative cancer risk impact would be less than significant because the total emissions and duration of combined exposure at any one sensitive receptor location would be relatively minor, and the health risk from the short-term DPM emissions that would be associated with construction of the Project would not be cumulatively considerable (Class III).

Odor impacts that would be associated with the Project would be limited to construction-related combustion of diesel fuels. The impact would be less than significant because construction activities would be intermittent and spatially dispersed, and associated odors would dissipate quickly. There is no existing adverse cumulative condition related to odors to which the Project could contribute. Given the proximity of cumulative projects to the Project components and the expected duration of sensitive receptor exposure to Project-related diesel fumes, projects in the cumulative scenario are not expected to cause diesel-related odors that would intermingle with those of the Project and, thereby, cause a significant cumulative effect. The cumulative impact would be less than significant (Class III).

Long-term operation and maintenance of the Project would not cause emissions that would exceed the operational significance thresholds (see Section 4.3, *Air Quality*, Impact 4.3-3). Therefore, the cumulative impact would be less than significant.

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.4 Biological Resources

The geographic context for the analysis of cumulative impacts associated with biological resources varies depending upon the considered species or resource, but the analysis includes

areas within 1 mile of the Project's components and alternatives that would affect similar habitat or biological resources.

Construction of the proposed Project would result in both temporary impacts on special-status species (i.e., Riverside fairy shrimp, vernal pool fairy shrimp, Delhi sands flower-loving fly, Santa Ana sucker, western pond turtle, two-striped garter snake, south coast garter snake, western spadefoot toad, coast horned lizard, least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo) and their habitat. In addition, the proposed Project is located within Criteria Cells and an "Additional Survey Needs" area for Narrow Endemic plant species and burrowing owl in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Numerous focused special-status species surveys (see Table 4.4-3) have been completed for the Project area with the majority of special-status species not documented. Burrowing owl and least Bell's vireo have been identified within the Project vicinity and Project impacts to these species are specifically addressed in Applicant Proposed Measures (APMs) BIO-08 and BIO-06 to avoid potential impacts.

Of the ongoing and future development projects described in Section 6.1 and Figure 6-1, three (#30, #53 and #56) are located near sensitive habitat at the Santa Ana River. These are the Vantage Point Church Project, Verizon wireless telecommunication tower on Grapewin Project, and the River Road Bluff Street to Reclaimed Water WRCRWA Plant. None of these projects have elements within the river corridor and it is not expected that they would contribute to the incremental loss of undeveloped natural lands that provide habitat for special-status species that would be impacted by the proposed Project. Many of the other projects identified in Table 6-1 are located within urban areas and would not impact sensitive biological resources, or impact resources that differ from those impacted by the Project. Hence, no cumulative impact was identified to sensitive biological resources in regional area from past, present, and reasonably foreseeable projects. Such projects are also required to comply with federal and State regulations protecting special-status species through implementation of mitigation measures during construction and/or participation in the MSHCP. Activities associated with the construction of the proposed Project would cause relatively minor loss of undeveloped habitat in the area, principally for the footprint of individual transmission towers/poles where they occur in non-agricultural lands, and for access roads where needed, that would traverse native habitat. Therefore, implementation of APMs and Mitigation Measures 4.4-1a through 4.4-5c, which requires SCE to conduct surveys and to avoid and minimize the potential minor impacts to special-status species and their habitat, would reduce the Project's cumulative contribution of the proposed Project to less than significant (Class II).

Construction of the proposed Project could also impact riparian habitat or jurisdictional waters of the United States and waters of the State, including drainages, seasonal wetlands, and the Santa Ana River. Because ongoing and future development projects as described in Section 6.1 are not located within the Santa Ana River corridor, it is anticipated that they would not impact these features. Therefore, Project impacts in combination with other projects would not contribute to a significant cumulative impact on riparian habitat, and jurisdictional waters of the United States and waters of the State, including drainages, seasonal wetlands, and tributaries to Santa Ana River (Class III).

Impacts to riparian vegetation, which includes willow riparian forest vegetation and/or riverine habitat, would be mitigated to ensure no net loss of habitat through implementation of APM BIO-10. APM BIO-11 would require SCE to avoid and minimize impacts to riparian and riverine habitats and jurisdictional waters. In the event jurisdictional features cannot be avoided, then APM BIO-11 stipulates permits from USACE, RWQCB, and CDFW would be obtained to ensure no net loss of habitat and address impacts to jurisdictional features. In addition, implementation of Mitigation Measure 4.4-5c would ensure that Project impacts to riparian habitat or other sensitive natural community would be reduced to a less-than-significant level, Mitigation Measure 4.4-9a addresses potential impacts to non-riparian special-status vegetation, and Mitigation Measure 4.4-9b addresses potential impacts to riparian habitat. With implementation of these measures, the proposed Project would not result in a cumulatively considerable contribution to a significant cumulative impact on riparian habitat or jurisdictional waters of the United States and waters of the State (Class II).

The Project area consists of urban, agricultural and open space that provide habitat for nesting migratory birds and raptors. There is the potential for ongoing and future development projects, to impact nesting birds during construction. The Project's construction impacts, in combination with those of other projects, would result in a significant cumulative impact on nesting birds. Implementation of APMs BIO-01 and BIO-09 would require SCE to conduct preconstruction surveys and avoid active nests with a suitable buffer. Therefore, with the implementation of these measures, the proposed Project would not have a cumulatively considerable contribution to impacts on nesting birds (Class III).

As discussed in Section 4.4.4, *Impacts and Mitigation Measures*, impacts to special-status species, critical habitat, sensitive habitats, and jurisdictional wetlands and waters resulting from Project activities would be less than significant with the implementation of APMs and mitigation measures during construction. Other projects within western Riverside County and within the City of Eastvale, which has also adopted the Western Riverside County MSHCP, would mitigate for impacts to special-status biological resources in accordance with the MSHCP. In addition, all projects in the area would mitigate for any significant impacts to biological resources according to the requirements listed under Section 7 and Section 10 of the federal Endangered Species Act and requirements listed under CEQA. Evaluations of cumulative impacts are conducted under the Section 7 or Section 10 processes for all projects. As a result, cumulative impacts to special-status biological resources would be less than significant (Class II).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.5 Cultural Resources

The geographic scope for cumulative impacts to historical resources and archeological resources includes a 1-mile radius from the Project footprint. This geographic scope of analysis is appropriate because the cultural resources within this radius are expected to be similar to those in the Project Area because their proximity, similar environments, landforms, and hydrology would result in similar land-use types, and thus, site types.

The geographic scope for cumulative impacts to paleontological resources includes all areas in the Chino and Temescal Basins underlain by the same geologic units, which would yield fossils representative of a similar time period and geographic range. This would include all areas underlain by older Quaternary alluvium, alluvial fans, alluvial wash deposits, and sandstone, and Tertiary sedimentary rock units in the region; for purposes of this EIR analysis it is assumed that all projects in the cumulative scenario that involve ground excavations on the valley floor could disturb these geologic units, irrespective of their timing.

The Project vicinity contains a significant archaeological and historical record that, in many cases, has not been well documented or recorded. Thus, there is the potential for ongoing and future development projects in the vicinity, such as those identified in Section 6.1, to disturb landscapes that may contain known or unknown cultural resources. Environmental analysis is either underway or completed for many of these projects.

The Project would have significant impacts on undiscovered historical resources, undiscovered archaeological resources, and human remains (Impacts 4.5-2, 4.5-3, and 4.5-5), and combined with impacts of other proposed projects in the Project vicinity, cumulative impacts on these resources would be significant. The significant construction impacts of the Project would be mitigated such that significant cultural resources are avoided if feasible, and that excavation would cease if a cultural or historical resource (including human remains) is uncovered during Project construction (Mitigation Measure~~s~~ 4.5-~~2~~1 ~~and 4.5-5~~, described in Section 4.5.4). Because mitigation is designed to avoid a change in the significance of cultural resources, the residual impact after mitigation would be less-than-cumulatively-considerable and less than significant. (Class II).

In addition, Project impacts associated with the Grand Boulevard Historic District (P-33-006444) were found significant, but would be less than significant with implementation of Mitigation Measure 4.5-1. Projects #10 and #12 in Table 6-2 would be constructed within or on Grand Boulevard. In the event that either or both of these projects adversely affected contributors to the District, the cumulative impact would be significant. However, after implementation of Mitigation Measure 4.5-1, which would require avoidance of all potential contributors to the District, the Project would not have the potential to affect a contributor and thus its incremental impact would be less-than-cumulatively-considerable and less than significant. (Class II).

Excavation activities associated with the Project in conjunction with other projects in the area could contribute to the progressive loss of fossil remains, as-yet unrecorded fossil sites, associated geological and geographic data, and fossil bearing strata, a significant cumulative impact. The Project's contribution to this impact would be cumulatively considerable. However, with implementation of Mitigation Measure 4.5-4, the Project would either avoid impacts to fossil resources or result in the recovery of scientific data should previously unrecorded fossils of significance be uncovered. Fossils are valued as a resource for the potential scientific data they provide and hence with mitigation, the Project would either have no impact or a positive impact on paleontological resources through the recovery of scientific knowledge. Therefore, implementation of Mitigation Measure 4.5-4, the Project's incremental impact on fossils would be less-than-cumulatively-considerable and less than significant (Class II).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.6 Energy Conservation

As analyzed in Section 4.6, *Energy Conservation*, the Project would have no impact regarding local and regional energy supplies and capacity; peak and base period demands for electricity and other forms of energy; conflicts with energy standards; or energy resources. Therefore, the Project would not cause or contribute to any cumulative impact related to these criteria (No Impact).

The geographic scope of potential cumulative effects with respect to energy conservation includes the electric grid to which Project power would contribute, areas from which transportation fuels would be provided (for this EIR, publicly available fuel sources in the vicinity of the Project site), and the cumulative projects identified in Table 6.1. Given the very small percentage of the Project's fuel and energy use compared to existing fuel and energy use in the region, the Project's less-than-significant incremental impacts related to the use of large amounts of fuel or energy in a wasteful or inefficient manner and related to adversely affecting existing energy resources are not expected to combine with the incremental impacts of other projects to cause an adverse cumulative impact on energy conservation. The Project would cause less-than-significant incremental impacts with mitigation related to the use of large amounts of fuel or energy in a wasteful or inefficient manner and less than significant impacts related to the adversely affecting existing energy resources. The operational electricity requirements would be negligible. The Project's incremental cumulative impact relating to the consumption of energy would be less than significant.

Project-related transportation impacts would be limited to the construction phase, which could overlap with the transportation needs (including fuel needs) of previously approved past projects, as well as other present or future projects that occur during the Project's construction activities. Regardless, there is no apparent significant cumulative condition to which the Project could contribute, and given the Project's less-than-significant incremental impacts, the Project itself would not cause a significant cumulative impact. Therefore, the Project's incremental impact associated with its use energy would result in a less-than-significant cumulative impact with implementation of Mitigation Measure 4.6-1 (Impact 4.6-1; Class II).

The cumulative projects listed in Table 6-1 could require increased peak and base energy demands and, therefore, could cause or contribute to adverse cumulative conditions. The objectives of the Project are to serve existing and long-term projected electrical demand requirements and to improve the reliability and system operational flexibility within in the Electrical Needs Area. Adverse Project-related impacts to electricity demand would be negligible, would not significantly impact peak or base power demands during Project construction, operation, or maintenance, and would be offset by Project-related benefits in this regard. Accordingly, the Project's less-than-significant incremental contribution to cumulative peak and base demands would not be cumulatively considerable (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.7 Geology and Soils

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. Geologic conditions can vary significantly over short distances creating entirely different effects elsewhere. Unless a project would alter the soils and rock underlying other adjacent projects or affect surrounding land due to landslides, impacts related to geologic, soils, and seismic hazards would be limited to the Project site. The geographic scope of cumulative impacts related to geologic, soils, or seismic hazards therefore includes the Project sites and alignments and any projects immediately adjacent to them (#6, #8, #9, #10, #12, #17, #26, #29, #30, #31, #33, #37, #58, #69, #76, #77).

Significant impacts of the Project include: exposure of people and structures to seismic ground shaking (Impact 4.7-1) and liquefaction (Impact 4.7-2); exposure of soil to erosive forces (Impact 4.7-3); and placement of structures on unstable or expansive soil (Impacts 4.7-4 and 4.7-5). However, with the incorporation of Mitigation Measures 4.3-1a and 4.7-2, all geologic, soils, and seismic hazard impacts that would be associated with the Project would be less than significant (Class II and Class III).

With regard to seismic hazards, the Project area is currently subject to very strong ground shaking, and the Project sites and alignments could experience liquefaction and related effects in the event of an earthquake on a nearby fault. With regard to soil stability hazards, excavation and grading could destabilize soils at the Project sites and alignments. However, as discussed in Impacts 4.7-1, 4.7-2, 4.7-4, and 4.7-5, all of the Project components would be designed and constructed in accordance with the most current engineering standards for seismic safety and soil stability, which would reduce the potential for damage. In addition, the cumulative projects listed in Table 6-1 would be engineered and designed according to the California Building Code, and would be required to comply with Cal/OSHA regulations during construction. For these reasons, the proposed Project along with the development projects identified above in Eastvale, Chino, Ontario, Norco, and Corona on seismic hazards would not cause a significant cumulative impact, and the Project's incremental contribution to the impacts would not be cumulatively considerable (Class II).

The Project along with other projects in the geographic scope could cumulatively result in the loss of substantial amounts of soil due to erosion during construction; however, the cumulative projects greater than 1 acre would be required to comply with the Construction General Permit, which includes stormwater and dust control measures designed to reduce soil loss. Compliance with these requirements would ensure the cumulative effect on soil loss would not be cumulatively considerable and the associated cumulative impact would be less than significant (Class II).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.8 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions are inherently a cumulative concern, in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact on global climate change (OPR, 2008). Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on impacts associated with potential conflicts with California's reduction goals set forth in Executive Order S-3-05, Executive Order B-30-15, Assembly Bill (AB) 32 and the Project's direct and/or indirect generation of GHG emissions. The Project would result in less-than-significant emissions of GHGs and would not conflict with the state's GHG reduction goals (Impact GHG-4.8-1). Therefore, the Project-specific incremental impact associated with GHG emissions would not contribute to a significant cumulative impact, and the incremental impact would be less-than-cumulatively-considerable and less than significant (Class III). The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.9 Hazards and Hazardous Materials

Several of the cumulative projects identified in Section 6.1 would be within the immediate vicinity of the Project, including freeway expansions, and residential, commercial, and mixed-use developments. Construction of these projects would require similar handling and use of hazardous materials as the Project, and could pose a hazard to the public and the environment in the event of an accidental spill or leak or if it causes a release of previously unidentified hazardous materials into the environment. If hazardous materials from a spill or leak or from a release of previously unidentified hazardous materials into the environment associated with one of these projects were to combine with hazardous materials from a spill or leak or from a release of previously unidentified hazardous materials into the environment associated with the Project, a significant cumulative impact could occur. However, implementation of Mitigation Measure 4.9-1 would ensure that the Project's contribution to this cumulative impact would be less than cumulatively considerable (Impacts 4.9-1 and 4.9-2; Class II).

The Project would be constructed within 0.25 mile of five existing schools as described in Impact 4.9-3. However, only Auburn Middle School would be in the immediate vicinity of one of the cumulative projects (i.e., River Road Reclaimed Water Line) and the Project. Depending on the timing of construction, hazardous emissions from this cumulative project and the proposed Project could combine and pose a significant cumulative health risk to people at Auburndale Intermediate School. However, the impact associated with the Project would be reduced to less than significant with implementation of Mitigation Measures 4.3-2a, 4.3-2b, and 4.9-3 (Impact 4.9-3; Class II); therefore, the Project would not be cumulatively considerable.

Similar to the proposed Project, construction activities associated with the cumulative projects could require temporary lane closures. If lane closures associated with the cumulative projects occur in the immediate vicinity and same time as lane closures associated with the Project, a significant cumulative impact to emergency vehicle access to and through the construction areas

could result. Implementation of Mitigation Measure 4.17-1 would ensure that the Project's contribution to the impact would not be cumulatively considerable (Impact 4.9-5; Class II).

Same as for the proposed Project, many of the projects listed in Table 6-1 are in areas of moderate and very high fire threat classification. If the cumulative projects are constructed in the same vicinity and at the same time as the proposed Project, heat and sparks from equipment associated with the projects could combine to increase the probability of causing a wildfire, which would be significant cumulative impact. However, implementation of Mitigation Measure 4.9-6 would supplement APM HAZ-02 by requiring the preparation of a Fire Safety Plan and availability of appropriate fire protection equipment during construction. With implementation of this mitigation measure, the construction-related fire hazard impact associated with the Project would be reduced to less than cumulatively considerable (Impact 4.9-6; Class II). The types of cumulative projects listed in Table 6-1 do not appear to be capable of causing an aviation safety hazard for people residing or working the Project area, cause electric shocks in the vicinity of the Project, or cause a long-term operational fire hazard; therefore, there would be no cumulative impact associated with aviation safety, shock hazards, or operational fire hazards.

6.2.10 Hydrology and Water Quality

The geographic scope of cumulative impacts related to hydrology and water quality encompasses the watersheds, flood hazard areas, and groundwater basins affected by the proposed Project. The Project is located in the Santa Ana River watershed. Impacts related to current and future flooding would include projects north and south of the Santa Ana River (#1, #2, #4, #5, #6, #8, #9, #12, #13, #15, #16, #18, #19, #21, #22, #23, #25, #26, #28, #33, #53, #69, #70, #79, #80) that entail construction of new impervious surfaces in the basins that drain to the Santa Ana River and Temescal Wash . Construction of these new impervious surfaces could cumulatively exacerbate flood conditions. The Project would temporarily affect groundwater because groundwater encountered in the Chino and Temescal groundwater subbasins in Project-related excavations during construction would be pumped and potentially removed from the site and dispersed of at an off-site disposal facility (Impact 4.10-2; Class III). This analysis assumes that construction and operation of other projects in the geographical area would be required to comply with the same regulatory requirements (e.g., the National Pollutant Discharge Elimination System (NPDES) Program, Aboveground Petroleum Storage Act of 1990) as the Project, which would serve to avoid and reduce many impacts to less-than-significant levels on a project-by-project basis.

During operation and maintenance of the proposed Project, water quality could be compromised by sediment and other pollutants entering stormwater runoff from areas of maintenance activities. In addition, the Project would alter drainage patterns by adding new impervious areas that could affect erosion and sedimentation on or offsite. While many of the projects in the geographic scope could result in similar impacts, these projects would be required to comply with the Construction General Permit, the De Minimus dewatering permit, and the regional MS4 permit (described in Section 4.10.1). Thus, cumulative impacts to water quality and associated with altering drainage patterns would not be significant (Impacts 4.10-1 and 4.10-3; Class III).

The proposed Project and the cumulative projects listed above would include ground disturbance associated with maintenance activities that could result in cumulative water quality and hydromodification impacts to the Santa Ana River watershed. As discussed in Section 4.10.1, the water quality in the Santa Ana River Region is compromised by high total dissolved solids and nitrate, which generally result from the repeated use of water for municipal and industrial operations and from runoff from dairies, respectively. The ground disturbance associated with maintenance activities at these cumulative project sites would not substantially contribute to these particular water quality impairments because the Project would not use water during operations and would not result in land uses that generate nitrate-enriched runoff. The cumulative impact of these projects would thus be less than significant, and no mitigation would be required (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.11 Land Use and Planning

The proposed Project and alternatives would result in no impact relating to physical division of an established community, nor would they conflict with any applicable habitat conservation plan or natural community conservation plan. Also, as discussed in Section 4.11, the proposed Project and alternatives would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project. Because the proposed Project or an alternative would have no impact pertaining to land use and planning resources, the Project could not combine with impacts of past, present, or reasonably foreseeable future projects to cause or contribute to a cumulative land use and planning-related impact (No Impact). The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.12 Mineral Resources

The California Geological Survey defines geographic regions that collectively cover a single mineral classification study area as “Production-Consumption Regions.” For aggregate materials, these regions generally include existing metropolitan areas, areas expected to urbanize, and any resource areas providing or expected to provide aggregate materials to the urbanized and urbanizing areas. The Project alignment is within the Orange County-Temescal Production-Consumption Region (P-C Region) for aggregate. The geographic scope of cumulative impacts to mineral resources is therefore the Orange County-Temescal Production-Consumption Region. Impacts would be limited to the material removed during construction, as operation would occur in areas within SCE right-of-way or within streets, where mineral resources are already unavailable. Other projects that excavate and remove material from the P-C Region or otherwise result in the loss of availability of known mineral resources would cause impacts similar to those of the Project. It is conservatively assumed that all projects within the P-C region (all projects listed in Table 6-1 within Riverside County) would result in the removal of sand and gravel and could develop the area such that mineral resource availability is lost. As noted above, the P-C Region is projected to exhaust existing permitted reserves (approximately 297 million tons) within 11 to 20 years. The combined effect of the cumulative projects within the Orange County-

Temescal P-C Region would be significant. Conservatively assuming all excavated material generated by the project is within a known mineral resource, the project would remove approximately 53,300 tons of material, or approximately 0.02 percent of the permitted reserves in the P-C Region. The Project's contribution to impacts on accessibility to known mineral resources would not be cumulatively considerable (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.13 Noise

Construction of the proposed Project would result in significant and unavoidable impacts with implementation of Mitigation Measures 4.13-2a and 4.13-2b related to causing a substantial temporary increase in ambient noise levels at sensitive receptor locations. Although several components of Mitigation Measures 4.13-2a and 4.13-2b would likely reduce the annoyance that would be associated with increased ambient noise levels associated with loud construction activities of the Project, it is not possible to firmly substantiate that implementation of these measures would achieve the noise level reductions needed to mitigate the impact to a less-than-significant level. There would be no proposed Project vibration-related impacts. Long-term operation and maintenance-related noise impacts associated with the proposed Project would be less than significant; however, these incremental noise-related impacts could combine with noise generated by projects in the cumulative scenario to cause or contribute to a significant cumulative effect.

Noise levels tend to diminish quickly with distance from a source; therefore, the geographic scope for cumulative impacts associated with noise would be limited to projects located within approximately 1,000 feet of the proposed Project. As shown in Figure 6-1, *Cumulative Projects in the Project Vicinity,* there are over 20 cumulative projects that would be located within 1,000 feet of the proposed Mira Loma-Jefferson subtransmission line and substation source line alignments that are reasonably foreseeable and could be constructed simultaneously with the proposed Project.

These cumulative projects include industrial, commercial, residential, medical, and school developments, as well as storm drain, road, pipeline, and well projects. If construction of these projects were to occur simultaneously and in the immediate vicinity with construction of the proposed Project, there would be a potential for the proposed Project's contribution to combine with the cumulative project noise levels at nearby sensitive receptors to increase to the point where they would exceed the short-term construction significance threshold (i.e., 80 A-weighted decibels [dBA] equivalent noise level [L_{eq}]) at nearby sensitive receptor locations. Implementation of Mitigation Measures 4.13-2a and 4.13-2b is recommended to require SCE and/or its construction contractors to reduce proposed Project noise levels and the associated nuisance at sensitive receptor locations to the extent practical. However, as explained in the Impact 4.13-2 discussion, it is not possible to firmly substantiate that implementation of these measures would achieve the noise level reductions needed to mitigate the Project's contribution to the cumulative impact to a less-than-significant level. Therefore, the proposed Project-specific

incremental contribution to cumulative conditions during construction would be cumulatively considerable, and the associated cumulative impact would be significant (Class I).

During operation of the proposed Project, the main sources of noise would be the facilities at Circle City Substation, corona discharge along the subtransmission line and source lines, and routine operation and maintenance activities. However, these sources would not substantially increase ambient noise levels at the nearest sensitive receptor locations, and would not cause a cumulatively considerable contribution to noise generated by other projects in the affected area. The operational cumulative impact would be less than significant (Impact 4.13-1; Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.14 Population and Housing

As analyzed in Section 4.14, the Project would have no impact regarding displacement of people or housing units, necessitating the construction of replacement housing elsewhere. Therefore, the Project would not cause or contribute to any cumulative impact related to these criteria.

The geographic context for the cumulative impacts associated with population and housing issues are Riverside and San Bernardino counties and the cities of Chino, Corona, Eastvale, Norco, and Ontario. The analysis assumes full build-out of the Project, in combination with build-out of the projects listed in Section 6.1. Riverside and San Bernardino counties are expected to undergo substantial growth over the next two decades. By 2020, the population of Riverside County is expected increase 18 percent from 2010 levels to 2,592,000 persons. The population of San Bernardino County is expected to increase by 11 percent from 2010 to 2020 and reach approximately 2,268,000 persons (CDOF, 2013; SCAG, 2012).

The projects listed in Section 6.1 include numerous phased subdivisions for single- and multi-family residences. These projects, as well as other future development, would be subject to the applicable city and/or county planning process, as well as environmental review on a project-by-project basis. It is reasonable to assume that these projects in combination with the proposed Project would result in a significant cumulative impact regarding population growth. However, the proposed Project‘s contribution to the cumulative impact would not be considerable as it would not include new homes or businesses; demand for temporary construction worker housing would be accommodated by existing units; and the availability of electrical capacity provided by the Project would not encourage growth. Therefore, the cumulative impact would be less than significant (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.15 Public Services

As described in Section 4.15, *Public Services*, the proposed Project would result in no impact to public services. Therefore, the proposed Project would not cause or contribute to a significant cumulative impact to public services (No Impact).

6.2.16 Recreation

The proposed Project would have no impact regarding the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the Project would not cause or contribute to a significant cumulative impact related to this criterion.

The geographic scope for potential recreation impacts is the regional recreational facilities in the project area, generally located within Riverside and San Bernardino counties and the cities of Chino, Corona, Eastvale, Norco, and Ontario. The past, present, and reasonably foreseeable future projects described in Section 6.1 include several residential development projects that could increase the use of existing parks and recreational facilities such that substantial physical deterioration would occur or be accelerated. Impacts from the Project would occur at any given recreational facility for only up to a few weeks during the estimated 18-month construction period, and would not increase demand on existing recreational facilities during Project operation; therefore, the Project would not result in substantial physical deterioration of recreational facilities in conjunction with demand generated for such facilities by other cumulative projects. The cumulative impact would be less than significant (Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.17 Transportation and Traffic

The geographic context for the cumulative impacts associated with transportation and traffic issues is primarily limited to the areas where transportation facilities (e.g., roads and railroads) would be crossed during conductor stringing activities and subtransmission line corridor construction.

Project construction activities, as described in Chapter 2, *Project Description*, could have a temporary construction-related impact on local traffic flow in the Project area as street closures may be required. These closures could potentially disrupt traffic flow and access routes to mass transit (train stations). In conjunction with other construction projects identified in Table 6-1, potential cumulative impacts could occur. For example, Caltrans/Riverside County Transportation Commission has proposed to construct one or two tolled express lanes in each direction on I-15 in the vicinity of the area associated with the Project (#80). Riverside County Transportation Department has likewise proposed improvements to Limonite Avenue / I-15 Interchange (#82). If either of these projects were to occur at the same time, significant cumulative traffic impacts could result at certain access locations to the Project. Implementation

of APM TRA-01 would result in the minimized use of SR 91 to reduce the cumulative effect of simultaneous construction activities. In accordance with Mitigation Measure 4.17-1, SCE would consult and coordinate with local jurisdictions during preparation and implementation of a Traffic Management Plan (TMP) to ensure the safe and efficient transit of vehicles (including emergency vehicles), trains, bicyclists, and pedestrians adjacent to laydown and work areas. Jurisdictions such as the cities and counties affected by the Project, and Caltrans, require traffic management measures, in the form of a TMP (prepared as part of jurisdictions' encroachment permit requirements), to reduce or avoid impacts caused by construction activities. The other construction projects identified in Table 6-1 would be required to prepare and implement their own TMP, and it is reasonably expected that the affected jurisdictions, as part of their review of TMPs, would ensure coordination of traffic management measures for concurrent construction projects. Implementation of Mitigation Measure 4.17-1 would ensure that the proposed Project's contribution to any transportation and traffic-related cumulative impacts during construction would not be cumulatively considerable, and the associated cumulative impact would be less than significant with mitigation (Impacts 4.17-1 and 4.17-5 through 4.17-7; Class II).

It appears that the only cumulative project listed in Table 6-1 that would be tall enough to possibly effect aviation safety is a telecommunication facility disguised as a 50-foot-tall monopalm (#56); however, this project is not located in the immediate vicinity of Chino Airport or Corona Airport and would be outside of the 100-to-1 surface ratio relative to the airport runways. There would be no cumulative effect when combined with the Project. During operation, the increase in traffic due to maintenance activities to maintain the new subtransmission and source lines and the associated corridors would be inconsequential (fewer than 10 vehicle trips per day). Operation of the Project combined with operations of the cumulative projects would not result in cumulative significant transportation and traffic impacts, the associated cumulative impacts would be less than significant (Impacts 4.17-2 and 4.17-3; Class III).

The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

6.2.18 Utilities and Services Systems

The geographic scope for utilities and service systems is the service area of affected utilities and service systems, generally limited to Riverside and San Bernardino counties and the cities of Chino, Corona, Eastvale, Norco, and Ontario. As discussed in Section 4.18, the Project would result in less-than-significant effects regarding water, wastewater, storm water, and solid waste services. The past, present, and reasonably foreseeable future projects described in Section 6.1 include several residential and industrial development projects. These cumulative projects in combination with the proposed Project could increase the demand on existing utility providers within the Project vicinity by increasing the population that would use such services and facilities and result in a significant cumulative impact. However, impacts from the Project would occur primarily during the estimated 18-month construction period and would not substantially increase demand on utilities once construction is complete. Therefore, the Project would result in a less than considerable contribution to cumulative demand for utilities and service systems and the

impact would be less than significant (Class III). The cumulative impacts that would be associated with the alternatives would be similar to those discussed above for the proposed Project.

References – Cumulative Effects

California Department of Conservation (DOC), 2014a. Riverside County 1984-2014 Land Use Summary. Available at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/Riverside.aspx.

California Governor's Office of Planning and Research (OPR), 2008. Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review. June 19, 2008. Available at opr.ca.gov/docs/june08-ceqa.pdf.

DOC, 2014b, San Bernardino County 1984-2014 Land Use Summary. Available at: http://www.conservation.ca.gov/dlrp/fmmp/Pages/SanBernardino.aspx.

California Public Utilities Commission (CPUC), 2016. Southern California Edison's Riverside Transmission Reliability Project webpage. Available online at: http://www.cpuc.ca.gov/Environment/info/panoramaenv/RTRP/index.html. Accessed on May 2016.

City of Chino, 2017. Personal communication between Brian Sitton, Community Development Department Assistant Planner, and Matt Fagundes of Environmental Science Associates, March 16, 2017.

City of Corona, 2016a. Cumulative Project List. January 2016.

City of Corona, 2016b. Corona Capital Improvement Projects for the Southern California Edison Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project. June 2016.

City of Corona, 2017. Personal communication between Joanne Coletta, City of Corona Community Development Director, and Matt Fagundes, Environmental Science Associates, March 14 and March 21, 2017.

City of Eastvale, 2017a. Eastvale Planning: Major Projects Summary. January 18, 2017.

City of Eastvale, 2017b, Staff Report, Public Works Department Update, January 25, 2017.

City of Norco, 2016. Approved and Pending Projects. February 2016.

City of Ontario, 2016. Armstrong Ranch Specific Plan Draft Environmental Impact Report, September 28, 2016.

Riverside County Transportation Commission (RCTC), 2016a. I-15 Express Lanes Project. Available at http://rctc.org/projects/interstate-15/i-15-corridor-improvement-project. Accessed on May 5, 2016.

Riverside County Transportation Commission (RCTC), 2016b. SR-91 Project. Available at http://rctc.org/projects/state-route-91/sr-91-corridor-improvement-project. Accessed on May 5, 2016.

Riverside County Transportation Department (RCTD), 2016. Limonite/I-15 Interchange. Available at http://rcprojects.org/limoniteinterchange/. Accessed on May 26, 2016.

Southern California Edison (SCE), 2015. Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project Proponent's Environmental Assessment (December 2015), p. 6-3 – 6-14

SCE, 2016. Responses to CPUC Data Request No. 2 for the Circle City Substation and Mira Loma-Jefferson Substation Line Project, received via e-mail, May 19, 2016.

Urban Crossroads, 2016. Kimball Business Park Traffic Impact Analysis. February 2016.

CHAPTER 7
Other CEQA Considerations

7.1 Significant Unavoidable Environmental Effects

Section 15126.2(b) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) identify significant environmental effects of the proposed Project that cannot be avoided, including those that can be mitigated, but not to a less-than-significant level. The proposed Project's significant unavoidable impacts are described in Chapter 4 of this Draft EIR, and summarized here. The proposed Project would result in long-term impacts to aesthetics and short-term impacts to air quality and associated with noise that even with implementation of mitigation measures, would remain significant and unavoidable. The proposed new subtransmission line poles would adversely affect scenic vistas (Impact 4.1-1) and would substantially degrade the existing visual character or quality of the Project sites and its surroundings (Impact 4.1-3). Construction activities from the proposed Project would generate fine particulate matter (PM_{10}) and nitrogen oxides (NO_x) emissions that would conflict or obstruct with the applicable air quality plan (Impact 4.3-1); could contribute substantially to a violation of an air quality standard (Impacts 4.3-2); and would result in impacts that would be cumulatively considerable (Impact 4.3-4). Construction activities also would expose sensitive receptors to harmful pollutant concentrations of PM_{10} (Impact 4.3-6). Construction activities from the proposed Project would result in a substantial temporary increase in ambient noise levels at sensitive receptor locations that would remain significant and unavoidable even with implementation of mitigation measures (Impact 4.13-3).

As discussed in Chapter 3, *Project Alternatives*, a number of alternatives were analyzed to determine if they could meet the most basic proposed Project objectives while avoiding or minimizing the significant impacts associated with the proposed Project. None of the identified alternatives that would meet the essential objectives and feasibility criteria would reduce air quality and noise impacts associated with the proposed Project to a less-than-significant level. Alternative C1 would eliminate the significant aesthetics impact for an approximately 0.4-mile-long segment of the proposed Mira Loma-Jefferson subtransmission line by placing the subtransmission line underground; with implementation of Alternative C1, this impact would not be significant and unavoidable. Alternative D1 would eliminate the significant impacts to visual character and quality and to scenic vistas associated with the proposed substation source lines by replacing the proposed Circle City Substation and source lines components of the Project with a distribution-level battery storage facility; with implementation of Alternative D1, this impact would not be significant and unavoidable.

7.2 Significant Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires that an EIR identify significant irreversible environmental changes that would be caused by the proposed Project. These changes may include, for example, uses of non-renewable resources, or provision of access to previously inaccessible areas, as well as project accidents that could change the environment in the long-term. Development of the proposed Project would require a permanent commitment of natural resources resulting from the direct consumption of fossil fuels, construction materials, the manufacture of new equipment that largely cannot be recycled at the end of the proposed Project's useful lifetime, and energy required for the production of materials.

Furthermore, construction of the proposed Project could also result in loss of a nominal amount of habitat from pole bases and access roads that provide habitat that can support special-status species. However, as evaluated in Section 4.4, *Biological Resources*, while the proposed Project would impact biological resources, with implementation of mitigation and applicant proposed measures, impacts to biological resources would be less than significant.

Operation of the proposed Project would allow for the transport of additional electrical power generated from renewable and non-renewable resources, although the proposed Project itself would not require the future use of specific amounts of non-renewable resources. While the proposed Project would facilitate the delivery of electrical power generated from non-renewable resources (e.g., natural gas), these resources would be exploited and expended now and in the near future regardless of the proposed Project, as the production and use of the carbon-based products that would become electricity transported by the proposed Project has been, or will be, approved by permitting agencies. Therefore, the primary and secondary impacts resulting from the proposed Project would be less than significant.

Accidents, such as the release of hazardous materials, could trigger irreversible environmental damage. As discussed in Section 4.9, *Hazards and Hazards Materials*, construction of the proposed Project would involve limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc., in order to fuel and maintain vehicles and other motorized equipment. An accidental spill of any of these substances could impact water and/or groundwater quality and, if a spill were to occur of significant quantity, the release could pose a hazard to construction workers and the public, as well as the environment. Considering the types and minimal quantities of hazardous materials that would be used for the proposed Project and the emergency response plans and other procedures that would be required by the recommended mitigation measures, accidental release is unlikely. State and federal regulations and safety requirements, as described in the regulatory setting in Section 4.9, would ensure that public health and safety risks would be maintained at acceptable levels, so that significant irreversible changes from accidental releases are not expected.

7.3 Growth-Inducing Effects

CEQA requires a discussion of the ways in which a project could induce growth. CEQA Guidelines Section 15126.2(d) identifies an impact as growth-inducing if it fosters economic or population

growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. New employees hired for proposed commercial and industrial development projects and population growth resulting from residential development projects represent direct forms of growth. Other examples of projects that are growth-inducing are the expansion of urban services into a previously unserved or under-served area, the creation or extension of transportation links, or the removal of major obstacles to growth. It is important to note that these direct forms of growth have secondary effects of expanding the size of local markets and attracting additional economic activity to the area.

A project would be considered growth-inducing if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Growth-inducing impacts could also occur if the project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

7.3.1 Growth Caused by Direct and Indirect Employment

As described in the Project Description (see Section 2.6, *Construction*), the number of workers required during peak construction would be a maximum of approximately 100 construction personnel working on any given day. The proposed Project construction activities would be temporary, estimated to last approximately 18 months. It is anticipated that all temporary positions would be filled from the local labor pool available in Riverside and San Bernardino counties, with workers expected to commute to the site rather than move. However, some construction personnel may need temporary accommodations. There is an adequate supply of hotels and motels in the proposed Project area that could be utilized by the out-of-town personnel. Therefore, no growth in housing needed for construction workers would occur.

As described in the Project Description (see Section 2.7, *Operation and Maintenance*), proposed Project operation and maintenance would require minimal staffing that would be handled by current SCE employees. Therefore, no new permanent jobs would be created. Overall, employment generated by the proposed Project would have no impact on population growth or new housing, because any short-term housing demand created during construction could be accommodated by existing units and no long-term growth would result from operation and maintenance of the proposed Project.

7.3.2 Growth Related to Provision of Additional Electric Power

Construction of the proposed Project is needed to meet electric system reliability and planned demand in the Electrical Needs Area of the Mira Loma System. The proposed Project would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario. Therefore, the proposed Project is designed to increase reliability and accommodate existing and planned electrical load growth, and would not induce growth.

Growth in the Mira Loma System is planned and regulated by applicable local general plans and planning and zoning ordinances. The provision of electricity is generally not considered an obstacle to growth nor does the availability of electrical capacity by itself normally ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth. Therefore, the proposed Project would not indirectly induce economic, population, or housing growth by providing additional electric power.

7.4 Environmental Justice

Subsequent to the formal scoping period for the Project, CPUC received two letters from the public that expressed concerns related to the potential disproportionate effects of the Project on certain communities. Specifically, comments addressed concerns about adverse visual impacts on residential neighborhoods that may affect property values and residents' experience of the streetscape. This section addresses those concerns.

7.4.1 Regulatory Background

A CEQA Lead Agency may use information about the economic or social impacts of a project to determine the significance of physical changes caused by the project, but the economic or social effects of a project are not treated as significant effects on the environment.

Per CEQA guidelines Section 15131, "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires." The section continues:

a) Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

b) Economic or social effects of a project may be used to determine the significance of physical changes caused by the project. […] Where an EIR uses economic or social effects to determine that a physical change is significant, the EIR shall explain the reason for determining that the effect is significant.

c) Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR. […]

The Office of the California Attorney General (OAG) has clarified that environmental justice concerns are relevant to the analysis of a project under CEQA, and has recommended that lead agencies address environmental justice by evaluating whether a project's impacts would affect a community whose residents are particularly sensitive to the impact (i.e., sensitive receptors) and whether a project would have significant effects on communities when considered together with any environmental burdens, those communities already are bearing, or may bear from probable

future projects (i.e., cumulative impacts). Additionally, OAG indicates that a CEQA lead agency must be clear and transparent in its Statement of Overriding Considerations about the balances it has struck in approving a project, such as whether the benefits of the project will be enjoyed widely, but the environmental burdens of a project will be felt particularly by the neighboring communities (OAG, 2012). The information presented in this section will inform such a statement if the proposed Project is approved.

7.4.2 Environmental Justice Considerations

7.4.2.1 Impacts on Sensitive Receptors and Cumulative Environmental Burdens

The environmental impacts of the proposed Project and alternatives to the Project on sensitive receptors are analyzed in the EIR in the following sections: Section 4.3, *Air Quality*; Section 4.9, *Hazards and Hazardous* Materials; and Section 4.13, *Noise*. The proposed Project's impacts together with existing or foreseeable environmental burdens experienced by nearby communities are considered in Chapter 6, *Cumulative Effects*. Impacts of the proposed Project and alternatives on sensitive receptors include:

Air Quality

- *Proposed Project*: Construction activities would expose sensitive receptors to harmful pollutant concentrations of $PM_{2.5}$ and PM_{10}. (Impact 4.3-6, significant and unavoidable)
  - Alternatives B, C1, C2, C3, D2, E1, E2, E3, and E4: Significant and unavoidable, approximately the same as for the proposed Project
  - Alternative D1: Less than significant, reduced compared to the proposed Project because emissions associated with construction of the distribution-level battery storage facility would be well below allowable emissions thresholds
- *Proposed Project*: Construction activities could expose local sensitive receptors to emissions of diesel particulate matter. (Impact 4.3-7, less than significant with mitigation)
  - Alternative B: Less than significant, reduced compared to the proposed Project because there would be no toxic air contaminants (TAC) emissions from construction of a substation, and the residents at the Corona La Linda Mobile Home Park would not be exposed to an incremental carcinogenic health risk impact
  - Alternatives C1 and C2: Less than significant with mitigation, approximately the same as for the proposed Project
  - Alternative C3: Significant and unavoidable, increased compared to the proposed Project because if the 40 MW battery facility and the Circle City Substation both are approved and constructed adjacent to the each other, the maximum pre-mitigation incremental cancer risk at the nearest residences would increase to 24.0 in one million, and effectiveness of mitigation cannot be substantiated for this combination
  - Alternative D1: Less than significant, reduced compared to the proposed Project because the maximum incremental increase in carcinogenic risk associated with construction of the distribution-level battery storage facility would be roughly half that of the proposed substation

  - Alternative D2: Significant and unavoidable, with a substantially higher pre-mitigation maximum incremental construction-related increase in carcinogenic risk than 12 in one million at the closest sensitive receptors compared to the proposed Project
  - Alternatives E1, E2, E3, and E4: Less than significant with mitigation, approximately the same as for the proposed Project

- *Proposed Project*: Construction activities could expose local sensitive receptors to *coccidioides immitis* (Valley fever-causing) spores. (Impact 4.3-8, less than significant with mitigation)
  - Alternatives B, D1, E3, and E4: Less than significant with mitigation, but slightly reduced compared to the proposed Project due to less ground disturbance
  - Alternatives C1, C2, C3, D2, E1, and E2: Less than significant with mitigation, but slightly increased compared to the proposed Project due to greater ground disturbance

Hazards and Hazardous Waste

All of the conclusions below are explained in detail in Draft EIR Sections 4.9.4 (for impacts of the proposed Project) and 4.9.5 (for impacts of the alternatives).

- *Proposed Project*: Construction activities could release hazardous materials within the vicinity of an existing school. (Impact 4.9-3, less than significant with mitigation)
  - Alternative B: Less than significant with mitigation, but slightly reduced compared to the proposed Project due to less construction
  - Alternative C1, D1, D2, E1, E2, E3, and E4: Less than significant with mitigation, approximately the same as for the proposed Project
  - Alternative C2: Less than significant with mitigation, but slightly increased compared to the proposed Project due to proximity to additional schools
  - Alternative C3: Less than significant, reduced compared to the proposed Project due to greater distance from schools

Noise

All of the conclusions below are explained in detail in Draft EIR Sections 4.13.4 (for impacts of the proposed Project) and 4.13.5 (for impacts of the alternatives).

- *Proposed Project*: Construction activities would cause a substantial temporary increase in ambient noise levels at sensitive receptor locations. (Impact 4.13-~~3~~2, significant and unavoidable)
  - Alternative B: Significant and unavoidable, but reduced compared to the proposed Project because the significant impacts associated with the proposed source lines would not occur
  - Alternative C1, E1, and E2: Significant and unavoidable, approximately the same as for the proposed Project

- Alternative C2: Significant and unavoidable, but increased compared to the proposed Project because more residences would be exposed to significant noise levels due to the alternative's more densely populated area
- Alternative C3: Significant and unavoidable, but increased compared to the proposed Project because the sensitive receptor noise exposure periods associated with construction of the battery storage facilities would be much longer (i.e., up to a year), compared to the exposure periods that would be experienced relative to construction of the Mira Loma-Jefferson subtransmission line (i.e., up to several weeks)
- Alternative D1: Less than significant, reduced compared to the proposed Project given that construction of the substation source lines would not occur
- Alternative D2: Significant and unavoidable for nighttime construction (increased compared to the proposed Project), mitigated to less than significant for daytime construction (reduced compared to the proposed Project)
- Alternative E3: Significant and unavoidable, but increased compared to the proposed Project because there are more sensitive receptors adjacent the Alternative E3 alignment than the Databank Source Lines alignment
- Alternative E4: Significant and unavoidable, but reduced compared to the proposed Project because the sensitive receptors along the proposed Pedley Source Lines alignment would not be exposed to construction noise

Summary

As described above, Alternative B would reduce TAC emissions, benefiting the residents at the Corona La Linda Mobile Home Park, and overall, less ground disturbance and construction would occur that could cause dust- and noise-related impacts.

Alternative D1 would reduce several impacts on sensitive receptors compared to the proposed Project. Emissions associated with construction of the distribution-level battery storage facility would be below allowable emissions thresholds, the maximum incremental increase in carcinogenic risk associated with construction of the distribution-level battery storage facility would be roughly half that of the proposed substation, and overall, less ground disturbance and construction would occur that could cause dust- and noise-related impacts.

Alternatives C3, E3, and E4 would each reduce at least one impact.

From an environmental justice perspective, Alternatives B and D1 would provide the most substantial reductions in impacts on sensitive receptors compared to the proposed Project.

7.4.2.2 Balance of Impacts and Benefits

Construction of the proposed Project is needed to maintain electrical system reliability by addressing overloads on subtransmission lines that could occur under peak electrical demand through 2026. The Project also would ensure that existing substations in the Electrical Needs Area do not exceed their combined capacity under peak electrical demand conditions through 2026. Therefore, the benefits of the Project would occur throughout the Electrical Needs Area,

which includes northwestern Riverside County area, including the cities of Corona and Norco and the surrounding area of unincorporated Riverside County. The Electrical Needs Area is shown in Figure 2-1.

As analyzed in the impacts identified above, the site-specific burdens would occur primarily within the Electrical Needs Area, with some impacts such as air pollutants and noise affecting sensitive receptors along the Mira Loma-Jefferson 66 kV subtransmission line alignment occurring in San Bernardino County, outside of the Electrical Needs Area. These receptors (primarily residences) would experience the burdens of the Project and would not be within the area served by improved electrical reliability. However, compared to the high number of sensitive receptors affected and the greater intensity of impacts within the Electrical Needs Area (because most of the construction would occur within it), temporary impacts outside this area affecting a small number of people would not cause a substantial imbalance of impacts and benefits.

In addition to the impacts on sensitive receptors identified above, letters received on the Project indicate a concern about visual impacts on residential neighborhoods that may affect property values and residents' experience of the streetscape. The CPUC acknowledges these concerns. As described above, the CEQA Guidelines state that "Economic or social effects of a project shall not be treated as significant effects on the environment" and "Economic or social effects of a project may be used to determine the significance of physical changes caused by the project." However, CEQA analyses of visual (aesthetic) impacts focus on effects on public views, not private views. Therefore, potential economic or social effects of Project siting resulting from changes in private views (e.g., changes in residential property values) are not environmental impacts that must be considered in the scope of this EIR. Nonetheless, the comments received on this topic are part of the record for this Project and will be considered along with the EIR at the decision-making stage of this project.

References – Other CEQA Considerations

Office of Attorney General (OAG), 2012. Environmental Justice at the Local and Regional Level Legal Background. Available at: http://oag.ca.gov/sites/all/files/agweb/pdfs/environment/ej_fact_sheet.pdf

CHAPTER 8
Report Preparation

8.1 Report Authors

8.1.1 Lead Agency

California Public Utilities Commission
Energy Division
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

Mr. Robert Peterson	CPUC Project Manager
Ms. Andie Biggs	CPUC Project Manager
Mr. William McGuire	CPUC Project Manager
Ms. Connie Chen	CPUC Project Manager
Mr. Jason Reiger	CPUC Legal Division
Mr. Nicholas Sher	CPUC Legal Division

8.1.2 Consultants

Prime Consultant

ESA
550 Kearny Street, Suite 800
San Francisco, California 94108

Mike Manka	Project Director
Matt Fagundes	Project Manager, Air Quality, Energy Conservation, Greenhouse Gas Emissions, Noise
Cory Barringhaus	Deputy Project Manager, Aesthetics, Agricultural Resources, Land Use and Planning, Public Services, Population and Housing, Utilities and Service Systems
Arabesque Abdelwahed	Hazards and Hazardous Materials; Traffic and Transportation
Robin Hoffman	Cultural Resources
Justin Gragg	Geology and Soils, Hydrology and Water Quality
Jack Hutchison	Transportation and Traffic
Karen Lancelle	Paleontological Resources; Geology and Soils, Hydrology and Water Quality, Mineral Resources

Wes McCullough	Geographic Information Systems (GIS), Graphics
Brian Pittman	Biological Resources
Ron Teitel	Graphics
Monica Strauss	Cultural Resources
Alexandra Thompson	Agriculture, Environmental Justice, Forestry Resources

Subconsultants

Kevala Analytics
4040 Civic Center Drive
San Rafael, California 94903

Aram Shumavon	Distributed Resources Alternatives
Cassandra Quaintance	Distributed Resources Alternatives

Parus Consulting
1508 Eureka Road, Suite 170
Roseville, California 95661

Tom Lagerquist	GIS Support

ZGlobal, Inc.
604 Sutter Street, Suite 250
Folsom, California 92243

Gary Brown, P.E.	Power Flow Analysis, Alternatives Analysis
Marco Salazar, P.E.	Power Flow Analysis, Alternatives Analysis
Brian Rahman, P.E.	Power Flow Analysis, Alternatives Analysis

CHAPTER 9

Mitigation Monitoring and Reporting Program

Draft EIR Chapter 9, *Mitigation Monitoring and Reporting Program*, is provided in full in Appendix F to the Final EIR. All revisions to the mitigation measures as presented in the Draft EIR are incorporated in Final EIR Appendix F. ~~The Mitigation Monitoring and Reporting Program will be included in the Final EIR. For a consolidated list of the Draft EIR Mitigation Measures, refer to Executive Summary Table ES-1, *Summary of Impacts of and Mitigation Measures for the Project.*~~

This page intentionally left blank

Appendix A
Scoping Report

CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV SUBTRANSMISSION LINE PROJECT

Scoping Report

SCH No. Number 2016021012

Prepared for
California Public Utilities Commission

March 2016

CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON 66 KV SUBTRANSMISSION LINE PROJECT

Scoping Report

SCH No. Number 2016021012

Prepared for
California Public Utilities Commission

March 2016

550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900
www.esassoc.com

Irvine

Los Angeles

Oakland

Orlando

Palm Springs

Petaluma

Portland

Sacramento

San Diego

Seattle

Tampa

Woodland Hills

TABLE OF CONTENTS

Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project Scoping Report

	Page
1. Introduction	**1**
2. Description of the Project	**2**
2.1 Project Summary	2
2.2 Project Location	2
3. Scoping Process	**2**
3.1 Notification	2
3.2 Opportunities for Comment	3
3.2.1 Public Workshops and Scoping Meetings	3
3.2.2 Agency Consultation	3
4. Scoping Comments	**4**
4.1 Issues to be Considered under CEQA	10
4.2 Issues Not Analyzed under CEQA	27
5. Consideration of Issues Raised in Scoping Process	**36**

Appendices

A. Notice of Preparation	A-1
B. Newspaper Notices	B-1
C. Scoping Meeting Attendance Sheets	C-1
D. Scoping Meeting Speaker Cards	D-1
E. Public Workshop and Scoping Meeting Presentations	E-1
F. Agency Consultation Meeting Notes	F-1
G. Scoping Meeting Transcripts	G-1
H. Written Scoping Comments	H-1

List of Tables

1. Parties that Submitted Scoping Comments	4

This page intentionally left blank

SCOPING REPORT

Circle City Substation and Mira Loma-Jefferson 66 kV Subtransmission Line Project

1. Introduction

In its California Public Utilities Commission (CPUC) application (A.15-12-007), filed on December 4, 2015, Southern California Edison (SCE) sought a Permit to Construct (PTC) the Circle City Substation and Mira Loma-Jefferson 66 kilovolt (kV) Subtransmission Line Project (Project).

Based on its review of the application and the Proponent's Environmental Assessment (PEA), the CPUC decided to prepare an Environmental Impact Report (EIR) to evaluate the Project, pursuant to the California Environmental Quality Act (CEQA). The CPUC formally began the process of determining the scope of issues and alternatives to be evaluated in the EIR (a process called "scoping") when it issued a Notice of Preparation (NOP) of an EIR for the Project on January 29, 2016.

The NOP initiated agency consultation about the scope and content of information to be analyzed in the EIR and invited early public input about potential environmental concerns (Pub. Res. Code § 21080.4(a); CEQA Guidelines §§ 15082(b), 15083). CEQA Guidelines Section 15083 provides that a "Lead Agency may…consult directly with any person…it believes will be concerned with the environmental effects of the project." Scoping is the process of early consultation with the affected agencies and public prior to completion of a Draft EIR. Section 15083(a) states that scoping can be "helpful to agencies in identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important." Scoping is an effective way to bring together and consider the concerns of affected State, regional, and local agencies, the project proponent, and other interested persons (CEQA Guidelines § 15083(b)).

This Scoping Report provides an overview and a summary of the written and oral comments provided by agencies and individuals during the scoping period, a 30-day period which closed on February 29, 2016. The CPUC will use this Scoping Report as a tool to ensure the preparation of a comprehensive EIR tailored to agency and community concerns. Pursuant to CEQA Guidelines Section 15082, all public comments will be considered in the EIR process.[1]

[1] Comments not within the scope of CEQA will not be addressed through the CEQA process.

2. Description of the Project

2.1 Project Summary

The Project consists of: (1) construction of a new 66/12 kilovolt (kV) substation (Circle City Substation); (2) construction of four new 66 kV subtransmission source lines, which would be in two double-circuit configurations and combinations of overhead and underground construction; (3) construction of a new 10.9 mile 66 kV subtransmission line (Mira Loma-Jefferson Subtransmission Line); (4) upgrade of the existing Mira Loma Substation to accommodate the new Mira Loma-Jefferson Subtransmission Line; (5) construction of approximately six new underground 12 kV distribution getaways exiting the proposed Circle City Substation; (6) relocation of approximately 1.9 miles of an existing 33 kV distribution line to an underground position; and (7) installation of telecommunications facilities to connect the Project to SCE's existing telecommunications system.

2.2 Project Location

In its application, SCE has identified the purpose of this Project as follows: to ensure the availability of safe and reliable electrical service, and to provide additional capacity to serve long-term forecasted electrical demand requirements in the Electrical Needs Area (ENA), while also maintaining or improving system reliability and providing greater operational flexibility. The ENA includes the cities of Corona and Norco, and the surrounding area of unincorporated Riverside County.

The Project subtransmission and/or source lines would be located in portions of northwestern Riverside County, including the cities of Corona, Eastvale, and Norco; and in portions of San Bernardino County, including the cities of Chino and Ontario. The Circle City Substation would be located approximately 0.25 mile south of the corner of Magnolia Avenue and East 6th Street in Corona, and the existing Mira Loma Substation is located off Hamner Avenue near the corner of Cantu-Galleano Ranch Road in Ontario.

3. Scoping Process

3.1 Notification

On Friday, January 29, 2016, the CPUC published and distributed an NOP to solicit input from federal, State, and local agencies on the scope and content of information to be considered in the EIR for the Project. A copy of the NOP was sent to the State Clearinghouse of the Office of Planning and Research, which assigned State Clearinghouse Number 2016021012 as the Project's unique State identification number. The NOP was also sent directly to property owners within 300 feet of the Project routes and locations, as well as to responsible and trustee agencies, individuals that had previously shown interest in the Project, and parties of the Proceeding. The NOP described the Project, included a map showing the location of proposed components of the Project, identified potential areas of environmental impacts, and provided notice for a public participation workshop and Scoping Meeting that was held in Corona on February 17, 2016. It

should be noted that subsequent to the release of the NOP, another public participation workshop and Scoping Meeting date (February 16, 2016) was added (see Section 3.2.1, below). A copy of the NOP is provided in **Appendix A**.

The CPUC also posted newspaper legal advertisements announcing the release of the NOP and the date for the public participation workshop and Scoping Meeting. The announcements were also posted on the CPUC's website. The CPUC published legal advertisements in the San Bernardino Sun and the Press Enterprise on January 29, 2016, and February 13, 2016. Copies of the newspaper notices are provided in **Appendix B**. An electronic copy of the NOP was also posted on the CPUC's website established for the Project at:

www.cpuc.ca.gov/Environment/info/esa/Circle_City/index.html

3.2 Opportunities for Comment

3.2.1 Public Workshops and Scoping Meetings

The CPUC conducted two educational workshops and Scoping Meetings, one on February 16, 2016 at the Circle City Center located at 365 North Main Street, Corona, CA 92880, and one on February 17, 2016, at the Corona Public Library located at 650 South Main Street, Corona, CA 92882. On both dates the workshop was held from 6:00 to 6:30 p.m., and the Scoping Meeting was held from 6:30 to 8:00 p.m. Sixteen members of the public attended on February 16th, and fourteen members attended on February 17th. Connie Chen of the CPUC, as well as Matt Fagundes, Claire Myers, and Michelle Irace of Environmental Science Associates (ESA), consultant to the CPUC, hosted the meeting. The sign-in sheets from the Scoping Meetings are provided in **Appendix C** and the speaker cards are provided in **Appendix D**.

Meeting attendees were provided materials including written comment forms and speaker cards. During the workshop ESA explained the role of participants and summarized the CPUC's decision and environmental review process and the opportunities for public participation within that process. During the Scoping Meetings, a description of the Project and alternatives identified by SCE in its PEA was presented and the range of environmental issue areas to be addressed in the EIR was identified. The meetings also included the solicitation of ideas about other possible Project alternatives, outlined next steps in the environmental review process and allowed for the acceptance of public comments. See **Appendix E** for a copy of the public workshop and Scoping Meeting presentation.

3.2.2 Agency Consultation

In January 2016, on behalf of the CPUC, ESA contacted local agencies and officials and resource agencies to offer information about the environmental review of the Project and solicit input on the scope of the EIR analysis. Agencies and officials contacted included the cities of Corona, Eastvale, Chino, Ontario, and Norco; the counties of Riverside and San Bernardino; and the

California Department of Fish and Wildlife. See **Appendix F** for the agency consultation meeting notes.

On behalf of the CPUC, ESA conducted agency meetings on February 3, 2016, with the City of Corona and the City of Chino, and with the City of Eastvale on February 17, 2016, to receive input on the scope of the EIR analysis.

4. Scoping Comments

Eight members of the public provided oral comments on the Project during the February 16, 2016 public Scoping Meeting and eight members of the public provided oral comments on the Project during the February 17, 2016 public Scoping Meeting (see **Appendix G**). The CPUC received additional comments in writing during the comment period. Copies of the written comments are provided in **Appendix H**. Commenting parties are listed in **Table 1** and summaries of the issues identified by the commenters are provided in Section 4.1, *Issues to be Considered under CEQA*, and Section 4.2, *Issues Not Analyzed under CEQA*. In some cases, the same letter was submitted by multiple individuals. These individuals are listed under Community Letter 1, Community Letter 2, or Community Letter 3. Several community letters were received that were signed with illegible signatures. Although these individuals' names are not identified below, their comments have been acknowledged and summarized under the appropriate community letter, and their letters are provided in **Appendix H**.

TABLE 1
PARTIES THAT SUBMITTED SCOPING COMMENTS

Name	Organization/Affiliation	Date/Received Date
Oral Comments		
Aoun, Michael	Resident	2/16/2016
Bennett, Kirk	City of Corona Planning and Housing Commission, Logos Architecture, Resident	2/16/2016
Haley, Dick	Resident	2/16/2016
Hove, Andrea	Realty One Group Inc., Resident	2/17/2016
Messner, Gary	Downs Energy	2/17/2016
Messner, Sherry	Downs Energy	2/17/2016
Morgan, Joe	Resident	2/16/2016
Richins, Tom (comments read by Bobby Spiegel)	FB / History of Corona	2/17/2016
Rigby, Todd	Resident	2/16/2016
Shamma, Tariq	TMS Consortium	2/17/2016
Simmons, Dickie	Resident	2/17/2016
Spiegel, Bobby	Corona Chamber of Commerce	2/16/2016 and 2/17/2016
Spiegel, Karen	Corona City Council	2/16/2016
Tejura, Krupali	Resident	2/16/2016

Name	Organization/Affiliation	Date/Received Date
Wilson, Kathleen	Resident	2/17/2016
Wilson, Tom	Resident	2/17/2016
Written Comments		
Alrayes, Nidham Aram	San Bernardino County Department of Public Works	2/29/2016
Barnett, Sylvia	Resident	2/19/2016
Bennett, Kirk	City of Corona Planning and Housing Commission, Logos Architecture, Resident	2/17/2016
Bhatt, Arti	Resident	2/29/2016
Brandt, Dennis J	Resident	2/18/2016
Brown, Brenna	Resident	2/17/2016
Brown, Robert	Resident	2/11/2016
Castro, Dee	DCS Publishing, Resident	2/17/2019
Cheryl DeGano	Jurupa Community Services District, Albert A Webb Associates	2/29/2016
Dayal, Rajesh	Resident	2/18/2016
Donaldson, Cathy	Resident	2/18/2016
Fidel, Jodee	Resident	2/23/2016
Flanigan, Kris	Riverside County Flood Control and Water Conservation District	2/23/2016
Garvey, Susan	Resident	2/22/2016
Genis, Joanne	Resident	2/29/2016
Gonzalez, Jean	Resident	2/18/2016
Hernandez, Olga	Resident	2/19/2016
Husted, Dave	Resident	2/18/2016
Indrawan, Joe	City of Eastvale	2/29/2016
James, Charlene	Resident	2/29/2016
James, Darin	Resident	2/29/2016
Joanne Coletta	City of Corona	2/26/2016
Johnson, William	Resident	2/29/2016
King, Kathy	Resident	2/19/2016
Kray, Lydia	Realty One Group Inc., Resident	2/17/2016
Krenzin, Nicole	South Hills Norco Campus, Resident	2/18/2016
Kurdi, Ammar	Resident	2/29/2016
Lenhart, Ronald and Melissa	Residents	2/29/2016
Li, Victor J	Resident	2/29/2016
Lu, Penny	Resident	2/29/2016
Marchido, Tara	Resident	2/17/2016
Markus, Michael R	Orange County Water District	2/29/2016
Marshburn, Jeff	Resident	2/18/2016
Mendez, Lucy	Resident	2/19/2016
Moreno-Camacho, Maria	Resident	2/29/2016

Name	Organization/Affiliation	Date/Received Date
O'Donnell, Betty Jean	Keller Williams Realty, Resident	2/26/2016
Olsen, Matt	Resident	2/3/2016
Oyama, Erin K	Palmieri Tyler	2/29/2016
Peabody, Mark R	Peabody Engineering, Corona Chamber of Commerce, Resident	2/8/2016
Quach, Cindy	Resident	2/29/2016
Rambert, Susan	Resident	2/1/2016
Reinke, Kelly	Resident	2/19/2016
Rust, Julie	Resident	2/29/2016
Schafer, John	Richland Communities, Inc.	2/19/2016
Shah, Rushabh	Resident	2/29/2016
Shamma, Tariq	TMS Consortium	2/17/2016
Tejura, Krupali	Resident	2/17/2016
Voss, Tiffany	Resident	2/29/2016
Wentworth, Michele	Resident	2/16/2016
Wilson, Thomas E and Kathleen G	Residents	2/17/2016
Wong, Jillian	South Coast Air Quality Management District	2/11/2016
Community Letter 1		
Agredano, Adriana	Resident	2/29/2016
Alcazar, Teofila	Resident	2/29/2016
Biller, Bruce	Resident	2/29/2016
Burns, Mike and Sonja	Resident	2/29/2016
Chen, Yinfa	Resident	2/29/2016
Conklin, Cheryl	Resident	2/22/2016
Cui, Jade	Resident	2/29/2016
Da Costa, Christian	Resident	2/29/2016
De La Cova, Jamie G	Resident	2/15/2016
De La Cova, Jennifer	Resident	2/15/2016
Dierks, Michannan and Brian	Resident	2/15/2016
Elias, Janelle	Resident	2/15/2016
Ellis, Haiwan	Resident	2/29/2016
Ellis, Terry	Resident	2/29/2016
Fan, Tianjun	Resident	2/29/2016
Feng, Howard	Resident	2/25/2016
Fisher, Kelly	Resident	2/25/2016
Fotinos, John	Resident	2/29/2016
Fotinos, Shannon	Resident	2/29/2016
Garcia, Evelyn and Joe	Resident	2/29/2016
Garcia, Sarah	Resident	2/15/2016
Garvey, Susan	Resident	3/1/2016

Name	Organization/Affiliation	Date/Received Date
Hoang, Paul	Resident	2/29/2016
Hove, Andrea	Realty One Group Inc., Resident	2/17/2016
Jacques, James and Monica	Resident	3/1/2016
James, Darin and Charlene	Resident	2/15/2016
Jensen, Alicia	Resident	2/26/2016
Jiang, Susan	Resident	3/1/2016
Keo, Monirath	Resident	2/15/2016
Knight, Abby	Resident	2/29/2016
Knight, Matthew	Resident	2/29/2016
Lacambra, Wendy	Resident	2/29/2016
Lee, Easton	Resident	2/29/2016
Lee, Jeremy	Resident	2/29/2016
Lenhart, Ronald and Melissa	Resident	2/29/2016
Li, Jingxin and Yuan, Xiaojuan	Resident	2/29/2016
Li, Liang	Resident	2/29/2016
Li, Ni	Resident	2/29/2016
Li, Pamela	Resident	2/29/2016
Li, Zhaoyi	Resident	2/15/2016
Lin, Almon	Resident	2/29/2016
Liu, Kai	Resident	2/29/2016
Maine, Ryan and Lindsay	Resident	2/29/2016
McBurney, Chris	Carousel Graphics Inc., Resident	2/25/2016
Merilus, Catheline D	Resident	2/15/2016
Morones, Carlos	Resident	2/29/2016
Morones, Melissa E	Resident	2/15/2016
Navarro, Ericka	Resident	2/29/2016
Nguyen, Peter	Resident	2/29/2016
Patricia	Resident	2/15/2016
Paulsen, Gail	Resident	2/29/2016
Ponce, Bernard T	Resident	3/1/2016
Qian Li, Yangchun Shi	Resident	2/29/2016
Rebecca	Resident	2/29/2016
Reed, T	Resident	2/29/2016
Reese, Kelli	Resident	2/25/2016
Rodriguez, Armando and Sylvia	Resident	2/29/2016
Rose	Resident	2/29/2016
Shea, Amy	Resident	2/29/2016
Shea, Mark	Resident	2/29/2016
Smith, Aaron	Resident	2/19/2016
Song, Jessica	Resident	2/15/2016

Name	Organization/Affiliation	Date/Received Date
Sutherland, Kristen	Resident	2/29/2016
Toles, Terry	Resident	2/29/2016
Tran, Son	Resident	2/29/2016
Wang, Hao	Resident	3/1/2016
Wang, Siyang	Resident	2/24/2016
Wayne	Resident	2/29/2016
Wuence, Margo	Resident	2/29/2016
Xu, Ying	Resident	2/29/2016
Yunying Zheng, Ada	Resident	2/29/2016
Zepeda, Fidencio	Resident	2/29/2016
Zhao, Bingbing	Resident	2/24/2016
Zick, Diane	Resident	2/29/2016
Zick, Matthew	Resident	2/15/2016
Community Letter 2		
A, Arturo	Resident	2/29/2016
Agramonte, Al	Ergonomic Comfort Design Inc.	2/17/2016
Ahary, Jason	Resident	2/29/2016
Aldova, Felipe	Simply Fresh Markets	2/29/2016
Anzares, Ansel	Resident	2/29/2016
B, Eileen	Resident	2/29/2016
Baldwin, John W	Resident	2/29/2016
Barilone, Diane	Preferred Choice Printing	2/17/2016
Bates, Linda	Resident	2/29/2016
Carrillo, Alfred	Resident	2/26/2016
Carrillo, Juanita	Resident	2/26/2016
Coelho, Tom and Natalie	IHOP	2/17/2016
Cooley, Greg	Eibach Springs Inc.	2/17/2016
Corrao, Carolyn Anderson	Waste Management of the Inland Empire	2/17/2016
Cortez, George	Resident	2/26/2016
Dominguez, Victor	Resident	2/29/2016
Donner, Beverly	Resident	2/29/2016
Dumont, Lisa	Dumont Property Management	2/17/2016
F, Scott J	LPL Financial	2/29/2016
Galvan, Ernest	Resident	2/29/2016
Garcia, Esperanza	Resident	2/26/2016
Gois, Gayle	Resident	2/29/2016
Griffitts, Johnnie and Elly	Resident	2/17/2016
Gutierrez, Derek J	Authority Mortgage	2/17/2016
Holmes, Cindy	ConnectingU Marketing, Inc.	2/17/2016
Huffman, Mark	Creative Business Technologies	2/17/2016

Name	Organization/Affiliation	Date/Received Date
Juan, George	Resident	2/26/2016
Kelley, Sean R	Kelley Law	2/17/2016
Klein, Sandy	Resident	2/29/2016
L, Danielle	Resident	2/29/2016
Lewis, Elaine	Simply Elegant Gift Baskets	2/29/2016
Lolonado, Ricardo	Resident	2/29/2016
Lopez, Lila	Resident	2/26/2016
M, Maria	Resident	2/26/2016
Martinez, E	Resident	2/26/2016
Martinez, J	Resident	2/26/2016
McClain, William K	Resident	2/29/2016
McClure, Dana	Bernard Karcher Investments Inc.	2/17/2016
Medura, Tammy	Resident	2/26/2016
Merchant, Jami	Resident	2/29/2016
P, Linda A	Resident	2/29/2016
Power, Maxxine	PostalMaxx	2/17/2016
Putman, Karen M	Resident	2/29/2016
Ray, Kathleen	Ur Agendy Social Marketing	2/17/2016
Rentschler, Lionel E	Lionel E Rentschler DDS	2/17/2016
Reyes, Charlie	Resident	2/26/2016
Reyes, Ivan	Simply Fresh Markets	2/29/2016
Robbins, Ilene H	Camp Ilene	2/17/2016
Rodriguez, Paula	Resident	2/29/2016
Ruiz, Richard	Resident	2/29/2016
S, Jorge	Resident	2/26/2016
S, Robert	Resident	2/29/2016
Sanchez, Esther	Resident	2/29/2016
Sanchez, J	Resident	2/29/2016
Sanchez, William	Resident	2/29/2016
Seigler, Joel	Advance Real Estate Appraisal	2/29/2016
Shapiro, Solomon	Shapiro Enterprises	2/29/2016
Ulloa, Rosalio	ProAmerica Advisors, Inc.	2/17/2016
Velasquez, Susan	Innovative Property Solutions Team	2/17/2016
Weyhgandt, John	Resident	2/29/2016
Weyhgandt, Marlene	Western States Financial	2/17/2016
Won, Scott	Corona Chiropractic	2/17/2016
Community Letter 3		
Asmine, Bachir	Resident	2/29/2016
Beyler, Steven and Sharon	Resident	2/26/2016
Collins, Laura	Resident	2/29/2016

Name	Organization/Affiliation	Date/Received Date
Dennis	Resident	2/29/2016
Downs, Michael	Downs Energy	2/29/2016
Esperanza, Jose	Resident	2/29/2016
Garcia, Eliza	Resident	2/29/2016
Garcia, Elizabeth	Resident	2/29/2016
Garcia, Tomas	Resident	2/29/2016
Hansen, David	Resident	2/29/2016
Hansen, Susan	Resident	2/29/2016
James, John	Resident	2/29/2016
Jones, Harry	Resident	2/29/2016
Manns, Kim	Resident	2/28/2016
Messner, Sherry	M&D Development, LLC	2/29/2016
Rams, Elliot	Resident	2/29/2016
Rams, George	Resident	2/29/2016
Rams, Joyce	Resident	2/29/2016
Robbins, Carroll	Resident	2/29/2016
Robbins, Richard and Carroll	Farmers Insurance	2/29/2016
Smith, Joshua	Resident	2/29/2016
Smith, Juan	Resident	2/29/2016
Smith, Linda	Resident	2/29/2016
Smith, Michele	Resident	2/29/2016
Smith, Ruth	Resident	2/29/2016
Smith, Sue	Resident	2/29/2016
Smith, Tomas	Resident	2/29/2016
Vander, Diane	Resident	2/29/2016

4.1 Issues to be Considered under CEQA

The following discussions are summaries of the issues identified by the public that will be considered under CEQA in the EIR. The summaries are grouped by topic with oral comments listed first alphabetically by last name/organization, followed by written comments listed alphabetically by last name/organization.

Project Description

- How many lines are to be added to the existing system? (Oral – Bennett)
- Renderings SCE showed to counsel are out of date and show Corona from a different time period, pre-construction of new developments. The Project cannot be constructed as proposed given subsequent developments. (Oral – Morgan)

- Would it be better to install an underground system with spare conduit for future expandability? Commenter would like to see additional spare conduits run at the time of the new lines. (Written – Bennett)
- The City of Corona attached an email sent from resident Cynthia Vincent, who asks for details regarding the construction process, including: Who and how is it determined whether lines will be buried or stretched between poles? How many streets will be affected and for how long? What method/equipment will be used to trench or hoist lines, to dig holes? Where will the construction equipment be stored? How will the street conditions be impacted? What time of day/night will this take place? How will existing electrical service be impacted; for whom and for what length of time? Will emergency vehicles be able to access all construction areas/residences/businesses 24/7? What safety procedures will be implemented in and around construction sites? Who will pay for additional traffic control measures during rush hour? (Written – City of Corona)
- SCE has chosen this plan and route because it will cost much less than running lines underground. (Written – T. and K. Wilson, Oral – K. Wilson)

Project Objectives

- It is agreed that the electrical system needs upgrading. (Oral – S. Messner)
- Regarding operating capacity and demand forecasts, the information provided in the PEA in the table and graphs is not easy to comprehend and in the City's opinion does not substantiate the claims by SCE or the need for the Project. The City would like to see this information explained more clearly and would like the EIR to clearly identify and examine the interrelationship between electrical capacity added by the Project and projected electrical demand. It will be important to examine whether, and if so by how much, added electrical capacity will exceed electrical demand so that the CPUC and the City can meaningfully consider and discuss alternatives that both mitigate the Project's environmental impacts and assure the area has sufficient electrical capacity. (Written – City of Corona)
- SCE is adding power lines in the City of Corona that may not be necessary in the foreseeable future. This concern is substantiated by a similar concern expressed by the CPUC's Office of Ratepayer Advocates (ORA). ORA also expressed concern as to whether the Project may impact or be redundant to another project that SCE is proposing in northwest Riverside County, referred to as the Riverside Project. (Written – City of Corona)
- The EIR should examine the interrelationship between the Project and the Riverside Project, and determine the degree to which the Project is redundant to or impacted by the Riverside Project. (Written – City of Corona)
- The City of Corona attached letters from several residents, stating that they acknowledge that the Project would upgrade the region's existing electrical infrastructure, improve overall electrical reliability in the area, and meet the community's increasing electricity needs. (Written – City of Corona)
- The City of Eastvale attached a letter from Mayor Ike Bootsma and several residents that acknowledges that the Project would upgrade the region's existing electrical infrastructure,

improve overall electrical reliability in the area, and meet the community's increasing electricity needs. (Written – City of Eastvale)

- The Project would upgrade the region's existing electrical infrastructure and improve overall electrical reliability in the Northwestern Riverside County region. Projects such as this address the increasing electricity needs of local communities and ensure that electricity is readily available and reliable in the future. (Written – Community Letter 1)
- The Project will upgrade the region's existing electrical infrastructure and improve overall electrical reliability in the Northwestern Riverside County region. Projects such as this address the increasing electricity needs of our community and ensure that electricity is readily available and reliable in the future. As a customer of SCE, we appreciate the efforts to improve the electrical reliability in this region. (Written – DCS Publishing)
- The need to improve existing electrical infrastructure and overall electrical reliability to the region. (Written – Genis)

Alternatives

- The route should follow Interstate 15. (Oral – Bennett)
- SCE should remove some of the overhead lines, for example on River Road, that run through Corona. (Oral – Bennett)
- The conduit should be installed in the ground with six fares, which would leave plenty of room for continued expansion without additionally opening up the street. (Oral – Bennett)
- Undergrounding the lines would reduce the chance of poles falling down during a seismic event. (Oral – Bennett)
- Power lines should be undergrounded due to the amount of people and children living nearby. (Oral – Hove)
- SCE materials show the Project going overhead, past Corona Pointe. They could put all the utilities below ground. All the new developments in town are below ground. (Oral – Morgan)
- If SCE is going to run the line thorough the middle of the city instead of going the direct route down the 15 freeway, it needs to be below ground. (Oral – Morgan)
- Undergrounding power lines do not eliminate problems entirely, but it does help to insulate a little bit better. (Oral – Rigby)
- SCE should spend the money to put the power lines underground. (Oral – Shamma)
- Alternatives such as going down the freeway or undergrounding the Project are the better option, even if it costs more money. (Oral – Simmons)
- Utility lines should be undergrounded. (Oral – Simmons)
- A letter from Mark Peabody was read, who supports upgrading electrical infrastructure but only if power lines are installed below ground for aesthetic reasons. (Oral – B. Spiegel)

- Commenter reads letter from Mark Peabody, who states that underground transmission lines are largely undetectable, just as reliable and help preserve environmental serenity and beauty. (Oral – B. Spiegel)
- The Project should be all underground. (Oral – B. Spiegel)
- SCE should go ahead and put together the infrastructure right now and build while the roadways are torn up, and put in the conduits. The conduits would stay empty, but SCE could go ahead and do that while the construction of the freeway is going on. This would have been the cost effective solution. (Oral – B. Spiegel)
- If SCE has not started the Project and there is the option to bury it, then the power lines should be undergrounded. (Oral – Tejura)
- There is need for the lines, but to fulfill this need, the lines should be undergrounded instead of constructed the way it has been proposed. (Oral – T. Wilson)
- Please investigate placing the lines in rural and empty fields in Riverside County instead of going underground or overhead near homes and businesses. (Written – Barnett)
- The Project should be completely underground. (Written – Barnett)
- Why the circuitous route from the Mira Loma station to the New Corona Substation? Why not just follow Interstate-15? Having the new lines follow Interstate-15 is a more direct route and would not be as intrusive to the residential neighborhoods. A rerouting of the lines would go a long way in increasing the visual appeal of our community. (Written – Bennett)
- Why place the lines overhead? In other upscale neighborhoods, SCE places the new lines underground. Why not underground in the City of Corona? Overhead lines are cheaper to install but the existing overhead lines running along the north side of River Road are an eyesore. The overall appearance and unsightly location of the existing power lines and poles decreases property values and detracts from the overall appeal of the neighborhood. (Written – Bennett)
- The existing poles are cluttered with high voltage power lines. The proposed new 66 kV service will double this number. The new lines along with the existing lines should be relocated off the poles and placed underground. The new lines provide an excellent opportunity for the much needed power line and to address the existing deteriorating power poles as well. (Written – Bennett)
- All of the new power lines should be installed underground along with relocating all the above ground lines in the path of the new system to underground conduits at the same time as the installation of the new 66 kV lines. (Written – Bennett)
- The power lines should be undergrounded to give residents more space to walk in their neighborhoods and to keep residential areas looking appealing. (Written – Bhatt)
- Opposed to any alternative that is not undergrounded. (Written – Biller)
- Understanding the necessity for the lines and substation, the overhead lines will have a negative impact on the residents and businesses on the east side of the City of Corona. SCE should run the high voltage lines underground as has been done in other locales throughout Southern California. (Written – Brandt)

- Commenter does not support the installation of overhead subtransmission lines by SCE for the Circle City Project going through Eastvale and supports Mayor Ike Bootsma's request that all subtransmission lines be placed underground along Hellman Avenue, River Road, Baron Drive, and Archibald Avenue. (Written – B. Brown)
- The EIR should evaluate the undergrounding of power lines along the route in the area of Blaine Street. A new residential and commercial mixed use development is currently under construction on the property located on the north side of Blaine Street, west of Main Street. Although the poles are proposed to be located on the south side of Blaine Street, the width of this street is approximately 50 feet. Thus, the poles and overhead power lines would still be in close proximity to the new residential apartments, and will likely impair the apartments' aesthetic value and the quality of life for the residents (See Corona Protest at 8-9). (Written – City of Corona)
- Undergrounding should be examined. (Written – City of Corona)
- The EIR must evaluate an alternative to underground the proposed above ground lines. Because the lines are constructed after homes have been developed and occupied, and as the lines will degrade the neighborhood, affect view sheds, and disrupt the community, the underground option is the environmentally superior alternative. (Written – City of Eastvale)
- The City of Eastvale attached letters from Mayor Ike Bootsma and several residents that request that SCE underground the line along Hellman Avenue, River Road, Baron Drive, and Archibald Avenue rather than installing overhead lines, and supports undergrounding the full length of the Project's electrical infrastructure within the City of Eastvale's limits. (Written – City of Eastvale)
- Commenters support the undergrounding of the Project. (Written – Community Letter 1)
- For reasons of efficiency and overall aesthetics, it is requested that SCE underground the 66 kV subtransmission line along Hellman Avenue, River Road, Baron Drive, and Archibald Avenue rather than installing overhead line. The full length of the Project's electrical infrastructure within the City of Eastvale's limits should be put underground. (Written – Community Letter 1)
- Alternatives are inadequate and overly broad to make the preferred alternative the only choice. (Written – Community Letter 3)
- Alternative 3 (Battery alternative) is not viable technology and really isn’t an alternative that should be been evaluated. (Written – Community Letter 3)
- Several alternative substation sites were dismissed for potential sensitive species that are neither listed as threatened nor endangered and are easily mitigated for or avoided. (Written – Community Letter 3)
- Substation and alignments were dismissed because jurisdictional areas that could easily avoided. (Written – Community Letter 3)
- Requests for an alternate route. (Written – Dayal)
- Support for undergrounding the power lines. (Written – Donaldson)
- Opposed to above-ground electrical poles on Hellman Avenue in Eastvale. They are an eyesore and unsafe. They need to be placed underground. (Written – Fidel)

- Opposed to above-ground electrical poles on Hellman Avenue, as they are unsightly and need to be placed underground. (Written – Garvey)
- SCE should underground the power lines through the City of Eastvale to preserve the aesthetics of the city. (Written – Genis)
- Support for placing power lines underground. (Written – Gonzalez)
- Opposed to the Project. Underground construction and coordination with other infrastructure projects in the city is what should be happening. (Written – Hernandez)
- The power lines should be undergrounded. (Written – C. James)
- Remove existing infrastructure or bury it at a safe distance. (Written – Johnson)
- If the Project is approved, let it be constructed underground. (Written – Kurdi)
- Supports underground power lines. (Written – Lu)
- Undergrounding is preferred due to high winds. (Written – Marchido)
- Supports undergrounding of subtransmission lines. (Written – Marchido)
- Work with the City of Corona to install the lines for the Project underground. (Written – Mendez)
- Requests that powerlines be placed underground. (Written – Moreno-Camacho)
- Since a part of the Project will be underground, all of the Project can be underground and not doing so is simply a cost-saving measure on SCE's part. The pre-existence of above-ground utilities along a portion of the proposed route is not a precedent to build larger and taller structures. Less above-ground utilities is requested. (Written – Olsen)
- Supports upgrading electrical infrastructure but only if power lines are installed below ground for aesthetic reasons. (Written – Peabody)
- Underground transmission lines are largely undetectable, just as reliable and help preserve environmental serenity and beauty. (Written – Peabody)
- Supports Mayor Ike Bootsma's request to have power lines installed underground for aesthetic purposes. (Written – Realty One Group Inc.)
- Above-ground poles are not what the City of Eastvale and its residents need. (Written – Rust)
- Against the Project and suggests the alternative route on Archibald Avenue. (Written – Shah)
- Power is lost every time it rains and that the power lines should be undergrounded to prevent this from happening. (Oral – Shamma)
- Commenter opposes putting the power lines through the City of Corona. Corona is already unfortunately known for horrible traffic, obnoxious electronic billboards, and a rundown downtown area. These power lines belong underground. Corona has the possibility to be a very desirable place to live, work and shop, but only if the people who make the decisions,

make the right ones. Do the right thing and place these lines underground where they belong. (Written – South Hills Norco Campus)

- Supports undergrounding all portions of the power lines. (Written – Tejura)
- Why does the subtransmission line route traverse so many cities instead of running adjacent to Interstate 15? (Written – Tejura)
- Opposes above-ground power lines on Hellman Avenue in Eastvale. (Written – Voss)
- Underground power lines would benefit the community by potentially reducing maintenance and operating costs, lowering story restoration costs, and lowering tree-trimming costs. (Written – Voss)
- Undergrounding the lines would improve reliability due to: increased reliability during severe weather (wind-related storm damage will be greatly reduced for an underground system, and areas not subject to flooding and storm surges experience minimal damage and interruption of electric service); less damage during severe weather; far fewer momentary interruptions; and improved utility relations regarding tree trimming. (Written – Voss)
- Undergrounding the lines would improve public safety because of fewer motor vehicle accidents, reduced live-wire contact injuries, and fewer fires. (Written – Voss)
- Undergrounding the lines would improve property values because improved aesthetics (from removal of unsightly poles and wires) and fewer structures impacting sidewalks. (Written – Voss)
- More alternatives should be evaluated because the current alternative routes are outdated. (Written – Wentworth)

Aesthetics

- Support for undergrounding the power lines. (Oral – Aoun)
- Concerned about the aesthetics of power lines. (Oral – Aoun)
- Why would the majority of the Project runs overhead instead of underground. Utilities were run underground to avoid the airport. Why not underground to correct the City's aesthetics problems? (Oral – Bennett)
- Commenter questions why SCE is not required to upgrade and is allowed to instead place overhead power lines throughout the City. (Oral – S. Messner)
- The need for the Project does not necessitate unsightliness and sight pollution. (Oral – S. Messner)
- We are trying to build a city we can be proud of. We do not need to turn it into some industrial waste land. (Oral – Morgan)
- Above ground poles are cheap and ugly. (Oral – Shamma)
- The Project if installed as currently designed would make an already blighted section of our city look even more third world, further degrading the aesthetics along River Road and the entire north end of my community. (Written – Bennett)

- Addressing electrical needs and ensuring that electricity is readily available can not come at the cost of visual blight. (Written – Biller)
- SCE proposes to replace existing wood power poles with Light Weight Steel (LWS) poles. The existing poles currently align River Road and are in an area that is mostly populated with residents. The EIR should evaluate the visual and aesthetic impact of changing out the wood poles with LWS poles. The City also requests that the EIR evaluate the placement of underground facilities in this section in order to mitigate environmental impacts. (Written – City of Corona)
- Route 4 has environmental impacts similar to Route 1, yet was not chosen by SCE, likely due to cost. Since Route 4 has almost 50 percent of the power lines being undergrounded, this alternative would be more favorable than Route 1 and would have less of a visual impact on the City's skyline. (Written – City of Corona)
- The EIR should include updated photo-simulations for the Circle City Substation's preferred route. The EIR should show photographs of the route area both as it exists today and as proposed with poles and overhead power lines. Because new construction is occurring on West Blaine Street, the City of Corona requests that the EIR photos show the scale and location of the poles and overhead power lines in relation to the development currently being constructed. Also, the visual appearance of Third Street and Grand Boulevard has recently changed due to the State Route 91 widening project. Therefore, visual simulations within this area should show these recent changes as well. (Written – City of Corona)
- The EIR should evaluate the noticeable visual change to the City of Corona's urban landscape and skyline in areas that will experience new poles and overhead power lines. The significance of this impact should not be limited on the basis of pole locations within areas that have sensitive receptors (such as residents), but should also be considered in non-residential areas. For example, East Sixth Street near Magnolia Avenue will experience a noticeable visual change due to the Project. But, according to SCE, the lack of sensitive receptors within the area "would not substantially alter the character of the urban landscape setting." The City disagrees with this conclusion. Regardless of sensitive receptors, the urban landscape will be substantially altered because poles do not currently exist within this segment of the City and this area recently experienced new industrial development and streetscape improvements. (Written – City of Corona)
- The City considers East Sixth Street a gateway into the City from the neighboring unincorporated county area. Therefore, the visual impact to the area should not be simply brushed off because the area consists of industrial and/or commercial enterprises. (Written – City of Corona)
- The City of Eastvale attached a letter from City Manager Michele Nissen, who expressed concerns regarding aesthetics, stating that views from properties along the proposed route must be considered in addition to the street-view indicated in the simulations provided. The towers and lines will obscure what is currently an unobstructed view of the surrounding mountains. This is a change to the existing condition and materially affects the adjacent homes. (Written – City of Eastvale)
- The City of Eastvale attached letters from Mayor Ike Bootsma and several residents that note that placing additional parallel lines along Hellman Avenue will create pole pollution,

and that overhead power lines are visually unsightly and will negatively impact the overall appearance of the city. (Written – City of Eastvale)

- There currently is an existing overhead 66 kV line along Hellman Avenue in the City of Chino. Placing an additional parallel line along Hellman Avenue will create pole pollution in the City of Eastvale. Overhead power lines are visually unsightly and will negatively impact the overall appearance of the city. (Written – Community Letter 1)
- The visual impacts are substantial to the community. In the PEA Executive Summary, the only impact noted was temporary impacts from construction. However:
    - New Lines along El Sobrante will create a visual impact to current unfettered views of South Corona and the Santa Ana Mountains from Interstate 15 southbound. Interstate 15 is a potential state scenic highway and these lines impact these views.
    - Overhead 66 kV lines located adjacent to new residential housing along Blaine.
    - The poles on 3rd Street are monsters and substantially change the viewshed and will impact the historic feel of East Grand, a Historic district.
    - VP15 the poles completely change the view shed and spoil view of the Santa Ana Mountains along 6th Street.
    - Completely disagree with 4.1.4 Impact Analysis which declares No Impact under section 4.1.4.1 and Less-Than-Significant impact under Section 4.1.4.2. (Written – Community Letter 3)
- Above ground power lines are an eyesore and commenter supports underground equipment whenever possible. (Written – Husted)
- Aesthetically, the Project will look horrible. (Written – C. James)
- Commenter opposes overhead powerlines on Hellman Avenue due to visual ugliness. (Written – D. James)
- Commenter expresses concerns regarding the Project's visual effects and the ability to affect property values. (Written – D. and C. James)
- Addressing electrical needs and ensuring that electricity is readily available cannot come at the cost of visual blight. (Written – Jensen)
- Aboveground wires are unsightly. (Written – Johnson)
- There are aesthetic concerns associated with above ground utilities. (Written – King)
- Objects to putting power lines above ground; they are unsightly. (Written – Marchido)
- Overhead lines are a huge eyesore. (Written – Mendez)
- American Heroes Park has large power lines; adding more is not a good idea. They are an eyesore to the community. (Written – Quach)
- Above-ground power lines are ugly. (Written – Reinke)

- Requests an exhibit showing the future pole locations down to the Eastvale boundary. (Written – Richland Communities Inc.)
- Opposes the proposed installation of high voltage wires because they are ugly. (Written – TMS Consortium)

Agricultural Resources

- Concern for how the Project may affect agriculture, health, and the environment. (Written – Dayal)

Air Quality

- SCAQMD staff provides recommendations regarding the analysis of potential air quality impacts from the Project that should be included in the draft CEQA document. (Written – SCAQMD)
- SCAQMD requests a copy of the CEQA document upon its completion. In addition to the Draft EIR, include all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period. (Written – SCAQMD)
- SCAQMD recommends that the Lead Agency use the CEQA Air Quality Handbook (1993) as guidance when preparing the air quality analysis, and use CalEEMod land use emissions software. (Written – SCAQMD)
- The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Project and all air pollutant sources related to the Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from-grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis. (Written – SCAQMD)
- Requests that the lead agency quantify criteria pollutant emissions and compare the results to the recommended regional significance thresholds. In addition to analyzing regional air quality impacts, the SCAQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Project, it is recommended that the lead agency perform a localized analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. (Written – SCAQMD)

- In the event that the Project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment can be found in the document "Health Risk Assessment Guidance for Analyzing Cancer Risk. From Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis." An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included. (Written – SCAQMD)
- Guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective. (Written – SCAQMD)
- Locations of SCAQMD rules and relevant air quality reports and data are provided. (Written – SCAQMD)

Biological Resources

- Risks for above ground lines include the following:
    - Risks to wildlife at the Prado Regional Park and surrounding Nature Preserve;
    - Disturbing indigenous wildlife;
    - The potential concerns with frac-outs which can release drilling fluids into the water body and sub-service environment;
    - Trimming certain oak trees during certain times of the year can cause the spread of Oak Wilt disease;
    - Concerns of wildlife reproducing near the strong electromagnetic fields (Written – Lenhart, Li; and
    - Invasive species become more invasive. (Written – Lenhart)
- Potential impacts to riparian habitat, the Least Bell's Vireo, and other biological resources in the Prado Basin can negatively impact Orange County Water District (OCWD)'s water conservation program. In addition, OCWD owns and operates a 465-acre treatment wetlands system in the Prado Basin. Approximately half of the Santa Ana River baseflow is diverted though these wetlands through a diversion channel that is located downstream of River Road. (Written – OCWD)
- This construction has potential to impact riparian habitat on land owned by OCWD and the diversion channel to the wetlands. Please include an evaluation of potential impacts to habitat for all work on or near the Santa Ana River. (Written – OCWD)
- Prior to any encroachment onto San Bernardino County Flood Control District (District) right-of-way, a permit shall be obtained from the District's Permits/Operations Support Division, Permit Section. Other on-site or off-site improvements may be required which cannot be determined at this time. (Written – San Bernardino County Department of Public Works)

Cultural Resources

- A text message was read from resident Tom Richins, which indicated that Grand Boulevard is on the National Historic Register List and the proper paperwork needs to be filled out that complies with national regulations due to the boulevard being on the National Registration if the utilities are going to be put on Grand Boulevard. (Oral – B. Spiegel)
- Grand Boulevard is a registered historical landmark. (Written – Barnett)
- The Project looks like project dumping into a poor area where homes are already surrounded by California State Route 91 and the railroad easement. The lines go through the heart of the City's historic Grand Boulevard, and need to go underground. (Written – Wentworth)

Geology and Soils

- There is an earthquake fault that runs through the Project area. There is evidence of the fault at the Prado Damn. Requests information regarding the Project's vicinity to the earthquake fault. How close are the tall power poles going to be, especially on River Road, crossing over the river bottom? This could be problematic. During a seismic event the lines could come down. (Oral – Bennett)
- In looking at the height of the proposed poles, in light of the proximity to local earthquake faults, might the community be better served with underground distribution networks purely as a safety measure? (Written – Bennett)
- Commenter mentions earthquake dangers associated with above ground power lines. (Oral – Shamma)

Hazards and Hazardous Materials

- Existing power lines run through parks off Helm, such as American Heroes Park. Park users can feel the electricity in the umbrellas and sun shades, and can see the sparks. (Oral – Rigby)
- High winds cause poles to fall over and burn houses and structures. (Oral – Shamma)
- High winds and power lines jeopardize residents. (Oral – Simmons)
- Has felt static electricity from existing power lines while sitting in an aluminum chair at American Heroes Park. (Oral – Simmons)
- A letter from Mark Peabody was read, indicating that overhead powerlines are unhealthy to live or work around. (Oral – B. Spiegel)
- The proposed path is dangerously close to homes and there has been no guarantee from SCE that the wires will not impact people's health in a negative way. (Written – Barnett)
- Overhead power lines along River Road could interfere with the flight path of landing air craft. (Written – Bennett)
- It appears that the lines are shown to be undergrounded along Coda Street. Commenter suspects that this is to avoid conflict with landing air craft at the Corona Airport. Has due

consideration been made regarding the high power lines along River Road that will also be in the flight path of landing air craft? (Written – Bennett)

- It is unsafe to have power lines above ground. (Written – Bhatt)
- The City of Corona's attached letters included a comment that urges that the installation of any aboveground high voltage lines be subject to a rigorous environmental review, bearing in mind that such lines frequently lie under the suspicion of adversely affecting the health of those who live near them. (Written – City of Corona)
- The City of Eastvale attached a letter from City Manager Michele Nissen, who expressed concerns regarding safety impacts in tower fall zones, stating that lines fail, poles need to be replaced and maintenance of the facilities will all impact the use of adjacent properties. In addition, the potential exists for a catastrophic failure of one or more of the towers (as a result of a traffic collision, earthquake, inclement weather, etc.) that could cause tower(s) and lines to fall onto roadways on adjacent residential areas. The EIR must clearly indicate what additional restrictions may be required on adjacent development or use of property associated with the towering power lines. Safety of the lines, including the potential for failure and impacts in the areas in the fall zone must be included in the health risk assessment prepared for the Project. (Written – City of Eastvale)
- Published material has indicated the following health risks that link to living near power lines. How will these be addressed?
    - Brain cancer;
    - Childhood and adult leukemia;
    - Lou Gehrig's disease (ALS);
    - Alzheimer's disease;
    - Breast cancer in women and men;
    - Miscarriage, birth defects, and reproductive problems;
    - Decreased libido;
    - Fatigue;
    - Depression and suicide;
    - Blood diseases;
    - Hormonal imbalances;
    - Heart disease;
    - Neuro-degenerative diseases; and
    - Sleeping disorders. (Written – Feng)
- The Project would cause safety concerns for residents. For example, in 2014, SCE and the CPUC's Safety and Enforcement Division settled over an incident that left three members of a San Bernardino family dead and thousands of customers without power, due to a downed 12 kV power line that fell on the family's property. In this day and age and with all the modern technology available today, undergrounding power lines should be considered

the better option. Overhead power lines are dangerous, unsightly, and affect property values. (Written – Genis)

- There are hazards to the public associated with the construction of above ground power lines. (Written – Husted)
- Above-ground utilities are an outdated model and are dangerous given high winds in the Project area. (Written – King)
- Opposed to the Project because overhead power lines pose a safety risk that underground construction does not. (Written – Marshburn)
- Overhead powerlines are unhealthy to live or work around. (Written – Peabody)
- Large power lines are bad for those with pacemakers. You can feel electricity go through your body when you are close by. (Written – Quach)
- Commenter expresses concern for the safety and health of Corona residents and is concerned about the negative effects that overhead power lines may have on nearby homes or businesses. Short term health problems: Headaches, fatigue, anxiety, insomnia, prickling or burning skin, rashes, muscle pain. Long-term health problems: Risk of damaging DNA, risk of cancer, risk of leukemia, neurodegenerative disease, immune disorders, miscarriage. It also affects behavior, growth, reproduction, and melatonin production. (Written – Rambert)
- Opposed to the proposed installation of high voltage wires because they may be structurally unsafe to resist in high wind gale forces or earthquakes, and thus constitute a continuous living public safety structural risk to the citizens, young and old, walking by or playing in the open space nearby. They also constitute an extreme fire hazard to residences of the neighborhoods if they start to fall due to wind/earthquake forces. (Written – TMS Consortium)
- Studies set a recommended safe distance from high voltage lines to be more than 200 meters (656 feet). The Commenter's home is approximately 60.96 meters (200 feet) from the line. Many, many homes in both Corona and Norco are much closer to the proposed high voltage lines and are probably being affected already by their close proximity to the existing lines. (Written – T. and K. Wilson, Oral – K. Wilson)

Hydrology and Water Quality

- What method will be used to cross the Santa Ana River? Will it be over the bridge? In the past, the bridge over the river at that location has been washed out, a new bridge has been constructed; commenter would like to see the results of the 100 year flood projections for that bridge and any possible crossing point for the proposed power lines. (Written – Bennett)
- The Orange County Water District (OCWD, the District) is a special district formed in 1933 by an act of the California Legislature. The District manages the groundwater basin that underlies north and central Orange County. Water produced from the basin is the primary water supply for approximately 2.4 million residents living within the District's boundaries. Flow from the Santa Ana River is the primary supply of water used to recharge the Orange County Groundwater Basin. (Written – OCWD)

- It appears that both alternatives may affect Riverside County Flood Control and Water Conservation District (RCFCWCD) rights of way. Any work that involves RCFCWCD rights of way, easement, or facilities will require an encroachment permit from the RCFCWCD. Therefore, the RCFCWCD will likely be a CEQA responsible agency and should be named as such in the EIR to facilitate the encroachment permit process. (Written – RCFCWCD)

Land Use and Planning

- In the past 10 years or so, the staff at the City of Corona has shown a considerable ability to make consistently good decisions regarding planning and zoning changes. With a little help from the CPUC, the progress can not only continue, but it can be improved. (Written – Bennett)
- The City of Eastvale attached a letter from City Manager Michele Nissen, who expressed concerns regarding General Plan consistency, stating that the City of Eastvale General Plan Policy C-29: States that the City will "locate new and relocated utilities underground when possible" and that "all remaining utilities shall be located or screened in a manner that minimizes their visibility by the public." As shown, the proposed lines are not consistent with the City' General Plan. The EIR must evaluate the conflict between the City's General Plan and the Project. The conflict has the potential to reduce property values, result in lower homeownership, and create a transition from stable home owner neighborhoods to a more transient population. (Written – City of Eastvale)

Noise

- Opposed to overhead powerlines on Hellman Avenue due to buzzing wires (Written – James D)

Public Services

- The City of Corona's attached letters included a comment that expresses concern that possible further disruption of traffic patterns could impede on the timely operation of police, fire, and other emergency vehicles. (Written – City of Corona)
- Existing overhead power lines on River Road run through property housing the Corona/Norco YMCA, which operates a preschool and afterschool childcare, Auburndale Intermediate School, River Run Senior Apartments, and numerous other apartments and housing developments as far as Main Street. (Written – T. and K. Wilson, Oral – K. Wilson)

Recreation

- The Project will entail construction of electrical facilities across approximately 0.4 miles of the southern perimeter of American Heroes Park in an area with existing SCE right-of-way. Include in the Draft EIR a discussion of impacts to any recreational programs and how SCE or its contractor will coordinate this work with the Jurupa Community Services District (JCSD)’s Parks and Recreation Department to minimize impacts to park users and programs. (Written – JCSD)

- The Project will entail construction within the northeastern portion of James C. Huber Park. Although SCE right-of-way abuts this park to the north, prior to any construction or disturbance within Huber Park, SCE is required to obtain the approval of JCSD. Include in the Draft EIR a discussion of impacts to any recreational programs at Huber Park and how SCE or its contractor will coordinate this work with the JCSD's Parks and Recreation Department to minimize impacts to park users and programs. (Written – JCSD)

Transportation

- Coordination with the construction on the California State Route 91 would have been helpful for Project and more cost effective. From Main Street to Grand Boulevard, in the exact area where they are going to do this new wiring, the freeway will go from initially six to eight lanes up to 22 lanes,11 lanes in each direction. (Oral – B. Spiegel)
- A letter was read from Mark Peabody that stated technology exists to construct the Project with the goal of causing the least amount of interruption during construction, and preservation of pending and newly-constructed roads associated with the 91 freeway project. (Oral – B. Spiegel)
- Archibald and River Road are used as one of the main thoroughfares and (non-freeway) detours to and from the Ontario Airport and the cities to the north. Traffic from the 60 and 10 freeways often spills over when there is an accident and causes even more congestion. (Written – Barnett)
- Concerned about the possible further disruption of traffic patterns within the City of Corona in addition to the construction work on California State Route 91. (Written – Bennett)
- Given that traffic flow in the City of Corona is completely disrupted by the 91 freeway expansion, how can you justify the further disruption of the few roadways that are open that cross California State Route 91? (Written – Bennett)
- The City of Corona's attached letters included a comment that expresses concern about the possible further disruption of traffic patterns within the city in addition to the construction work on California State Route 91 that has closed several freeway entrance and exit ramps and diverted drivers onto surface streets. (Written – City of Corona)
- The City of Corona's attached letters included a comment that supports the Project, but suggests that operations be postponed until the construction work on California State Route 91 reaches a point where traffic patterns return to normal. (Written – City of Corona)
- SCE should actively work with all regional stakeholders currently doing major public works projects in the community, including more than $1 billion of major freeway and other roadway improvements, so that the closure and cutting of certain new and recently reopened streets can be minimized. (Written – Community Letter 2)
- With new residential and commercial developments along Hellman Avenue, the risk of traffic collision to power line structures is significant. If structural integrity is compromised by any factors (air, auto, environmental), adjacent residents and businesses are at risk of injury and/or death. (Written – Feng)

- Technology exists to construct the Project with the goal of causing the least amount of interruption during construction, and preservation of pending and newly-constructed roads associated with the 91 freeway project. (Written – Peabody)
- The City of Corona attached a Protest of the City of Corona that states that unique measures should be considered to avoid post-freeway shock. (Written – City of Corona)

Utilities and Service Systems

- The Draft EIR should include identification of any JCSD owned potable water, non-potable water, and sewer facilities within the construction footprint of the Project and a discussion of potential impacts to these facilities. Include in this discussion how SCE or its contractor will coordinate this work with JCSD so there are no disruptions to service. (Written – JCSD)

Cumulative

- Commenter attended SCE's infrastructure meeting in September of 2015. SCE brought old maps that showed no consideration for the new freeway. SCE's design disregards people's yards, and disregards the possibility of moving the lines next to the freeway. SCE didn't contact RTVT. They did not look at the plans for the freeway as it is going to be. They had no current materials. (Oral – Morgan)
- The City of Corona is being torn up. If you drive through the city, there is a lot of construction, both on the freeway and on the streets, some of which are the same streets that would be affected by the Project, inconveniencing the same people. (Oral – K. Spiegel)
- The Project will overlap or closely follow the current project on California State Route 91, which has negatively impacted residents, ultimately relocating families, primarily Hispanic. (Written – Barnett)
- Small business in the Project area cannot withstand another big project where customers cannot get to their locations and owners are discouraged with all the construction. One more project of that magnitude would completely devastate some businesses. In fact, these business owners have been in regular attendance to the Corona City Council meetings to voice their strong concern about the negative impact of traffic from the 91 freeway construction on their business. (Written – Barnett)
- The PEA does not appear to meaningfully address cumulative impacts associated with construction of the Project during and immediately following periods of time when the City of Corona's residents and businesses have experienced material impacts associated with improvements to State Route 91 and Interstate 15 (Freeway Projects). SCE plans to install its facilities under, on and over many of the same roadways that have been and will be most impacted by the Freeway Projects. The City requests that the EIR include an analysis of these impacts. As described in the City's protest, our community is experiencing significant freeway construction activity being undertaken by the Riverside County Transportation Commission. (See Corona Protest at 7-8). The City's residents and businesses have already been impacted by the Freeway Projects, and it is reasonable and necessary to avoid or reduce further impacts. (Written – City of Corona)

4.2 Issues Not Analyzed under CEQA

The EIR will be used to guide decision-making by the CPUC by providing an assessment of the potential environmental impacts that would result from the Project. The weighing of Project benefits (environmental, economic, or otherwise) against adverse environmental effects is outside the scope of the EIR. When the CPUC considers whether to approve SCE's application for the Project, it may consider economic and other considerations along with the EIR.

The EIR will not consider direct health effects associated with electric and magnetic fields (EMF) in the context of the CEQA analysis of potential environmental impacts because [1] there is no agreement among scientists that EMF creates a potential health risk, and [2] there are no defined or adopted CEQA standards for defining health risk from EMF. Presently, there are no applicable federal, State, or local regulations related to EMF levels from power lines or related facilities, such as substations. However, CPUC policies and procedures (as reflected in decision D.06-01-042) require utilities to incorporate "low-cost" or "no-cost" measures for managing EMF from power lines up to approximately four percent of the total Project cost.

The EIR will not consider comments related to whether or not SCE has the proper easements or ROWs for construction, operation, or maintenance of the Project. Negotiations of ROWs or easements occur between SCE and affected property owner(s) and generally do not require discretionary approval from a State or local agency. Consequently, such agreements would be outside the scope of CEQA. Any physical impacts that would occur within newly-acquired ROW as part of the Project would be assessed in the EIR.

The EIR will evaluate a Permit to Construct (PTC) application (i.e., not a Certificate of Public Convenience and Necessity application). Therefore, consistent with CPUC General Order 131-D, which does not require an affirmative showing of need for projects under 200 kV, the EIR also will not consider comments that directly pertain to SCE's determination of Project need. This issue is not generally litigated in PTC proceedings. However, the EIR will study a "No Project Alternative" which will examine the environmental impacts of not building the Project. Thus, the analysis of the No Project Alternative will consider what would happen from an electrical standpoint if the Project objectives are not met.

Summaries of the scoping comments received on issues that will not be analyzed under the CEQA review for the Project are presented below.

Economics-Related Comments Received

- Concerned about how overhead power lines affect property values. Research has shown that houses in the area with overhead power lines are taking four times longer to sell, at a lower price. This also impacts city and county revenues. (Oral – Aoun)
- Above ground power lines negatively affect property values, as well as time on the market for a home to sell. (Oral – Rigby)
- A letter from Mark Peabody was read, that stated overhead powerlines limit development of prime real estate and drive down the values of adjacent land. (Oral – B. Spiegel)

- The Project would lower property values. (Written – Bennett)
- Addressing electrical needs and ensuring that electricity is readily available cannot come at the cost of decreased property value. (Written – Biller)
- The City of Eastvale attached a letter from City Manager Michele Nissen, who expressed concerns regarding cumulative impacts associated with lowered property values, stating that Hearings held on similar power lines in Chino Hills in 2012 showed a reduction in property values of up to 17 percent. The reduction in property value associated with the Project will result in lower of appraised values well beyond the homes adjacent to the power lines as comparable sales records (comps) used to justify bank loans seldom list the reason for the reduction in value. This will result in homes through this region of the City having difficulty refinancing or qualifying for loans, which lowers the property value. Dropping property values are associated with increases in crime, homes becoming rental properties creating a tear in the fabric of the neighborhood. The EIR must evaluate the impact to the adjacent properties associated with conversion to rental or group homes, and an increase in law and code enforcement calls to the neighborhood. (Written – City of Eastvale)
- The Project may result in decreased property values. FHA loans may not be approved due to close proximity to power lines. (Written – Feng)
- The Project would affect property values. (Written – Genis)
- The resale value homes will greatly decline because of added proposed power poles. (Written – C. James)
- Home resale values will decline. (Written – Jensen)
- Overhead powerlines limit development of prime real estate and will drive down the values of adjacent land. (Written – Peabody)
- Above-ground power lines will decrease property values. (Written – Reinke)
- The Project would create a severe drop in real estate prices. (Written – Shah)
- The Project would have a negative socioeconomic impact in an already economically challenged area. Socio-environmental injustice would occur if the Project routes are aboveground around Grand, 3rd, and Main. (Written – Wentworth)
- Commenter is concerned about decreased property values and having difficulty selling properties in the future. (Written – T. and K. Wilson, Oral – K. Wilson)

EMF-Related Comments Received

- Concern related to dangers associated with EMF exposure, magnetic fields, and high voltage lines. It is a risk management nightmare; why take the risk associated with exposing a populated area to high voltage lines? (Oral – Aoun)
- Concerned about the link between living near power lines and cancer. The International Agency for Research on Cancer (IARC) is part of the World Health Organization, and its major goal is to identify causes of cancer. The IARC considers the evidence for ELF magnetic and electric fields and found limited evidence in humans for carcinogenicity of extremely low frequency magnetic fields in relation to childhood leukemia. (Oral – Tejura)

- The EIR should adequately addresses all potential impacts associated with long-term exposure to EMF, particularly in those areas that have sensitive receptors. (Written – City of Corona)
- The City of Corona attached an email sent from resident Cynthia Vincent, which included research regarding medical risks of exposure to EMF, and objects to the Project continuing without further public meetings. (Written – City of Corona)
- The transmission line presently behind the commenter's home results in static noise and sparks. The commenter is concerned how a second transmission line running parallel would affect the situation. (Written – Dayal)
- There have been links between magnetic field exposure (considered carcinogenic) and various health issues with the strongest evidence towards childhood leukemia. Will this be part of the scope of study on environmental impact? (Written – Feng)
- Concerned about health risks associated with being close to EMF that comes off the power poles, such as leukemia, other forms of cancer, auto immune disorders, etc. (Written – James C)
- Opposed to overhead powerlines on Hellman Avenue due to health risks. (Written – James D)
- Homeowners are being exposed enough to electromagnetic rays. (Written – Johnson)
- Electromagnetic fields are harmful to adults and children. (Written – Shah)
- The Project should be denied as submitted or to be altered to require SCE to underground power lines to shield citizens from EMF fields. The existing overhead power lines running between Corydon Street and Main Street should be removed and put underground (Written – T. and K. Wilson, Oral – K. Wilson)
- There will be a negative impact of increased EMF field radiation on health, animals, plants, and electronic device interference. (Written – T. and K. Wilson, Oral – K. Wilson)

Project Need-Related Comments Received

- The need for the Project is acknowledged. (Written – Bhatt)
- The scale of the Project is a concern and whether the Project is necessary based on the projected demand for electricity in the area. (Written – City of Corona)
- Substantive information should be provided in the EIR in order to document the need for the Circle City substation and related power lines. This information should include, but not be limited to, an analysis of population growth trends, as well as an evaluation of approved projects and vacant parcels zoned for future development that are located within the ENA. Such information is critical in order to determine how the need for the Project is derived. (Written – City of Corona)

General Comments

- SCE is not cooperating with the City, and needs to partner with the City. Even though they are a monopoly, they cannot come in to an area and stamp over everybody, the public officials and the residents and the clients. Ratepayers are paying their salary. Ratepayers

are the client. Edison keeps increasing their rates. The cost does not matter. If the cost is more, charge ratepayers more. SCE has to work with the City and with City officials. As an agency, CPUC has the power over them. CPUC needs to exercise that power and force them to work with the City that they are impacting. (Oral – Aoun)

- A lack of information was provided to residents and a meeting in Eastvale should have taken place. (Oral – Hove)
- Going to make sure everyone hears about the Project; will spread the word on Facebook, will work with Eastvale City Manager, etc. (Oral – Hove)
- The scoping meeting was located too far from Eastvale residents. (Oral – Hove)
- Commenter requests that SCE submit plans, pictures, illustrations, and other information that would help educate residents on the details of the Project. (Oral – Messner G)
- Why wasn't the public notified by SCE about this meeting? The only way the commenter found out about the meeting was because it was on the City website. There were no mailers. Part of the Project goes above ground on the sidewalk in front of people's houses. These individuals should have been notified. The Project would also go overhead near unoccupied apartment buildings. Who will notify those people? (Oral – Morgan)
- SCE did not accept the City of Corona's offers to work together to minimize the impact on the City. Edison was completely oppositional. (Oral – Morgan)
- The Project affects Eastvale residents and a meeting should be held in Eastvale. (Oral – Rigby)
- Collecting signatures should be done in order to protect the city from the project and that other actions can be taken to be more active in the Project. (Oral – Shamma)
- Opposed to the Project. (Oral – Simmons)
- Turnout at the scoping meeting is a disappointment and outreach was inadequate. The outreach did not reach local residents. (Oral – Simmons)
- The Project area on Hellman Avenue is all new residents who are unaware of the project. (Oral – Simmons)
- SCE's outreach was insufficient. It did not go door to door, or put fliers out. There should have been a public meeting in Eastvale. (Oral – Simmons)
- Should have received more notice on the meeting. The Chamber of Commerce sent letters on December 31st regarding the Project. (Oral – B. Spiegel)
- For future meetings the CPUC can notify the Chamber of Commerce in order to help get the word out. This will help increase exposure. (Oral – B. Spiegel)
- SCE brought outdated materials to the infrastructure committee meeting at the City of Corona in September 2015. Projects that were built 4 and5 years ago were not on the map. The City of Corona strongly recommended that SCE hold off so that they could work together, and have community input. SCE was insistent that they move forward immediately. (Oral – B. Spiegel)

- Supports the system, but only if it is installed the proper way, with community input. (Oral – B. Spiegel)
- Yet to find one business that supports this plan. Most are very upset over it. (Oral – B. Spiegel)
- Will try to get more comment letters from businesses and residents. (Oral – B. Spiegel)
- SCE should have encouraged people to attend the meetings. (Oral – B. Spiegel)
- Nobody from the City Councils for Eastvale, Norco, or Corona would be in favor of the Project the way it is proposed. (Oral – B. Spiegel)
- SCE has not partnered with the community and has made no efforts to reach out above and beyond the meetings. This is very frustrating for the community. Commenter is on the City Counsel and has tried to reach out to work with SCE, to be a partner in the Project. Partnering with the City would have resulted in a Project that is cheaper, with less inconvenience to local residents and businesses. It is not ok that Edison refuses to partner with the City. (Oral – K. Spiegel)
- The 300-foot notification requirement is not enough; the Project affects everybody. (Oral – K. Spiegel)
- SCE is not concerned about aesthetics; they are concerned about the bottom dollar. They have shareholders that they have to be accountable to. The City of Corona has always gotten the back seat. (Oral – K. Spiegel)
- Questions the Project objectives to "ensure safe and reliable electrical service" because overhead power lines are affected by strong winds and are therefore not always reliable. When they are close to residential areas, they may cause health issues, and are therefore not always safe either. (Oral – K. Spiegel)
- The City of Corona is not the only city that is concerned. The City of Norco is also holding a town meeting, as is the City of Easvale. (Oral – K. Spiegel)
- Few people at the scoping meeting are representing a city or area of almost 300,000 people because SCE has not made an effort to notify people of the Project beyond the basic information provided. (Oral – T. Wilson)
- More information is desired about the Project regarding the existing lines, the voltage increase, etc. and states that this necessary information is not provided by SCE. (Oral – T. Wilson)
- The Project has a negative impact on residents but there is an opportunity to turn it into something that could work. (Oral – T. Wilson)
- It is unclear how a project with such far reaching scope and complexity could have escaped his attention until such a late date. Can some additional review be allowed because of the time of the failure of the notification process? As a planning commissioner, he was caught totally off guard by the proposed new lines. (Written – Bennett)
- The current economic conditions provide an unprecedented opportunity to improve our community. However, with this opportunity comes danger. That danger is that we move too fast and look to the most expedient solutions to problems. The infrastructure improvements

proposed are sorely needed and will be welcome if they can be accomplished with both safety and good design with an eye toward expandability. (Written – Bennett)

- Approval of the application for the Project should be delayed until SCE gives residents, businesses, and stakeholders the opportunity to discuss Project details, including but not limited to commenting on where SCE proposes to construct its high voltage lines, where lines would be above-ground and underground, how to work with all regional stakeholders currently doing major public works projects in the community to minimize the closure of certain new and recently reopened streets, and how SCE can engage in a communication program that aims to inform the community in order to receive meaningful feedback. (Written – Bennett)
- The City of Corona has a significant interest in the Project and welcomes the opportunity to provide input to and work collaboratively with the CPUC on the environmental review of the Project. (Written – City of Corona)
- On February 3, 2016, staff from the City of Corona met with CPUC staff for an agency coordination meeting on the Project. The City requests that its protest and discussions occurring in the agency coordination meeting also be considered in determining the scope of the EIR. (Written – City of Corona)
- The City of Corona attached a Protest of the City of Corona that protests SCE's application for a Permit to Construct the Project and notes that SCE denied the City's requests to meet with SCE to receive further information on the Project and provide feedback, and one or more public participation hearings should be held in Corona. (Written – City of Corona)
- The City of Corona attached a letter from Darrell Talbert, City Manager to SCE, expressing disappointment at SCE's recent decision to forego meaningful public input opportunities and decline an invitation to attend a City Council session to educate the council and public on the Project. More involvement from SCE is requested and SCE should reconsider requests to suspend its plans until further public outreach in Corona is conducted. (Written – City of Corona)
- The City of Corona attached letters from several residents, stating that they support delaying approval of the application for the Project until SCE gives residents, businesses, and stakeholders the opportunity to discuss Project details, including but not limited to commenting on where SCE proposes to construct its high voltage lines, where lines would be above-ground and underground, how to work with all regional stakeholders currently doing major public works projects in the community to minimize the closure of certain new and recently reopened streets, and how SCE can engage in a communication program that aims to inform the community in order to receive meaningful feedback. (Written – City of Corona)
- The City of Corona attached letters included a comment that acknowledges SCE's responsibility to inform residents and allow comments regarding their plans and intentions prior to, during, and with any proposed changes to the Project. (Written – City of Corona)
- The City of Corona attached letters included comments that opposed construction of above-ground utility lines. (Written – City of Corona)
- The City of Eastvale attached several documents for consideration and inclusion, including: City Council Special Meeting Agenda, City Council Special Meeting Staff Report and

subsequent attachments, and City Council Special Meeting Minutes. (Written – City of Eastvale)

- Commenters are opposed to the Project for the following reasons:
    - The scoping, including routes, location and visual, physical and other environmental impacts;
    - SCE's initial efforts in getting meaningful feedback from an informed community have lacked tremendously;
    - There seems to be empathy and mitigation support for the impacts of high kV infrastructure weaving throughout the community. (Written – Community Letter 2)
- SCE should engage with regional stakeholders to assure that SCE's proposed facilities are coordinated with public works projects. Neither the City or the Chamber have seen evidence of such coordination and the presentation materials they have seen appear to be several years old, are very challenging to understand, and would appear to conflict with some of the noted freeway improvements. (Written – Community Letter 2)
- The PEA is outdated. Though the document is dated December 2015, the data are obviously outdated.
    - Page 2-13 refers to the State Route 91 Project as a proposed project. It has been under construction for 18 months.
    - 2012 appears to be last public outreach (one meeting in north Corona).
    - References show 2012 dates for research.
    - Overheads on 6th Street do not take into account new freeway transition heights.
    - Alternatives were limited and did not take into account newly created opportunities that were created by the State Route 91 project alignments and new residents along Blaine. (Written – Community Letter 3)
- Public outreach is outdated.
    - Outreach was done in 2009 when there wasn’t a defined project and again in 2012 and did not take into account changes in condition. SCE has refused to meet with City of Corona to discuss alternatives that could meet objectives with minimal disruption and visual impacts.
    - Residents along 3rd Street and Quarry Streets are predominantly Spanish speakers and elderly with limited access to transportation. Outreach was not in Spanish and was not central to their location. (Written – Community Letter 3)
- Environmental Justice section was inadequate.
    - The above ground running of lines in lower income residence along 3rd and Quarry. Are other area undergrounded?
    - 4 and 12 kV lines will be replaced with 66 kV lines in low income residential neighborhoods. Setbacks do not seem to conform to SCE policies.

  - Predominantly Spanish speaking residences are traditionally not reached by mailings. Outreach has been inadequate and is dated. (Written – Community Letter 3)

- SCE should delay construction of the Project until more adequate feedback from community members is received and more information is delivered to the community. Commenter understands the need for the upgraded transmission lines, but states that more community outreach was involved with local freeway construction than with the outreach done for the Project, and that being overloaded with upgrades has become an inconvenience. (Written – ConnectingU Marketing, Inc.)
- Approval of the application for the Project should be delayed until SCE commits to giving businesses, residents, and other stakeholders the opportunity to comment on where SCE proposes to construct its high voltage lines and where SCE proposes to place them above ground and underground. (Written – DCS Publishing)
- Approval of the Project application should be delayed until SCE works with regional stakeholders currently doing major public works projects in the community to minimize the closure of certain new and recently reopened streets. (Written – DCS Publishing)
- Approval of the Project application should be delayed until SCE engages in a communication program that aims to inform the community in order to receive meaningful feedback. (Written – DCS Publishing)
- Many of the Eastvale residents were not able to attend the recent CPUC Project Environmental Scoping meetings due to the location and lack of proper notification of the meetings. One of the two Scoping meetings should have been held in the City of Eastvale, but instead both meetings were held in the City of Corona. It should be mandatory that scoping meetings be held in each city that would be impacted by a Project. The City of Eastvale requested SCE to hold a meeting in their city, but SCE denied their request. (Written – Genis)
- It is stated in the CPUC General Order (GO) 131-D that property owners within 300 feet of a utility right-of-way are to be mailed a notification when a Permit to Construct has been filed for a project. It is also noted in this GO that a notification of the projects are to be advertised in a local newspaper. The Project affects many beyond that 300 foot notification limit and not everyone subscribes to newspaper publications. The last update on this GO was in 1995, 21 years ago. We are now in the 21st century and it is time to update this GO, along with the approval process used for these types of projects. (Written – Genis)
- The City of Corona and SCE should put their negative past behind them and start working together collectively and in the best interest of the citizens and community, who are SCE customers. (Written – Husted)
- SCE should attend a Town Hall Meeting where they can hear residents' concerns. (Written – James C)
- Approval of the application for the Project should be delayed until SCE gives residents, businesses, and stakeholders the opportunity to discuss Project details, including but not limited to commenting on where SCE proposes to construct its high voltage lines, where lines would be above-ground and underground, how to work with all regional stakeholders currently doing major public works projects in the community to minimize the closure of certain new and recently reopened streets, and how SCE can engage in a communication

program that aims to inform the community in order to receive meaningful feedback. (Written – Keller Williams Realty)

- The Project would upgrade the region's existing electrical infrastructure, improve overall electrical reliability in the area, and meet the community's increasing electricity needs. (Written – Keller Williams Realty)
- Opposed to the Project due to lack of community involvement in the Project on SCE's part. (Written – Marshburn)
- Opposed to the Project because several enormous infrastructure projects are currently underway or about to begin. To not integrate the Project with those is a needless interruption of life in Corona and failure to coordinate resources to the benefit of the stakeholders and customers. (Written – Marshburn)
- Commenter attended the Scoping meeting and read the Notice of Preparation, but expectations fell short as the commenter did not gain useful insight as to how the Project will proceed or how it would impact their property. Commenter wishes that further efforts be taken to educate and inform the public about the Project. (Written – Palmieri Tyler)
- Based on the following, CPUC is either not prepared to disseminate important facts about the Project, or is intentionally withholding such facts from the public:
    - There were no available written materials at the Meeting other than the Notice of Preparation that had already been distributed.
    - There were no representatives from SCE at the Meeting to provide details about the power transmission lines that it will be installing.
    - The presentation was very short and extremely broad in scope, with a majority of the meeting consisting of public comment rather than presentation of actual facts by the CPUC.
    - Project impacts were not set forth with any particularity such that property owners can adequately assess potential issues relating to their properties.
    - The Project description contained within the presentation was vague.
- The Scoping Meeting was merely a cursory effort, and consequently, was not effective in educating and informing the public about the Project. (Written – Palmieri Tyler)
- Why will SCE not respond to requests for meetings with Corona City Council and members of the city? (Written – Tejura)
- Opposed to the proposed installation of high voltage wires because they are cheap. Money should not be the only consideration for this above ground high voltage design installation. Environmentally correct and public safety should be the prime design and construction considerations. (Written – TMS Consortium)
- SCE should work with the local stakeholder businesses and residents hand in hand to give us a structurally safe and environmentally acceptable underground new electrical installation system. (Written – TMS Consortium)
- This is a major Project through the heart of the City of Corona and no notice has gone out to the residents of the City from SCE. (Written – Wentworth)

- SCE has shown bad faith and intent to deceive by pushing through the Project that they know would be harmful to the community, favoring their bottom line over the health and wellbeing of their customers. This has been demonstrated by their repeated refusal to meet with elected city officials, to answer their questions and concerns, and listen to their input prior to filing the Project with the CPUC. They have also shown bad faith to citizens by delaying their own stated timeline for conducting public outreach activities between 2009 and 2015. Only one letter/notice was received on November 27, 2015, which contained an overview of the Project, timeline, and notice of their intent to file with the CPUC in less than a month. No notice was received from SCE regarding the public input meetings set for February 16 and 17. Neighbors know nothing about what has been going on and do not realize the impact the Project could have on their lives and property. (Written – Wilson T and K, Oral – Wilson K)
- Existing overhead power lines on River Road run through the backyards of homes. Commenter attached photos. (Written – T. and K. Wilson, Oral – K. Wilson)
- Driving north on River Road, over the Santa Ana River onto Archibald, are thousands of new homes. The area north had been dairy and farm land for over 100 years. Edison has crisscrossed that area with huge metal towers as well as overhead power lines. Driving further north to just south of California State Route 60, all lines disappear underground as they run deeper into the city of Ontario. SCE has gotten away with running these lines overhead prior to development of that area, and wishes to continue them now deep into the city of Corona. Corona has largely required utilities to be run underground for the last 30 years or so. (Written – T. and K. Wilson, Oral – K. Wilson)
- The CPUC is urged to deny approval of SCE's Circle City Project as submitted, to require all lines running adjacent to neighborhood homes to be buried and shielded, and require SCE to make all plans subject to the approval of the elected leaders of the City of Corona. (Written – T. and K. Wilson, Oral – K. Wilson)

5. Consideration of Issues Raised in Scoping Process

A primary purpose of this Scoping Report is to document the process of soliciting and identifying comments from agencies and the public. The scoping process provides the means to determine those issues that interested participants consider to be the principal areas for study and analysis. Every issue that has been raised during scoping that falls within the scope of CEQA will be addressed and/or be considered in the EIR

Appendix B

Mailing List and Certificate of Service

ESA

APPENDIX B

Mailing List and Certificate of Service

TABLE 1
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS
SENT A HARD COPY OF DRAFT EIR VIA OVERNIGHT DELIVERY SERVICE

CONTACT NAME	TITLE OR DIVISION	AGENCY/ ORGANIZATION	STREET	CITY	STATE	ZIP CODE
Lead Agency/Applicant						
Robert Peterson	Project Manager, Energy Division	California Public Utilities Commission,	505 Van Ness Avenue, 4th floor	San Francisco	CA	94102
Chloe Lukins	Energy Safety and Infrastructure Branch	California Public Utilities Commission	505 Van Ness Avenue, Room 4102	San Francisco	CA	94102
Kimberly Kim	Administrative Law Judge	California Public Utilities Commission	505 Van Ness Avenue, Room 5117	San Francisco	CA	94102-3214
Charles Mee, P.E	Office of Ratepayer Advocates	California Public Utilities Commission	505 Van Ness Avenue, Room 5121	San Francisco	CA	94102
Noel Obiora	Legal Division	California Public Utilities Commission	505 Van Ness Avenue, Room 5121	San Francisco	CA	94102
Elaine Lau	Energy Division	California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
Docket Clerk		California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
Bernice Goldsmith	Project Analyst	Southern California Edison Company	2 Innovation Way, #390H	Pomona	CA	91768-2560
State Agency						
California State Clearinghouse			1400 Tenth Street	Sacramento	CA	95814
Library						
Norco Public Library			3954 Old Hamner Road	Norco	CA	92860
Eastvale Branch Library			7447 Scholar Way	Eastvale	CA	92880
Corona Public Library			650 D Main Street	Corona	CA	92882

CONTACT NAME	TITLE OR DIVISION	AGENCY/ ORGANIZATION	STREET	CITY	STATE	ZIP CODE
Others						
Nicole Hoeksma Gordon		Sohagi Law Group, PLC	11999 San Vincente Blvd.	Los Angeles	CA	90049-5136
Aram Shumavon		Kevala, Inc.	4040 Civic Center Dr.	San Rafael	CA	94903
Brian Rahman		ZGlobal	604 Sutter St. Ste. 250	Folsom	CA	95603

TABLE 2
MASTER MAILING LIST:
AGENCIES, ORGANIZATIONS, AND INDIVIDUALS SENT A COMPACT DISC (CD) OF DRAFT EIR VIA UNITED STATES POSTAL SERVICE

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Federal, State and Local Agencies						
Federal						
U.S. Army Corps of Engineers, Regulatory Division	Section Chief	Dan Swensen	915 Wilshire Blvd	Los Angeles	CA	90017
U.S. Fish and Wildlife Service	Chief, Riverside and San Bernardino Counties	Karin Cleary-Rose	2177 Salk Avenue, Suite 250	Carlsbad	CA	92008-7385
State						
California Air Resources Board	Executive Officer	Richard Corey	P.O. Box 2815	Sacramento	CA	95812
California Department of Fish and Wildlife, Inland Deserts Region		Joanna Gibson	3602 Inland Empire Blvd, Suite C-220	Ontario	CA	91764
California Department of Fish and Wildlife	Office Technician	Tiffany Ellis	3602 Inland Empire Blvd, Suite C-220	Ontario	CA	91764
California Department of Transportation, District 8	Director	John Bulinski	464 West 4th Street	San Bernardino	CA	92401
California Department of Transportation - MS 40	Chief Div. of Aeronautics	Gary Cathey	P. O. Box 942874	Sacramento	CA	94274
California Department of Transportation - MS 49	Director	Malcolm Dougherty	1120 N St	Sacramento	CA	95814
California Energy Commission	Executive Director	Robert Oglesby	1516 Ninth Street	Sacramento	CA	95814
California Resources Agency	Secretary	John Laird	1416 Ninth Street, Suite 1311	Sacramento	CA	95814
Department of Health Services	Director	Toby Douglas	1501 Capitol Ave, Suite 6001	Sacramento	CA	94234
South Coast Air Quality Management District	Executive Officer	Barry Wallerstein	21865 Copley Drive	Diamond Bar	CA	91765
State Water Resources Control Board	Executive Director	Tom Howard	1001 “I” Street	Sacramento	CA	95814
South Coast Air Quality Management District	Program Supervisor	Jillian Wong	21865 Copley Drive	Diamond Bar	CA	91765

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Federal, State and Local Agencies (cont.)						
Local						
City of Chino	Director of Community Development	Nick Liguori	13220 Central Avenue	Chino	CA	91710
City of Chino	Senior Planner	Michael Hitz	13220 Central Avenue	Chino	CA	91710
City of Chino	Civil Engineering Manager	Jesus Plascencia	13220 Central Avenue	Chino	CA	91710
City of Chino	Assistant Engineer	Michael Bhatanawin	13220 Central Avenue	Chino	CA	91710
City of Corona	City Manager	Darrell Talbert	400 S. Vicentia Ave	Corona	CA	92882
City of Corona	Community Development Director	Joanne Coletta	400 S. Vicentia Ave	Corona	CA	92882
City of Corona		John Higginbotham	400 South Vicentia Avenue	Corona	CA	92882
City of Corona	Braun Blaising McLaughlin & Smith PC	Scott Blaising	915 L Street, Suite 1480	Sacramento	CA	95814
City of Eastvale	Mayor	Ike Boostma	12363 Limonite Ave, Suite 910	Eastvale	CA	91752
City of Eastvale	City Manager	Michele Nissen	12363 Limonite Ave, Suite 910	Eastvale	CA	91752
City of Eastvale	Planning Director	Eric Norris	12363 Limonite Ave, Suite 910	Eastvale	CA	91752
City of Eastvale	City Engineer	Joe Indrawan	12363 Limonite Ave, Suite 910	Eastvale	CA	91752
City of Norco	City Manager	Andy Okoro	2870 Clark Avenue	Norco	CA	92860
City of Norco	Public Works Director	Lori Askew	2870 Clark Avenue	Norco	CA	92860
City of Norco	Mayor	Herb Higgins	2870 Clark Avenue	Norco	CA	92860
City of Norco	Planning Commission Chair	Pat Hedges	2870 Clark Avenue	Norco	CA	92860
City of Norco	Planning Director	Steve King	2870 Clark Avenue	Norco	CA	92860
City of Ontario	City Manager	Al Boling	303 East "B" Street	Ontario	CA	91764
City of Ontario	Mayor	Paul S. Leon	303 East "B" Street	Ontario	CA	91764
City of Ontario	Development Director	Otto Kroutill	303 East "B" Street	Ontario	CA	91764
Local (cont.)						
City of Ontario	Planning Director	Scott Murphy	303 East "B" Street	Ontario	CA	91764
City of Ontario Planning Commission	Chairman		303 East "B" Street	Ontario	CA	91764

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Federal, State and Local Agencies (cont.)						
Riverside County Board of Supervisors, Second District	Supervisor	John F. Tavaglione	4080 Lemon Street - 5th Floor	Riverside	CA	92501
Riverside County Assessor-Recorder-County Clerk	County Clerk Recorder		2720 Gateway Drive	Riverside	CA	92507
Riverside County Flood Control	General Manager	Warren Williams	1995 Market St	Riverside	CA	92501
Riverside County Planning Department	Executive Assistant	Karlene Hernandez	P.O. Box 1409	Riverside	CA	92502
Riverside County Planning Department	Planning Director	Steve Weiss, AICP	P.O. Box 1409	Riverside	CA	92502
Riverside County Flood Control & Water Conservation District		Kevin Cunningham	1995 Market St.	Riverside	CA	92501
Riverside County Transportation Commission	Executive Director	Anne Mayer	P.O.Box 12008	Riverside	CA	92502
San Bernardino County Assessor-Recorder-County Clerk	County Clerk Recorder		San Bernardino County Hall of Records Building, First Floor, 222 W. Hospitality Lane	San Bernardino	CA	92415-0022
San Bernardino County Board of Supervisors, Fourth District	Supervisor	Curt Hagman	385 N Arrowhead Avenue, Fifth Floor	San Bernardino	CA	92415
San Bernardino County Planning Department	Supervising Planner	Dave Prusch	385 N. Arrowhead Ave	San Bernardino	CA	92415
Santa Ana Regional Water Quality Control Board	Acting Executive Officer	Kurt Berchtold	3737 Main Street, Suite 500	Riverside	CA	92501
Western Riverside County, Regional Conservation Authority	Executive Director	Charles Landry	3403 10th Street, Suite 320	Riverside	CA	92501
Orange County Water District	General Manager	Michael R. Markus	PO Box 8300	Fountain Valley	CA	92728
San Bernardino County Department of Public Works	Public Works Engineer III	Nidham Aram	825 East Third Street	San Bernardino	CA	92415
San Bernardino County, Department of Public Works	Environmental Management Division	Patrick M. Egle	385 E. Third Street, Room 123	San Bernardino	CA	92415-0835
Organizations						
Agua Caliente Band of Cahuilla Indians	Chairperson	Jeff Grubbe	5401 Dinah Shore Drive	Palm Springs	CA	92264
Agua Caliente Band of Cahuilla Indians THPO	Tribal Historic Preservation Officer	Patricia Garcia	5401 Dinah Shore Drive	Palm Springs	CA	92264
Augustine Band of Cahuilla Mission Indians	Chairperson	Mary Ann Green	P.O. Box 846	Coachella	CA	92236
Cabazon Band of Mission Indians	Chairperson	Doug Welmas	84-245 Indio Springs Parkway	Indio	CA	92203

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Organizations (cont.)						
Cahuilla Band of Indians	Chairperson	Luther Salgado	52701 Highway 371	Anza	CA	92539
Colorado River Indian Reservation	Tribal Secretary	Amanda Barrera	26600 Mohave Road	Parker	AZ	85344
Gabrieleno Band of Mission Indians - Kizh Nation	Chairperson	Andrew Salas	P.O. Box 393	Covina	CA	91723
Gabrieleno/Tongva Nation	Cultural Resources Director	Sam Dunlap	P.O. Box 86908	Los Angeles	CA	90086
Gabrieleno/Tongva Nation	Chairperson	Sandonne Goad	106 1/2 Judge John Aiso Street	Los Angeles	CA	90045
Gabrieleno/Tongva San Gabriel Band of Mission	Chairperson	Anthony Morales	P.O. Box 693	San Gabriel	CA	91778
Tongva Ancestral Territorial Tribal Nation	Tribal Administrator	John Tommy	4712 Admiralty Way, Suite 172	Marina Del Rey	CA	90292
Juaneno Band of Mission Indians	Vice Chairman	Adolph 'Bud' Sepulveda	P.O. Box 25828	Santa Ana	CA	92799
Juaneno Band of Mission Indians	Cultural Resources Coordinator	Alfred Cruz	P.O. Box 25628	Santa Ana	CA	92799
Juaneno Band of Mission Indians		Anita Espinoza	639 Holten Road	Talent	OR	97540
Juaneno Band of Mission Indians	Tribal Chairperson	Sonia Johnston	P.O. Box 25628	Santa Ana	CA	92799
Juaneno Band of Mission Indians Acjachemen	Chairperson		32161 Avenida Los Amigos	San Juan Capistrano	CA	92675
Juaneno Band of Mission Indians Acjachemen	Chairwoman	Teresa Romero	31411-A La Matanza Street	San Juan Capistrano	CA	92675
Kern Valley Indian Council	Co-Chairperson	Robert Robinson	P.O. Box 401	Weldon	CA	93283
Kupa Cultural Center (Pala Band)	Assistant Director	Shasta Gaugen	35008 Pala Temecula Road, PMB 50	Pala	CA	92059
La Jolla Band of Luiseno Indians	Chairperson	Thomas Rodrigues	22000 Highway 76	Pauma Valley	CA	92061
La Jolla Band of Mission Indians	Chairwoman	Lavonne Peck	22000 Highway 76	Pauma Valley	CA	92061
Los Coyotes Band of Mission Indians	Spokesperson	Francine Kupsch	P.O. Box 189	Warner	CA	92086
Los Coyotes Band of Mission Indians	Chairman	Shane Chapparosa	P.O. Box 189	Warner Springs	CA	92086
Morongo Band of Mission Indians	Cultural Resources Manager	Denisa Torres	12700 Pumarra Road	Banning	CA	92220
Morongo Band of Mission Indians	Cultural Heritage Prog.	Michael Contreras	12700 Pumarra Road	Banning	CA	92220
Morongo Band of Mission Indians	Chairperson	Robert Martin	12700 Pumarra Road	Banning	CA	92220
Morongo Band of Mission Indians	Tribal Elder	Ernest H. Siva	9570 Mias Canyon Road	Banning	CA	92220

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Organizations (cont.)						
Pala Band of Mission Indians	Chairperson	Robert H. Smith	35008 Pala Temecula Road, PMB 50	Pala	CA	92059
Pauma and Yuima Reservation	Cultural Committee	Charles Devers	P.O. Box 369	Pauma Valley	CA	92061
Pauma and Yuima Reservation	Chairperson	Randall Majel	P.O. Box 369	Pauma Valley	CA	92061
Pauma and Yuima Reservation	Chairperson	Temet Aguilar	P.O. Box 369	Pauma Valley	CA	92061
Pauma Valley Band of Luiseno Indians		Bennae Calac	P.O. Box 369	Pauma Valley	CA	92061
Pechanga Band of Mission Indians	Chairperson	Mark Macarro	P.O. Box 1477	Temecula	CA	92593
Pechanga Band of Mission Indians	Cultural Resource Center	Paul Macarro	P.O. Box 1477	Temecula	CA	92593
Pechanga Cultural Resources Department	Cultural Analyst	Anna Hoover	P.O. Box 2183	Temecula	CA	92593
Ramona Band of Cahuilla Mission Indians	Chairman	Joseph Hamilton	P.O. Box 391670	Anza	CA	92539
Rincon Band of Mission Indians	Chairperson	Bo Mazzetti	1 West Tribal Road	Valley Center	CA	92082
Rincon Band of Mission Indians	Tribal Historic Pres Officer	Vincent Whipple	1 West Tribal Road	Valley Center	CA	92082
San Luis Rey Band of Mission Indians	Cultural Department		1889 Sunset Drive	Vista	CA	92081
Pauma and Yuima. ATTN: EPA			P.O Box 368	Pauma Valley	CA	92061
San Luis Rey Band of Mission Indians	Tribal Council		1889 Sunset Drive	Vista	CA	92081
San Manuel Band of Mission Indians	Policy/Cultural Resources Department	Ann Brierty	26569 Community Center Drive	Highland	CA	92346
San Manuel Band of Mission Indians		James Ramos	26569 Community Center Drive	Highland	CA	92346
San Manuel Band of Mission Indians	Chairwoman	Lynn Valbuena	26569 Community Center Drive	Highland	CA	92346
Santa Rosa Band of Mission Indians	Chairman	John Marcus	P.O. Box 391820	Anza	CA	92539
Serrano Nation of Indians		Goldie Walker	6588 Valaria Drive	Highland	CA	92346
Soboba Band of Luiseno Indians	Cultural Resources Manager	Joseph Ontiveros	P.O. Box 487	San Jacinto	CA	92581
Soboba Band of Luiseno Indians	Chairperson; Attn: Carrie Garcia	Rosemary Morillo	P.O. Box 487	San Jacinto	CA	92581
Ti'At Society		Cindi Alvitre	66515 E. Seaside Walk #C	Long Beach	CA	90803
Tongva Ancestral Territorial Tribal Nation	Chairperson	Mary Resvaloso	4712 Admiralty Way, Suite 172	Marina Del Rey	CA	90292
Torres-Martinez Desert Cahuilla Indians	Chairperson	Mary Resvaloso	P.O. Box 1160	Thermal	CA	92274
Waste Management of the Inland Empire	Public Sector Solutions Manager	Carolyn Anderson Corrao	800 S. Temescal St.	Corona	CA	92879

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals						
		Alice Whey	1966 Adobe	Corona	CA	92882
		Anna Marie Coriddi	1085 Regina Way	Corona	CA	92882
		Bill Van Leeuwer	13000 Citrus St	Eastvale	CA	92880
		Brandon McGinnis	2611 Condor Circle	Corona	CA	92882
		Chad Miller	855 Shepard Crest Drive	Corona	CA	92882
		Cheryl Peabody	2823 James Street	Corona	CA	92881
		Craig Miller Jr.	3070 Wilderness Court	Corona	CA	92880
		Dickie Simmons	7091 Ginko Ct	Eastvale	CA	92880
		Don Williamson	2467 Emerson Dr	Corona	CA	92882
		Donna Ostak	1407 Roadrunner Drive	Corona	CA	92881
		Ed Harrison	1690 Greenbriar Avenue	Corona	CA	928810
		Edward A. Lozano	6658 Bright Gem Court	Corona	CA	92880
		Edward Hauschild	1370 Garnet Street	Corona	CA	92882
		Eric Frickle	420 McKinley Street #111-451	Corona	CA	92879
		Erica Reyes	1112 Fullerton	Corona	CA	92879
		Harold & Karen Chapin	941 W Crestview Street	Corona	CA	92882
		Hubert Clark	6673 Bright Gem Court	Eastvale	CA	92880
		Jack Moons	34331 Green Lantern St	Dana Point	CA	92629
		John Weyhgandt	2211 Via Pacifica	Corona	CA	92882
		Jorge Castro	1643 Golden Tree Court	Corona	CA	92846
		Juan E. and Delia A. Osorio	204 West Hacienda Drive	Corona	CA	92882
		Kate Ferguson	7168 Sheffield St	Eastvale	CA	92880
		Linda Linville	962 A Innkeeper Lane	Corona	CA	92881
		Lori Pierce	3428 Braemar Lane	Corona	CA	92882
		Mark R. Peabody	2328 James Street	Corona	CA	92881
		Maureen Wang	6884 Monte Vista Court	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Melinda Stilwell	764 Mountain Shadows Drive	Corona	CA	92881
		Michael Gammon	1027 Tanford Lane	Corona	CA	92881
		Michael Kilgore	1215 Lakeport Lane	Corona	CA	92881
		Michelle Kearns	945 Caribou Circle	Corona	CA	92881
		Pamela Thieme	4682 Feather River Road	Corona	CA	92880
		Patricia Street	255 East Mission Road	Corona	CA	92879
		Rana Allen	1632 Windmill Lane	Corona	CA	92879
		Ric Jansen	1320 Stein Way	Corona	CA	92882
		Robert Peak	2110 Santa Anita	Norco	CA	92860
		Ruben Aceves	465 Lauren Marcella Drive	Corona	CA	92882
		Sandy McGinnis	2611 Condor Circle	Corona	CA	92882
		Scot Hutter	7260 Leighton Dr	Eastvale	CA	92880
		Scott Eastride	547 Shasta Drive	Corona	CA	92881
		Shawn McGinnis	2611 Conder Circle	Corona	CA	92882
		Shelley & Anthony Rossi	1169 Kraemer Drive	Corona	CA	92882
		Sheryl Leverette	2241 Indigo Hills Drive, Unit 6	Corona	CA	92879
		Tarina Smith	1387 Redtail Drive	Corona	CA	92879
		Veronica O'Doherty	19025 Grovewood Drive	Corona	CA	92881
		Vicki Jaeger	3964 Via Miguel Street	Corona	CA	92881
		William J. Pink	48310 Pechanga Road	Temecula	CA	92592
		Ronald & Rita Stivers	2398 Orchard Lane	Corona	CA	92882
		Susan Rambert	1340 Misty Stream Way	Corona	CA	92881
		Robert and Brenna Brown	14176 Spruce Grove Court	Eastvale	CA	92880
		Tara Marchido	7474 Elm Grove Ave	Eastvale	CA	92880
		Krupali Tejura	2136 Applegate Drive	Corona	CA	92882
		Andrea Hove	14095 Lemon Valley Avenue	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Lydia Kray	1260 Corona Pointe Ct #102	Corona	CA	92879
		Jeff Marshburn	1054 E Chase Drive	Corona	CA	92881
		Michele Wentworth	3815 Via Zumaya Street	Corona	CA	92881
		Thomas E. and Kathleen G. Wilson	1327 Catherine Circle	Corona	CA	92880
		Dee Castro	387 Magnolia Ave #103	Corona	CA	92879
		Susan Velasquez	2618 Cherrybark Lane	Corona	CA	92881
		Ilene H. Robbins	19060 State Street	Corona	CA	92881
		Scott Won	555 Queensland Circle, Suite 102	Corona	CA	92879
		Lisa Dumont	160 W Foothill Blvd, Suite 105 #255	Corona	CA	92882
		Greg Cooley	264 Mariah Circle	Corona	CA	92879
		Rosalio Ulloa	200 S Main Street, Suite 307	Corona	CA	92882
		Tariq Shamma	807 E Chase Drive	Corona	CA	92881
		Kirk D. Bennet	1803 Myrtle Street	Corona	CA	92880
		Dennis J. Brandt	438 Rembrandt Drive	Corona	CA	92882
		Nicole Krenzin	2627 Falcon Circle Drive	Corona	CA	92882
		Rajesh Dayal	13738 Apple Moss Court	Eastvale	CA	92880
		John Schafer	3161 Michelson Drive, Suite 425	Irvine	CA	92612
		Aaron Smith	13291 Criolla Circle	Corona	CA	92880
		Olga Hernandez	1599 Tanglewood Drive	Corona	CA	92882
		Susan Garvey	6713 Leanne Street	Eastvale	CA	91752
		Cheryl Conklin	6909 Rivertrails Drive	Eastvale	CA	91752
		Jodee Fidel	7015 Oakhurst Street	Eastvale	CA	92880
		Bingbing Zhao	7963 Blasidell Court	Eastvale	CA	92880
		Siyang Wang	7235 Excelsior Drive	Eastvale	CA	92880
		Johnnie & Elly Griffitts	1854 Peeler Street	Corona	CA	92882

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Sylvia Barnett	1052 W Ontario Avenue	Corona	CA	92882
		Lionel E. Rentschler	260 East Ontario Avenue, Suite 205	Corona	CA	92879
		Christine McBurney	754 East Arrow Highway, Suite C	Covina	CA	91722
		Alicia Jensen	14350 Cherry Creek Circle	Corona	CA	92880
		Sharon and Steven Beyler	1757 Galloway Lane	Corona	CA	92881
		Derek J.Gutierrez	4498 Driving Range Rd	Corona	CA	92883
		Cindy Holmes	1447 Railroad Drive	Corona	CA	92882
		Betty Jean O'Donnell	4160 Temescal Canyon Road #500	Corona	CA	92504
		Kathleen Ray	527 Priceland Court	Corona	CA	92879
		Roger and Lisa Faubel	25 Orchard Road	Lake Forest	CA	92630
		William K. McClain	8011 Santa Anita St	Corona	CA	92881
		Victor Dominguez	2242 Coachman Circle	Corona	CA	92881
		John W. Baldwin	2675 Sierra Ave	Norco	CA	92860
		Gayle Gois	1905 W Ontario Ave	Corona	CA	92882
		Joanne Genis	3766 Garden Court	Chino Hills	CA	91709
		Erin K.Oyama	1900 Main Street, Suite 700	Irvine	CA	92614
		Ron & Melissa Lenhart	14655 Alpaca Court	Eastvale	CA	92880
		Cheryl Degano	3788 McCray Street	Riverside	CA	92506
		Jingxin Li and Xiaojuan Yuan	14667 Alpaca Court	Eastvale	CA	92880
		William Johnson	14679 Alpaca Court	Eastvale	CA	92880
		Bruce Biller	7904 Sequin Court	Eastvale	CA	92880
		Darin & Charlene James	14983 Brooktree Street	Eastvale	CA	92880
		Patricia	7192 Sheffield St	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Robert S.	3481 Grant St	Corona	CA	92879
		Eileen B.	1555 San Fernando Drive	Corona	CA	92882
		Linda A. P.	4444 Putting Green Drive	Corona	CA	92883
			13381 Magnolia Avenue	Corona	CA	92879
		Sandy Klein	2932 Sonrisa Drive	Corona	CA	92881
		Kim Manns	2970 McDonald Lane	Corona	CA	92881
		Laura Collins	1312 Radcliffe Circle	Corona	CA	92881
		Michael Downs	1296 Magnolia Ave	Corona	CA	92879
		Al Agramonte	P.O Box 79018	Corona	CA	92877
		Dana McClure	P.O Box 3615	Corona	CA	92878-3615
		Marlene Weyhgandt	P.O Box 1404	Corona	CA	92878
		Trini Jimenez	One World Trade Center, Suite 1680	Long Beach	CA	90831
		Sherry Messner	1296 Magnolia Ave	Corona	CA	92879
		Diana & Matthew Zick	8801 Armadillo Drive	Eastvale	CA	92880
		Jade Cui & Almon Li	14476 Badger Lane	Eastvale	CA	92880
		Margo Wuence	14311 Bridge Street	Corona	CA	92880
		Sarah Garcia	14481 Arctic Fox Ave	Eastvale	CA	92880
		Matthew & Abby Knight	14644 Alpaca Court	Eastvale	CA	92880
		Jeremy and Easton Lee	14490 Bison Court	Eastvale	CA	92880
		Tianjun Fan	14464 Badger Lane	Eastvale	CA	92880
		Paul Hoang	14632 Alpaca Court	Eastvale	CA	92880
		Ericka Navarro	8789 Armadillo Drive	Eastvale	CA	92880
		Wendy Lacambra	14984 Franklin Lane	Eastvale	CA	92880
		Catheline D. Merilus	14668 Alpaca Court	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Melissa E. and Carlos Morones	14442 Bison Court	Eastvale	CA	92880
		Ying Xu	6615 Cedar Creek Road	Corona	CA	92880
		Kristian Sutherland	14417 Badger Lane	Eastvale	CA	92880
		Armando and Sylvia Rodriguez	14445 Bison Court	Eastvale	CA	92880
		Kai Liu	7447 Silver Saddle Court	Eastvale	CA	92880
		Bernard T. Ponce	14513 Badger Lane	Eastvale	CA	92880
		Qian Li, Yangchun Shi	7459 Silver Saddle Court	Eastvale	CA	92880
		Liang Lee	14995 Brooktree Street	Eastvale	CA	92880
		Terry Toles	7018 Barwick Court	Eastvale	CA	91880
		Jessica Song	13600 East Creek Court	Eastvale	CA	92880
		Gail Paulsen	7018 Barwick Court	Eastvale	CA	92880
		Pamela Li	13383 Los Robles Court	Eastvale	CA	92880
		Rose	7303 Maddox Court	Eastvale	CA	92880
		Ni Li	14989 Brooktree Street	Eastvalee	CA	92880
		Adriana Agredano	8778 Armadillo Drive	Eastvale	CA	92880
		Fidencio Zepada	14950 Brooktree Street	Eastvale	CA	92880
		Mike & Sonja Burns	7236 Leighton Drive	Eastvale	CA	92880
		Jamie G. & Jennifer DeLaCova	7078 Barwick Court	Eastvale	CA	92880
		Evelyn & Joe Garcia	14923 Brooktree Street	Eastvale	CA	92880
		Ryan & Lindsay Maine	7095 Leighton Drive	Eastvale	CA	92880
		Peter Nguyen	8790 Armadillo Drive	Eastvale	CA	92880
		Son Tran	8790 Armadillo Drive	Eastvale	CA	92880
		Rushabh Shah	14971 Brooktree Street	Eastvale	CA	92880
		Zhaoyi Li	7314 Rondo Drive	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Haiwan and Terry Ellis	14977 Brooktree Street	Eastvale	CA	92880
		Ada Yunying Zheng	14665 Viva Drive	Eastvale	CA	92880
		Yinfa Chen	13305 Brass Ring Lane	Eastvale	CA	92880
		Wayne	7375 Lichen Drive	Eastvale	CA	92880
		Penny Lu	7438 Silver Saddle Court	Eastvale	CA	92880
		Mark and Amy Shea	14932 Brooktree Street	Eastvale	CA	92880
		Janelle Elias	14929 Brooktree Street	Eastvale	CA	92880
		Teofila Alcazar	14603 Badger Lane	Eastvale	CA	92880
		Susan Jiang	7982 Blaisdell Court	Eastvale	CA	92880
		Hao Wang	7982 Blaisdell Court	Eastvale	CA	92880
		Arti Bhatt	14947 Brooktree Street	Corona	CA	92880
		James and Monica Jacques	6737 Musk Mallow Court	Eastvale	CA	92880
		Richard and Carroll Robbins	119 N Maple Street, Suite N	Corona	CA	92880
		Carroll Robbins	2205 Goldenbush Drive	Corona	CA	92882
		Howard Feng	71005 Talasi Drive	Eastvale	CA	92880
		Kelli Reese	7236 Tiburon Drive	Eastvale	CA	92880
		Beverly Donner	4230 Floyd Dr	Corona	CA	92883
		Monirath Keo	13706 Lowell Street	Eastvale	CA	92880
		Michael Aolin	2700 Hidden Hills Way	Corona	CA	92882
		Adam Wood	1801 E Katella Ave #1002	Anaheim	CA	92805
		Jeff Miller	370 W Grand Boulevard	Corona	CA	92882
		Jackson Horne	5214 N Diamond Point Road	La Canada	CA	91011
		Virgina Coriddi	636 Quince Street	Corona	CA	92879
		Karen Spiegel	1800 S Main Street	Corona	CA	92882
		Todd Rigby	13699 Hill Grove Street	Eastvale	CA	92880

AGENCY/ORGANIZATION/ INDIVIDUAL	TITLE OR DIVISION	NAME	STREET	CITY	STATE	ZIP CODE
Individuals (cont.)						
		Jason & Dee Scott	890 Aspen Street	Corona	CA	92879
		Gary Messa	1296 Magnolia Ave	Corona	CA	92879
		Tom Richins	1031 E Grand Blvd	Corona	CA	92879
		Jessica Pippen	14919 Coleman Court	Eastvale	CA	92880
		Julie Rust	7054 Dove Valley Way	Corona	CA	92880
		Cindy Quach	12678 Burbank Road	Eastvale	CA	92880
		Michannon and Brian Dierks	14608 Alpaca Court	Eastvale	CA	92880
		Kelly Fisher	14790 Tommy Court	Eastvale	CA	92880
		Dr. Dana F. Sutton	1147 E Grand Blvd	Corona	CA	92879
		Bobby Spiegel	904 E. 6th Street	Corona	CA	92879
		Joe Morgan	2063 Wren Ave.	Corona	CA	92879
		Arti Bhatt	14947 Brooktree Street	Corona	CA	92880
		Cynthia Vincent	2374 Taylor Ave.	Corona	CA	92882
		Maureen Wang	6881 Monte Vista Ct.	Eastvale	CA	92880
		Erin K. Oyama	P.O Box 19712	Irvine	CA	92623-8712
		Christian Da Costa	14445 Jan Remo Dr.	Eastvale	CA	92880
		Christian McBurney	7116 Leighton Drive	Eastvale	CA	92880
		John	2824 Walking Horse Ranch Dr.	Norco	CA	92860

TABLE 3
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
	Kathleen	Wilson	1327 Catherine Circle	Corona	CA	92880
	Andrea	Hove	14095 Lemon Valley Avenue	Eastvale	CA	92880
	Dickie	Simmons	7091 Ginko Ct	Eastvale	CA	92880
	Bobby	Spiegel	904 E 6th Street	Corona	CA	92879
	Tom	Richins	1031 E Grand Blvd	Corona	CA	92879
	Tariq	Shamma	807 E Chase Drive	Corona	CA	92881
	Sherry	Messner	1296 Magnolia Drive	Corona	CA	92879
	Tom	Wilson	1327 Catherine Circle	Corona	CA	92880
	Gary	Messner	1296 Magnolia Ave	Corona	CA	92879
	Michael	Aoun	2700 Hidden Hills Way	Corona	CA	92882
	Kirk	Bennett	1803 Myrtle Street	Corona	CA	92880
	Joe	Morgan	2063 Wren Ave	Corona	CA	92879
	Todd	Rigby	13699 Hill Grove Street	Eastvale	CA	92880
	Krupali	Tejura	2136 Applegate Drive	Corona	CA	92882
	Karen	Spiegel	1800 S Main Street	Corona	CA	92882
UC Irvine Environmental Law Clinic	Trey	Wilson	PO Box 5479	Irvine	CA	92616
Resident			PO Box 8300	Fountain Valley	CA	92728
Resident			2613 Steeplechase Way	Norco	CA	92860
Resident			2623 Steeplechase Way	Norco	CA	92860
Resident			2684 Steeplechase Way	Norco	CA	92860
Resident			2674 Steeplechase Way	Norco	CA	92860
Resident			2664 Steeplechase Way	Norco	CA	92860
Resident			2654 Steeplechase Way	Norco	CA	92860
Resident			2634 Steeplechase Way	Norco	CA	92860
Resident			2624 Steeplechase Way	Norco	CA	92860
Resident			2614 Steeplechase Way	Norco	CA	92860
Resident			2594 Steeplechase Way	Norco	CA	92860
Resident			2584 Steeplechase Way	Norco	CA	92860
Resident			2583 Steeplechase Way	Norco	CA	92860
Resident			4145 Equestrian Ln	Norco	CA	92860
Resident			4148 Sundance Ln	Norco	CA	92860
Resident			5728 Waco St	Chino	CA	91710
Resident			4177 Sundance Ln	Norco	CA	92860
Resident			4197 Sundance Ln	Norco	CA	92860
Resident			1358 Jasmine Cir	Corona	CA	92880
Resident			1308 Jasmine Cir	Corona	CA	92880
Resident			1343 Catherine Cir	Corona	CA	92880
Resident			1351 Catherine Cir	Corona	CA	92880
Resident			1356 Catherine Cir	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1342 Catherine Cir	Corona	CA	92880
Resident			1309 Fernwood Cir	Corona	CA	92880
Resident			1341 Fernwood Cir	Corona	CA	92880
Resident			1353 Fernwood Cir	Corona	CA	92880
Resident			14860 Louis Pasteur Dr	Riverside	CA	92508
Resident			1306 Fernwood Cir	Corona	CA	92880
Resident			1311 Jasmine Cir	Corona	CA	92880
Resident			7312 Dolphine Crest Ave	Las Vegas	NV	89129
Resident			1365 Oleander Cir	Corona	CA	92880
Resident			3815 S West Temple	Salt lake city	UT	84115
Resident			1312 Oleander Cir	Corona	CA	92880
Resident			1368 Oleander Cir	Corona	CA	92880
Resident			1387 Oxford Cir	Corona	CA	92880
Resident			1341 Oxford Cir	Corona	CA	92880
Resident			1309 Oxford Cir	Corona	CA	92880
Resident			1312 Oxford Cir	Corona	CA	92880
Resident			1348 Oxford Cir	Corona	CA	92880
Resident			1390 Oxford Cir	Corona	CA	92880
Resident			1863 Fairview Dr	Corona	CA	92880
Resident			1609 Fairview Dr	Corona	CA	92880
Resident			1613 Fairview Dr	Corona	CA	92880
Resident			1617 Fairview Dr	Corona	CA	92880
Resident			1621 Fairview Dr	Corona	CA	92880
Resident			1233 Canyon Cir	Corona	CA	92880
Resident			1275 Canyon Cir	Corona	CA	92880
Resident			1278 Canyon Cir	Corona	CA	92880
Resident			1236 Canyon Cir	Corona	CA	92880
Resident			1233 Dale Cir	Corona	CA	92880
Resident			1265 Dale Cir	Corona	CA	92880
Resident			1293 Dale Cir	Corona	CA	92880
Resident			1296 Dale Cir	Corona	CA	92880
Resident			1268 Dale Cir	Corona	CA	92880
Resident			1283 Dover Cir	Corona	CA	92880
Resident			201 Isabella St	Pittsburgh	PA	15212
Resident			1298 Dover Cir	Corona	CA	92880
Resident			1286 Dover Cir	Corona	CA	92880
Resident			4329 Trail St	Norco	CA	92860
Resident			4285 Trail St	Norco	CA	92860
Resident			9561 Box Springs Mountain Rd	Moreno Valley	CA	92557
Resident			2433 Wagon Wheel Rd	Norco	CA	92860

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			2453 Wagon Wheel Rd	Norco	CA	92860
Resident			2473 Wagon Wheel Rd	Norco	CA	92860
Resident			2503 Wagon Wheel Rd	Norco	CA	92860
Resident			2513 Wagon Wheel Rd	Norco	CA	92860
Resident			2523 Wagon Wheel Rd	Norco	CA	92860
Resident			2533 Wagon Wheel Rd	Norco	CA	92860
Resident			5572 Roundup Rd	Norco	CA	92860
Resident			2563 Wagon Wheel Rd	Norco	CA	92860
Resident			2355 Kips Korner Rd	Norco	CA	92860
Resident			2345 Kips Korner Rd	Norco	CA	92860
Resident			2120 Blakemore Ln	La Grange	KY	40031
Resident			2325 Kips Korner Rd	Norco	CA	92860
Resident			2211 Santa Anita Rd	Norco	CA	92860
Resident			571 S Silverado Way	Anaheim	CA	92807
Resident			2161 Santa Anita Rd	Norco	CA	92860
Resident			2151 Santa Anita Rd	Norco	CA	92860
Resident			PO Box 515	Norco	CA	92860
Resident			2131 Santa Anita Rd	Norco	CA	92860
Resident			2121 Santa Anita Rd	Norco	CA	92860
Resident			2107 Santa Anita Rd	Norco	CA	92860
Resident			2102 Santa Anita Rd	Norco	CA	92860
Resident			2110 Santa Anita Rd	Norco	CA	92860
Resident			2120 Santa Anita Rd	Norco	CA	92860
Resident			2130 Santa Anita Rd	Norco	CA	92860
Resident			2140 Santa Anita Rd	Norco	CA	92860
Resident			2150 Santa Anita Rd	Norco	CA	92860
Resident			2160 Santa Anita Rd	Norco	CA	92860
Resident			2170 Santa Anita Rd	Norco	CA	92860
Resident			2180 Santa Anita Rd	Norco	CA	92860
Resident			2190 Santa Anita Rd	Norco	CA	92860
Resident			5510 Highpoint Dr	Crestwood	KY	40014
Resident			2834 Hamner Ave # 508	Norco	CA	92860
Resident			2334 Corydon Ave	Norco	CA	92860
Resident			2344 Corydon Ave	Norco	CA	92860
Resident			2354 Corydon Ave	Norco	CA	92860
Resident			2252 Santa Anita Rd	Norco	CA	92860
Resident			2252 Santa Anita Rd	Norco	CA	92860
Resident			2262 Santa Anita Rd	Norco	CA	92860
Resident			2272 Santa Anita Rd	Norco	CA	92860
Resident			2282 Santa Anita Rd	Norco	CA	92860

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			2292 Santa Anita Rd	Norco	CA	92860
Resident			2334 Santa Anita Rd	Norco	CA	92860
Resident			2344 Santa Anita Rd	Norco	CA	92860
Resident			2354 Santa Anita Rd	Norco	CA	92860
Resident			2364 Santa Anita Rd	Norco	CA	92860
Resident			2374 Santa Anita Rd	Norco	CA	92860
Resident			2384 Santa Anita Rd	Norco	CA	92860
Resident			2394 Santa Anita Rd	Norco	CA	92860
Resident			2357 Corydon Ave	Norco	CA	92860
Resident			3070 Shadow Canyon Cir	Norco	CA	92860
Resident			2359 Golden Gate Cir	Norco	CA	92860
Resident			2297 Santa Anita Rd	Norco	CA	92860
Resident			2285 Santa Anita Rd	Norco	CA	92860
Resident			2279 Santa Anita Rd	Norco	CA	92860
Resident			2269 Santa Anita Rd	Norco	CA	92860
Resident			2259 Santa Anita Rd	Norco	CA	92860
Resident			2249 Santa Anita Rd	Norco	CA	92860
Resident			2239 Santa Anita Rd	Norco	CA	92860
Resident			31581 Aguacate Rd	San Juan Capo	CA	92675
Resident			3818 E Coronado St	Anaheim	CA	92807
Resident			PO Box 711	Dallas	TX	75221
Resident			1189 Country Club Ln	Corona	CA	92880
Resident			1181 Country Club Ln	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			1605 Fairview Dr	Corona	CA	92880
Resident			25681 Weston Dr	Laguna Niguel	CA	92677
Resident			2870 Clark Ave	Norco	CA	92860
Resident			5036 Bluff St	Norco	CA	92860
Resident			4620 Bluff St	Corona	CA	92880
Resident			4620 Bluff St	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			PO Box 940	Corona	CA	92878
Resident			901 Main St, Ste 4700	Dallas	TX	75202
Resident			14952 Dahlquist Rd	Irvine	CA	92604
Resident			907 Pathfinder Way	Corona	CA	92880
Resident			849 Nolan Way	Corona	CA	92880
Resident			857 Nolan Way	Corona	CA	92880
Resident			863 Nolan Way	Corona	CA	92880
Resident			869 Nolan Way	Corona	CA	92880
Resident			875 Nolan Way	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			922 Pathfinder Way	Corona	CA	92880
Resident			916 Pathfinder Way	Corona	CA	92880
Resident			934 Primrose Ln	Corona	CA	92880
Resident			930 Primrose Ln	Corona	CA	92880
Resident			924 Primrose Ln	Corona	CA	92880
Resident			920 Primrose Ln	Corona	CA	92880
Resident			914 Primrose Ln	Corona	CA	92880
Resident			910 Primrose Ln	Corona	CA	92880
Resident			904 Primrose Ln	Corona	CA	92880
Resident			900 Primrose Ln	Corona	CA	92880
Resident			921 Blossomcreek Ln	Corona	CA	92880
Resident			931 Blossomcreek Ln	Corona	CA	92880
Resident			941 Blossomcreek Ln	Corona	CA	92880
Resident			951 Blossomcreek Ln	Corona	CA	92880
Resident			961 Blossomcreek Ln	Corona	CA	92880
Resident			901 Primrose Ln	Corona	CA	92880
Resident			905 Primrose Ln	Corona	CA	92880
Resident			911 Primrose Ln	Corona	CA	92880
Resident			915 Primrose Ln	Corona	CA	92880
Resident			921 Primrose Ln	Corona	CA	92880
Resident			925 Primrose Ln	Corona	CA	92880
Resident			931 Primrose Ln	Corona	CA	92880
Resident			935 Primrose Ln	Corona	CA	92880
Resident			161 N Mckinley St, Ste 120	Corona	CA	92879
Resident			960 Primrose Ln	Corona	CA	92880
Resident			958 Foxtail Dr	Corona	CA	92880
Resident			516 Malloy Ct	Corona	CA	92880
Resident			971 Clover Ln	Corona	CA	92880
Resident			981 Clover Ln	Corona	CA	92880
Resident			34 Tanglewood	Aliso Viejo	CA	92656
Resident			961 Primrose Ln	Corona	CA	92880
Resident			971 Primrose Ln	Corona	CA	92880
Resident			34 Tanglewood	Aliso Viejo	CA	92656
Resident			981 Primrose Ln	Corona	CA	92880
Resident			985 Primrose Ln	Corona	CA	92880
Resident			991 Primrose Ln	Corona	CA	92880
Resident			995 Primrose Ln	Corona	CA	92880
Resident			1001 Primrose Ln	Corona	CA	92880
Resident			1011 Primrose Ln	Corona	CA	92880
Resident			817 N Dickel St	Anaheim	CA	92805

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1031 Primrose Ln	Corona	CA	92880
Resident			1041 Primrose Ln	Corona	CA	92880
Resident			1051 Primrose Ln	Corona	CA	92880
Resident			24571 Alcoba Dr	Mission Viejo	CA	92691
Resident			990 Acorn Ln	Corona	CA	92880
Resident			971 Acorn Ln	Corona	CA	92880
Resident			981 Acorn Ln	Corona	CA	92880
Resident			38332 Corte Alegria	Temecula	CA	92592
Resident			23441 Golden Springs Dr # 352	Diamond bar	CA	91765
Resident			980 Clover Ln	Corona	CA	92880
Resident			6975 Oak Vista Ln	Oak hills	CA	92344
Resident			PO Box 2679	Corona	CA	92878
Resident			561 W Rincon St	Corona	CA	92880
Resident			9376 Gum Tree Dr	Corona	CA	92883
Resident			7641 E Corto Rd	Anaheim	CA	92808
Resident			508 Bateman Cir	Corona	CA	92880
Resident			549 Bateman Cir	Corona	CA	92880
Resident			569 Bateman Cir	Corona	CA	92880
Resident			1172 Newfield Cir	Corona	CA	92880
Resident			1162 Newfield Cir	Corona	CA	92880
Resident			1145 Newfield Cir	Corona	CA	92880
Resident			1164 Nimrod Cir	Corona	CA	92880
Resident			1190 Nimrod Cir	Corona	CA	92880
Resident			1177 Nimrod Cir	Corona	CA	92880
Resident			1190 Auburndale St	Corona	CA	92880
Resident			1308 River Rd	Corona	CA	92880
Resident			11122 Bermuda St	Cerritos	CA	90703
Resident			1326 River Rd	Corona	CA	92880
Resident			1336 River Rd	Corona	CA	92880
Resident			1344 River Rd	Corona	CA	92880
Resident			1354 River Rd	Corona	CA	92880
Resident			1362 River Rd	Corona	CA	92880
Resident			1372 River Rd	Corona	CA	92880
Resident			1380 River Rd	Corona	CA	92880
Resident			13980 Riverglen Dr	Eastvale	CA	92880
Resident			1398 River Rd	Corona	CA	92880
Resident			1167 Neatherly Cir	Corona	CA	92880
Resident			1159 Neatherly Cir	Corona	CA	92880
Resident			1151 Neatherly Cir	Corona	CA	92880
Resident			7385 Excelsior Dr	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1169 Springbrook St	Corona	CA	92880
Resident			1161 Springbrook St	Corona	CA	92880
Resident			1152 Neatherly Cir	Corona	CA	92880
Resident			1160 Neatherly Cir	Corona	CA	92880
Resident			3101 S Bristol St, Apt 231	Santa Ana	CA	92704
Resident			1825 3rd St	Riverside	CA	92507
Resident			PO Box 12008	Riverside	CA	92502
Resident			PO Box 12008	Riverside	CA	92502
Resident			PO Box 12008	Riverside	CA	92502
Resident			240 N Joy St	Corona	CA	92879
Resident			603 Locust St	Corona	CA	92879
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			1339 Shadowglen Way	Corona	CA	92882
Resident			1220 E Ball Rd	Anaheim	CA	92805
Resident			PO Box 31	Anaheim	CA	92815
Resident			1220 E Ball Rd	Anaheim	CA	92805
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			4080 Lemon St	Riverside	CA	92501
Resident			2107 Santa Anita Rd	Norco	CA	92860
Resident			PO Box 247	Corona	CA	92878
Resident			23 Spicewood	Aliso Viejo	CA	92656
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			301 Blaine St	Corona	CA	92879
Resident			301 Blaine St	Corona	CA	92879
Resident			301 Blaine St	Corona	CA	92879
Resident			301 Blaine St	Corona	CA	92879
Resident			301 Blaine St	Corona	CA	92879
Resident			19048 E Hollyvale St	Glendora	CA	91740
Resident			369 Blaine St	Corona	CA	92879
Resident			7555 W Santa Maria Vis	Prescott	AZ	86305
Resident			620 Jillian Ashley Way	Corona	CA	92881
Resident			390 E Harrison St	Corona	CA	92879
Resident			930 Cedar St	Corona	CA	92879
Resident			403 Blaine St	Corona	CA	92879
Resident			1260 Mountain Ave	Norco	CA	92860
Resident			211 W Rincon St Ste 108	Corona	CA	92880
Resident			1660 Tamarron Dr	Corona	CA	92883
Resident			211 W Rincon St Ste 108	Corona	CA	92880
Resident			211 W Rincon St Ste 108	Corona	CA	92880
Resident			628 Lancer Ln	Corona	CA	92879

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			628 Lancer Ln	Corona	CA	92879
Resident			628 Lancer Ln	Corona	CA	92879
Resident			301 Blaine St	Corona	CA	92879
Resident			646 Ford St	Corona	CA	92879
Resident			2640 Macadamia Ct	Chino Hills	CA	91709
Resident			646 Ford St	Corona	CA	92879
Resident			646 Ford St	Corona	CA	92879
Resident			520 S Sepulveda Blvd, Ste 204	Los Angeles	CA	90049
Resident			265 N Joy St	Corona	CA	92879
Resident			580 E Harrison St	Corona	CA	92879
Resident			29506 Spotted Bull Ln	San Juan Capo	CA	92675
Resident			211 W Rincon St, Ste 108	Corona	CA	92880
Resident			302 N Sheridan St	Corona	CA	92880
Resident			400 S Vicentia Ave	Corona	CA	92882
Resident			350 Rincon St	Corona	CA	92880
Resident			18701 Valley Dr	Villa park	CA	92861
Resident			PO Box 173382	Denver	CO	80217
Resident			211 W Rincon St, Ste 108	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			556 Malloy Ct	Corona	CA	92880
Resident			223 E Thousand Oaks Blvd, Ste 202	Thousand oaks	CA	91360
Resident			482 Rio Ct	Corona	CA	92880
Resident			472 Rio Ct	Corona	CA	92880
Resident			464 Rio Ct	Corona	CA	92880
Resident			465 Klamath St	Corona	CA	92880
Resident			477 Klamath St	Corona	CA	92880
Resident			483 Klamath St	Corona	CA	92880
Resident			484 Klamath St	Corona	CA	92880
Resident			478 Klamath St	Corona	CA	92880
Resident			466 Klamath St	Corona	CA	92880
Resident			829 Piru Ct	Corona	CA	92880
Resident			817 Piru Ct	Corona	CA	92880
Resident			805 Piru Ct	Corona	CA	92880
Resident			804 Pyramid Ct	Corona	CA	92880
Resident			814 Pyramid Ct	Corona	CA	92880
Resident			824 Pyramid Ct	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			2401 S Broadway	Los Angeles	CA	90007
Resident			1995 Market St	Riverside	CA	92501
Resident			155 White River Ln	Corona	CA	92881

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			PO Box 940	Corona	CA	92878
Resident			1535 Dolphin Ter	Corona Del Mar	CA	92625
Resident			1535 Dolphin Ter	Corona Del Mar	CA	92625
Resident			PO Box 940	Corona	CA	92878
Resident			852 Manhattan Beach Blvd	Manhattan Beach	CA	90266
Resident			1024 Belleville Ct	Claremont	CA	91711
Resident			1995 Market St	Riverside	CA	92501
Resident			26 Corporate Park	Irvine	CA	92606
Resident			1111 Blossom Hill Dr	Corona	CA	92880
Resident			PO Box 940	Corona	CA	92878
Resident			1171 Blossom Hill Dr	Corona	CA	92880
Resident			1179 Blossom Hill Dr	Corona	CA	92880
Resident			1183 Blossom Hill Dr	Corona	CA	92880
Resident			1205 Blossom Hill Dr	Corona	CA	92880
Resident			1217 Blossom Hill Dr	Corona	CA	92880
Resident			1229 Blossom Hill Dr	Corona	CA	92880
Resident			1241 Blossom Hill Dr	Corona	CA	92880
Resident			1253 Blossom Hill Dr	Corona	CA	92880
Resident			1265 Blossom Hill Dr	Corona	CA	92880
Resident			1276 River Rd	Corona	CA	92880
Resident			1254 River Rd	Corona	CA	92880
Resident			1242 River Rd	Corona	CA	92880
Resident			1230 River Rd	Corona	CA	92880
Resident			1218 River Rd	Corona	CA	92880
Resident			1206 River Rd	Corona	CA	92880
Resident			1186 River Rd	Corona	CA	92880
Resident			1176 River Rd	Corona	CA	92880
Resident			5072 Andrew Dr	La Palma	CA	90623
Resident			1166 Norcrest St	Corona	CA	92880
Resident			1587 Greenpoint Dr	Corona	CA	92880
Resident			1575 Greenpoint Dr	Corona	CA	92880
Resident			1563 Greenpoint Dr	Corona	CA	92880
Resident			1551 Greenpoint Dr	Corona	CA	92880
Resident			1539 Greenpoint Dr	Corona	CA	92880
Resident			1527 Greenpoint Dr	Corona	CA	92880
Resident			1515 Greenpoint Dr	Corona	CA	92880
Resident			1503 Greenpoint Dr	Corona	CA	92880
Resident			1504 River Rd	Corona	CA	92880
Resident			1516 River Rd	Corona	CA	92880
Resident			1528 River Rd	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1540 River Rd	Corona	CA	92880
Resident			1552 River Rd	Corona	CA	92880
Resident			1564 River Rd	Corona	CA	92880
Resident			1576 River Rd	Corona	CA	92880
Resident			1588 River Rd	Corona	CA	92880
Resident			1596 River Rd	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			PO Box 940	Corona	CA	92878
Resident			5423 W Lucky Way	Santa Ana	CA	92704
Resident			24671 Las Patranas	Yorba Linda	CA	92887
Resident			2145 W Grayson Ave	Anaheim	CA	92801
Resident			15500 Tustin Village Way, Apt 34	Tustin	CA	92780
Resident			PO Box 10603	Santa Ana	CA	92711
Resident			26222 Escala Dr	Mission Viejo	CA	92691
Resident			26222 Escala Dr	Mission Viejo	CA	92691
Resident			26222 Escala Dr	Mission Viejo	CA	92691
Resident			14872 Braeburn Rd	Tustin	CA	92780
Resident			14872 Braeburn Rd	Tustin	CA	92780
Resident			PO Box 17636	Irvine	CA	92623
Resident			1820 Woodcrest Ave	La Habra	CA	90631
Resident			11634 Dartmouth Dr	Norwalk	CA	90650
Resident			18873 Dry Creek Rd	Yorba Linda	CA	92886
Resident			6040 Jodie Ln	Riverside	CA	92509
Resident			6040 Jodie Ln	Riverside	CA	92509
Resident			6040 Jodie Ln	Riverside	CA	92509
Resident			PO Box 78453	Corona	CA	92877
Resident			472 Penrose Dr	Corona	CA	92880
Resident			896 N Cota St	Corona	CA	92880
Resident			13809 Roper Ave	Norwalk	CA	90650
Resident			71 Freeland	Irvine	CA	92602
Resident			1233 W Connecticut Ave	Anaheim	CA	92801
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1055 El Camino Dr, Ste D	Costa Mesa	CA	92626
Resident			18100 Von Karman Ave, Ste 500	Irvine	CA	92612
Resident			18100 Von Karman Ave, Ste 500	Irvine	CA	92612
Resident			18100 Von Karman Ave, Ste 500	Irvine	CA	92612
Resident			1012 Everton Dr	Corona	CA	92880
Resident			1016 Everton Dr	Corona	CA	92880
Resident			455 N Center St	Orange	CA	92866
Resident			1024 Everton Dr	Corona	CA	92880
Resident			1028 Everton Dr	Corona	CA	92880
Resident			1032 Everton Dr	Corona	CA	92880
Resident			1031 Everton Dr	Corona	CA	92880
Resident			952 Blackburn Dr	Corona	CA	92880
Resident			960 Blackburn Dr	Corona	CA	92880
Resident			968 Blackburn Dr	Corona	CA	92880
Resident			976 Blackburn Dr	Corona	CA	92880
Resident			18241 Evergreen Cir	Villa Park	CA	92861
Resident			1095 S Sunstream Ln	Anaheim	CA	92808
Resident			7315 Maddox Ct	Corona	CA	92880
Resident			9423 Linden St	Bellflower	CA	90706
Resident			1029 Queenspark Rd	Corona	CA	92880
Resident			1025 Queenspark Rd	Corona	CA	92880
Resident			23707 Batey Ave	Haber city	CA	90710
Resident			991 Blackburn Dr	Corona	CA	92880
Resident			981 Blackburn Dr	Corona	CA	92880
Resident			1114 W Ontario Ave	Corona	CA	92882
Resident			1114 W Ontario Ave	Corona	CA	92882
Resident			1114 W Ontario Ave	Corona	CA	92882
Resident			1021 Normandy Ter	Corona	CA	92880
Resident			1027 Normandy Ter	Corona	CA	92880
Resident			9409 Lapis Ct	Corona	CA	92883
Resident			1026 Silent Cir	Corona	CA	92880
Resident			1036 Normandy Ter	Corona	CA	92880
Resident			1028 Normandy Ter	Corona	CA	92880
Resident			1023 Serene Dr	Corona	CA	92880
Resident			1029 Serene Dr	Corona	CA	92880
Resident			1033 Serene Dr	Corona	CA	92880
Resident			1030 Serene Dr	Corona	CA	92880
Resident			1026 Serene Dr	Corona	CA	92880
Resident			1022 Serene Dr	Corona	CA	92880
Resident			1018 Serene Dr	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1012 Serene Dr	Corona	CA	92880
Resident			1004 Serene Dr	Corona	CA	92880
Resident			1043 Tranquil Ln	Corona	CA	92880
Resident			1031 Tranquil Ln	Corona	CA	92880
Resident			1025 Tranquil Ln	Corona	CA	92880
Resident			1015 Tranquil Ln	Corona	CA	92880
Resident			1005 Tranquil Ln	Corona	CA	92880
Resident			7229 Bel Air St	Corona	CA	92881
Resident			1058 Serene Dr	Corona	CA	92880
Resident			1082 Serene Dr	Corona	CA	92880
Resident			13694 Beaconsfield Ln	Corona	CA	92880
Resident			1042 Hushabye Ln	Corona	CA	92880
Resident			1034 Hushabye Ln	Corona	CA	92880
Resident			1035 Hushabye Ln	Corona	CA	92880
Resident			1043 Hushabye Ln	Corona	CA	92880
Resident			1048 Lullaby Ln	Corona	CA	92880
Resident			1040 Lullaby Ln	Corona	CA	92880
Resident			1041 Lullaby Ln	Corona	CA	92880
Resident			1049 Lullaby Ln	Corona	CA	92880
Resident			1036 Tranquil Ln	Corona	CA	92880
Resident			1059 Serene Dr	Corona	CA	92880
Resident			1071 Serene Dr	Corona	CA	92880
Resident			1083 Serene Dr	Corona	CA	92880
Resident			2313 W Manly Ave	Santa Ana	CA	92704
Resident			1105 Serene Dr	Corona	CA	92880
Resident			1113 Serene Dr	Corona	CA	92880
Resident			1119 Serene Dr	Corona	CA	92880
Resident			1127 Serene Dr	Corona	CA	92880
Resident			1135 Serene Dr	Corona	CA	92880
Resident			1143 Serene Dr	Corona	CA	92880
Resident			1151 Serene Dr	Corona	CA	92880
Resident			1159 Serene Dr	Corona	CA	92880
Resident			27372 Aliso Creek Rd	Aliso Viejo	CA	92656
Resident			1039 Peaceful Dr	Corona	CA	92880
Resident			1002 Peaceful Dr	Corona	CA	92880
Resident			1010 Peaceful Dr	Corona	CA	92880
Resident			1108 Serene Dr	Corona	CA	92880
Resident			1116 Serene Dr	Corona	CA	92880
Resident			1124 Serene Dr	Corona	CA	92880
Resident			1132 Serene Dr	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1140 Serene Dr	Corona	CA	92880
Resident			1148 Serene Dr	Corona	CA	92880
Resident			1156 Serene Dr	Corona	CA	92880
Resident			1164 Serene Dr	Corona	CA	92880
Resident			1172 Serene Dr	Corona	CA	92880
Resident			1180 Serene Dr	Corona	CA	92880
Resident			1026 Peaceful Dr	Corona	CA	92880
Resident			1038 Peaceful Dr	Corona	CA	92880
Resident			21800 Burbank Blvd, Ste 330	Woodland Hills	CA	91367
Resident			2870 Clark Ave	Norco	CA	92860
Resident			21800 Burbank Blvd, Ste 330	Woodland Hills	CA	91367
Resident			300 S Buena Vista Ave	Corona	CA	92882
Resident			1331 River Rd	Corona	CA	92880
Resident			1995 Market St	Riverside	CA	92501
Resident			PO Box 320099	Alexandria	VA	22320
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			16598 Village Meadow Dr	Riverside	CA	92503
Resident			3282 Vandermolen Dr	Norco	CA	92860
Resident			400 S Vicentia Ave	Corona	CA	92882
Resident			4618 Pennyroyal Dr	Corona	CA	92880
Resident			PO Box 940	Corona	CA	92878
Resident			3064 Dales Dr	Norco	CA	92860
Resident			1064 E 3rd St	Corona	CA	92879
Resident			1029 Quarry St	Corona	CA	92879
Resident			PO Box 78957	Corona	CA	92877
Resident			3064 Dales Dr	Norco	CA	92860
Resident			15331 Saverne Cir	Irvine	CA	92604
Resident			1105 Quarry St	Corona	CA	92879
Resident			919 Ridgewood Dr	Corona	CA	92881
Resident			1087 Quarry St	Corona	CA	92879
Resident			PO Box 940	Corona	CA	92878
Resident			250 Cross Rail Ln	Norco	CA	92860
Resident			1071 Quarry St	Corona	CA	92879
Resident			1067 Quarry St	Corona	CA	92879
Resident			PO Box 78000	Corona	CA	92877
Resident			1057 Quarry St	Corona	CA	92879
Resident			1055 Quarry St	Corona	CA	92879
Resident			1051 Quarry St	Corona	CA	92879
Resident			1043 Quarry St	Corona	CA	92879
Resident			1043 Quarry St	Corona	CA	92879

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1039 Quarry St	Corona	CA	92879
Resident			1033 Quarry St	Corona	CA	92879
Resident			1025 Quarry St	Corona	CA	92879
Resident			1023 Quarry St	Corona	CA	92879
Resident			1356 Calbourne Dr	Diamond Bar	CA	91789
Resident			23045 Canyon Hills Dr	Corona	CA	92883
Resident			1056 E 3rd St	Corona	CA	92879
Resident			7768 Sterling Ave	San Bernardino	CA	92410
Resident			1046 E 3rd St	Corona	CA	92879
Resident			1038 E 3rd St	Corona	CA	92879
Resident			1034 E 3rd St	Corona	CA	92879
Resident			1030 E 3rd St	Corona	CA	92879
Resident			1028 E 3rd St	Corona	CA	92879
Resident			1024 E 3rd St	Corona	CA	92879
Resident			1020 E 3rd St	Corona	CA	92879
Resident			1002 E 3rd St, Apt B	Corona	CA	92879
Resident			1005 Quarry St	Corona	CA	92879
Resident			1014 E 3rd St	Corona	CA	92879
Resident			1010 E 3rd St	Corona	CA	92879
Resident			1006 E 3rd St	Corona	CA	92879
Resident			325 E Grand Blvd	Corona	CA	92879
Resident			820 Aspen St	Corona	CA	92879
Resident			1440 Arizona Pl	Lake Havasu City	AZ	86406
Resident			1440 Arizona Pl	Lake Havasu City	AZ	86406
Resident			313 E Grand Blvd	Corona	CA	92879
Resident			802 E 3rd St	Corona	CA	92879
Resident			806 E 3rd St	Corona	CA	92879
Resident			810&812 E 3rd St	Corona	CA	92879
Resident			902 E 3rd St	Corona	CA	92879
Resident			906 E 3rd St	Corona	CA	92879
Resident			1191 Magnolia Ave # D-292	Corona	CA	92879
Resident			916 E 3rd St	Corona	CA	92879
Resident			19740 Katy Way	Corona	CA	92881
Resident			924 E 3rd St	Corona	CA	92879
Resident			923 Quarry St	Corona	CA	92879
Resident			3348 July Dr	Riverside	CA	92503
Resident			12586 Bannock Ct	Apple Valley	CA	92308
Resident			911 Quarry St	Corona	CA	92879
Resident			907 Quarry St	Corona	CA	92879
Resident			814 Quarry St	Corona	CA	92879

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			901 Quarry St	Corona	CA	92879
Resident			805 Quarry St	Corona	CA	92879
Resident			805 Quarry St	Corona	CA	92879
Resident			16722 Have Ave	Irvine	CA	92606
Resident			385 E Grand Blvd	Corona	CA	92879
Resident			7955 Pearl St	Alta Loma	CA	91701
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St	Riverside	CA	92501
Resident			2185 Adams St	Riverside	CA	92504
Resident			4080 Lemon St Fl 3rd	Riverside	CA	92501
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			4080 Lemon St	Riverside	CA	92501
Resident			5291 E Rural Ridge Cir	Anaheim	CA	92807
Resident			402 E Grand Blvd	Corona	CA	92879
Resident			520 E 3rd St	Corona	CA	92879
Resident			13551 Magnolia Ave	Corona	CA	92879
Resident			516 E 3rd St	Corona	CA	92879
Resident			528 E 3rd St	Corona	CA	92879
Resident			6270 Chadbourne Ave	Riverside	CA	92505
Resident			25770 Onate Dr	Moreno Valley	CA	92557
Resident			318 E Grand Blvd	Corona	CA	92879
Resident			322 E Grand Blvd	Corona	CA	92879
Resident			326 E Grand Blvd	Corona	CA	92879
Resident			6538 San Miguel St	Paramount	CA	90723
Resident			3510 Andover St	Corona	CA	92879
Resident			1741 Boyd Ave	Corona	CA	92881
Resident			1501 Loganrita Ave	Arcadia	CA	91006
Resident			4080 Lemon St	Riverside	CA	92501
Resident			PO Box 940	Corona	CA	92878
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St Fl 3RD	Riverside	CA	92501
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St	Riverside	CA	92501
Resident			4080 Lemon St Fl 3RD	Riverside	CA	92501
Resident			1244 River View Dr	Cody	WY	82414
Resident			610 Railroad St	Corona	CA	92882
Resident			7320 E Hummingbird Cir	Anaheim	CA	92808
Resident			181 N Cota St	Corona	CA	92882

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			20 Canyon Ter	Irvine	CA	92603
Resident			718 Railroad St	Corona	CA	92882
Resident			PO Box 431	Corona	CA	92878
Resident			710 Railroad St	Corona	CA	92882
Resident			706 Railroad St	Corona	CA	92882
Resident			167 N Vicentia Ave	Corona	CA	92882
Resident			163 N Vicentia Ave	Corona	CA	92882
Resident			159 N Vicentia Ave	Corona	CA	92882
Resident			178 N Cota St	Corona	CA	92882
Resident			182 N Cota St	Corona	CA	92882
Resident			638 Railroad St	Corona	CA	92882
Resident			190 N Cota St	Corona	CA	92882
Resident			PO Box 800	Rosemead	CA	91770
Resident			PO Box 800	Rosemead	CA	91770
Resident			2891 2nd St	Norco	CA	92860
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			1230 Quarry St	Corona	CA	92879
Resident			12020 Eastgate Blvd	Mount Juliet	TN	37122
Resident			1245 Webb Cir	Corona	CA	92879
Resident			1270 Webb Cir	Corona	CA	92879
Resident			24576 Ashland Dr	Laguna hills	CA	92653
Resident			PO Box 18421	Anaheim	CA	92817
Resident			2518 N Santiago Blvd	Orange	CA	92867
Resident			2518 N Santiago Blvd	Orange	CA	92867
Resident			PO Box 985	Whittier	CA	90608
Resident			1451 E 6th St	Corona	CA	92879
Resident			14926 La Palma Dr	Chino	CA	91710
Resident			2407 Francisco Dr	Newport Beach	CA	92660
Resident			19072 Callaway Cir	Huntington Beach	CA	92648
Resident			3800 Orange St, Ste 250	Riverside	CA	92501
Resident			PO Box 1180	Riverside	CA	92502
Resident			11 Old Ranch Rd	Laguna Niguel	CA	92677
Resident			11 Old Ranch Rd	Laguna Niguel	CA	92677
Resident			11 Old Ranch Rd	Laguna Niguel	CA	92677
Resident			11 Old Ranch Rd	Laguna Niguel	CA	92677
Resident			310 N Indian Hill Blvd # 603	Claremont	CA	91711
Resident			831 Johnny Cash Dr	Corona	CA	92881
Resident			5 Whatney	Irvine	CA	92618
Resident			1365 E 6th St	Corona	CA	92879
Resident			3460 Winchester Way	Rowland Heights	CA	91748

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			PO Box 940	Corona	CA	92878
Resident			PO Box 940	Corona	CA	92878
Resident			PO Box 940	Corona	CA	92878
Resident			12240 Woodruff Ave	Downey	CA	90241
Resident			Petes Road Service Inc	Fullerton	CA	92831
Resident			1320 E 6th St # 100	Corona	CA	92879
Resident			2867 W Polk Ave	Anaheim	CA	92801
Resident			1995 Market St	Riverside	CA	92501
Resident			1302 E 6th St	Corona	CA	92879
Resident			2040 Main St, Ste 175	Irvine	CA	92614
Resident			1275 Quarry St	Corona	CA	92879
Resident			1201 E 6th St	Corona	CA	92879
Resident			1995 Market St	Riverside	CA	92501
Resident			19141 Oriente Dr	Yorba Linda	CA	92886
Resident			PO Box 940	Corona	CA	92878
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			3151 Airway Ave, Ste H3	Costa Mesa	CA	92626
Resident			1995 Market St	Riverside	CA	92501
Resident			4285 N Golden State Blvd	Fresno	CA	93722
Resident			4285 N Golden State Blvd	Fresno	CA	93722
Resident			2020 E Orangethorpe Ave	Fullerton	CA	92831
Resident			2020 E Orangethorpe Ave	Fullerton	CA	92831
Resident			2020 E Orangethorpe Ave	Fullerton	CA	92831
Resident			PO Box 182571	Columbus	OH	43218
Resident			PO Box 592809	San Antonio	TX	78259
Resident			301 S Tippecanoe Ave	San Bernardino	CA	92408
Resident			2518 N Santiago Blvd	Orange	CA	92867
Resident			2518 N Santiago Blvd	Orange	CA	92867
Resident			PO Box 1000	Mooresville	NC	28115
Resident			2518 N Santiago Blvd	Orange	CA	92867
Resident			9330 Balboa Ave	San Diego	CA	92123
Resident			PO Box 1839	Corona	CA	92878
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			4801 W Jefferson Blvd	Los Angeles	CA	90016
Resident			1296 Magnolia Ave	Corona	CA	92879
Resident			1296 Magnolia Ave	Corona	CA	92879
Resident			PO Box 940	Corona	CA	92878
Resident			PO Box 940	Corona	CA	92878
Resident			PO Box 940	Corona	CA	92878
Resident			282 S Anita Dr	Orange	CA	92868
Resident			27216 Prado Del Sol	Carmel	CA	93923
Resident			1128 Sherborn St	Corona	CA	92879
Resident			1995 Market St	Riverside	CA	92501
Resident			1746 Bellington Ln	Fallbrook	CA	92028
Resident			PO Box 2229	Corona	CA	92878
Resident			PO Box 2229	Corona	CA	92878
Resident			1995 Market St	Riverside	CA	92501
Resident			PO Box 2229	Corona	CA	92878
Resident			PO Box 2229	Corona	CA	92878
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			PO Box 847	Carlsbad	CA	92018
Resident			100 Wilshire Blvd # 8th	Santa Monica	CA	90401
Resident			125 E Commercial St, Ste B	Anaheim	CA	92801
Resident			10811 Morada	Orange	CA	92869
Resident			359 W Orange Heights Ln	Corona	CA	92882
Resident			359 W Orange Heights Ln	Corona	CA	92882
Resident			2244 Walnut Grove Ave	Rosemead	CA	91770
Resident			2244 Walnut Grove Ave	Rosemead	CA	91770
Resident			1320 E 6th St # 100	Corona	CA	92879
Resident			PO Box 2229	Corona	CA	92878
Resident			1000 W Rincon St	Corona	CA	92880
Resident			PO Box 1450	Chicago	IL	60690
Resident			1623 Leeson Ln	Corona	CA	92879
Resident			1623 Leeson Ln	Corona	CA	92879
Resident			7221 Old Temescal Rd	Corona	CA	92881
Resident			7221 Old Temescal Rd	Corona	CA	92881
Resident			9 Castle Pines Dr	Castle rock	CO	80104
Resident			9 Castle Pines Dr	Castle rock	CO	80104
Resident			1995 Market St	Riverside	CA	92501
Resident			902 S 2nd St	Oskaloosa	IA	52577

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			1995 Market St	Riverside	CA	92501
Resident			65 Enterprise #150	Aliso Viejo	CA	92656
Resident			191 S Starlight Dr	Anaheim	CA	92807
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			740 Carnegie Dr	San Bernardino	CA	92408
Resident			1428 E 6th St	Corona	CA	92879
Resident			15500 Bubbling Wells Rd, Spc 126	Desert Hot Springs	CA	92240
Resident			1410 E 6th St Trlr 32	Corona	CA	92879
Resident			Santa Ana River Water Co	Mira loma	CA	91752
Resident			8402 Katella Ave	Stanton	CA	90680
Resident			1414 Harbour Way S	Richmond	CA	94804
Resident			17667 Gleason St	Riverside	CA	92508
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			303 E B St	Ontario	CA	91764
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			303 E B St	Ontario	CA	91764
Resident			11870 Pierce St, Ste 250	Riverside	CA	92505
Resident			303 E B St	Ontario	CA	91764
Resident			PO Box 670	Upland	CA	91785
Resident			303 E B St	Ontario	CA	91764
Resident			303 E B St	Ontario	CA	91764
Resident			303 E B St	Ontario	CA	91764
Resident			3161 Michelson Dr, Ste 425	Irvine	CA	92612
Resident			3161 Michelson Dr, Ste 425	Irvine	CA	92612
Resident			303 E B St	Ontario	CA	91764
Resident			14058 Euclid Ave	Chino	CA	91710
Resident			18790 Alicante Circula	Morgan Hill	CA	95037
Resident			125 Principia Ct	Claremont	CA	91711
Resident			3161 Michelson Dr, Ste 425	Irvine	CA	92612
Resident			125 Principia Ct	Claremont	CA	91711
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			3161 Michelson Dr, Ste 425	Irvine	CA	92612
Resident			303 E B St	Ontario	CA	91764

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 8300	Fountain Valley	CA	92728
Resident			4695 Macarthur Ct # 8TH	Newport Beach	CA	92660
Resident			4695 Macarthur Ct # 8TH	Newport Beach	CA	92660
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			PO Box 670	Upland	CA	91785
Resident			2001 Grand Ave	Chino Hills	CA	91709
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			300 N Flower St # 6TH	Santa Ana	CA	92703
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			980 Montecito Dr # 302	Corona	CA	92879
Resident			300 N Flower St # 6th	Santa Ana	CA	92703
Resident			385 N Arrowhead Ave # 3rd	San Bernardino	CA	92415
Resident			385 N Arrowhead Ave # 3rd	San Bernardino	CA	92415
Resident			385 N Arrowhead Ave # 3rd	San Bernardino	CA	92415
Resident			385 N Arrowhead Ave # 3rd	San Bernardino	CA	92415
Resident			14651 Grove Ave	Ontario	CA	91762
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			1156 N Mountain Ave	Upland	CA	91786
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 670	Upland	CA	91785
Resident			PO Box 8300	Fountain Valley	CA	92728
Resident			PO Box 8300	Fountain Valley	CA	92728
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			300 N Flower St # 6th	Santa Ana	CA	92703

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			300 N Flower St # 6th	Santa Ana	CA	92703
Resident			1863 Fairview Dr	Corona	CA	92880
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			US Interior Dept of	Washington	DC	21401
Resident			PO Box 8300	Fountain Valley	CA	92728
Resident			8563 Shinkle Dr	Corona	CA	92880
Resident			8575 Shinkle Dr	Corona	CA	92880
Resident			8589 Shinkle Dr	Corona	CA	92880
Resident			14673 San Remo Dr	Corona	CA	92880
Resident			14661 San Remo Dr	Corona	CA	92880
Resident			14649 San Remo Dr	Corona	CA	92880
Resident			8802 Armadillo Dr	Eastvale	CA	92880
Resident			8814 Armadillo Dr	Eastvale	CA	92880
Resident			8826 Armadillo Dr	Eastvale	CA	92880
Resident			14417 Badger Ln	Eastvale	CA	92880
Resident			14429 Badger Ln	Eastvale	CA	92880
Resident			8800 E Raintree Dr, Ste 300	Scottsdale	AZ	85260
Resident			14453 Badger Ln	Eastvale	CA	92880
Resident			14465 Badger Ln	Eastvale	CA	92880
Resident			14477 Badger Ln	Corona	CA	92880
Resident			14489 Badger Ln	Eastvale	CA	92880
Resident			14501 Badger Ln	Corona	CA	92880
Resident			14513 Badger Ln	Eastvale	CA	92880
Resident			14502 Badger Ln	Eastvale	CA	92880
Resident			14488 Badger Ln	Eastvale	CA	92880
Resident			14476 Badger Ln	Eastvale	CA	92880
Resident			14464 Badger Ln	Eastvale	CA	92880
Resident			14454 Badger Ln	Eastvale	CA	92880
Resident			14430 Badger Ln	Eastvale	CA	92880
Resident			14418 Badger Ln	Eastvale	CA	92880
Resident			8801 Armadillo Dr	Eastvale	CA	92880
Resident			14525 Badger Ln	Eastvale	CA	92880
Resident			14537 Badger Ln	Eastvale	CA	92880
Resident			14549 Badger Ln	Eastvale	CA	92880
Resident			14561 Badger Ln	Eastvale	CA	92880
Resident			14603 Badger Ln	Eastvale	CA	92880
Resident			8781 Bald Eagle Dr	Eastvale	CA	92880
Resident			8769 Bald Eagle Dr	Eastvale	CA	92880
Resident			8757 Bald Eagle Dr	Corona	CA	92880
Resident			14550 Badger Ln	Eastvale	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			14538 Badger Ln	Eastvale	CA	92880
Resident			14526 Badger Ln	Eastvale	CA	92880
Resident			14526 Bison Ct	Eastvale	CA	92880
Resident			14655 Alpaca Ct	Eastvale	CA	92880
Resident			14667 Alpaca Ct	Eastvale	CA	92880
Resident			14679 Alpaca Ct	Eastvale	CA	92880
Resident			14680 Alpaca Ct	Eastvale	CA	92880
Resident			14668 Alpaca Ct	Eastvale	CA	92880
Resident			14656 Alpaca Ct	Eastvale	CA	92880
Resident			14644 Alpaca Ct	Eastvale	CA	92880
Resident			14632 Alpaca Ct	Eastvale	CA	92880
Resident			9301 Remington Ave	Chino	CA	91710
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			34331 Green Lantern St	Dana Point	CA	92629
Resident			14728 Pipeline Ave, Ste B	Chino hills	CA	91709
Resident			6527 Concerto Dr	Eastvale	CA	92880
Resident			6527 Concerto Dr	Eastvale	CA	92880
Resident			14728 Pipeline Ave, Ste B	Chino hills	CA	91709
Resident			14728 Pipeline Ave, Ste B	Chino hills	CA	91709
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			11201 Harrel St	Mira Loma	CA	91752
Resident			PO Box 8050	Bentonville	AR	72712
Resident			PO Box 8050	Bentonville	AR	72712
Resident			11201 Harrel St	Mira Loma	CA	91752
Resident			PO Box 8050	Bentonville	AR	72712
Resident			1758 Fairview Dr	Corona	CA	92880
Resident			1758 Fairview Dr	Corona	CA	92880
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			7500 Hellman Ave	Corona	CA	92880
Resident			7500 Hellman Ave	Corona	CA	92880
Resident			7500 Hellman Ave	Corona	CA	92880
Resident			7560 Hellman Ave	Corona	CA	92880
Resident			7500 Hellman Ave	Corona	CA	92880
Resident			7560 Hellman Ave	Corona	CA	92880
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			1995 Market St	Riverside	CA	92501
Resident			300 N Flower St # 6th	Santa Ana	CA	92703
Resident			300 N Flower St	Santa Ana	CA	92703

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			2131 Walnut Grove Ave # 2nd	Rosemead	CA	91770
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			2131 Walnut Grove Ave # 2nd	Rosemead	CA	91770
Resident			300 N Flower St	Santa Ana	CA	92703
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			PO Box 4048	Santa Ana	CA	92702
Resident			13971 Burrage St	Eastvale	CA	92880
Resident			13981 Burrage St	Corona	CA	92880
Resident			13991 Burrage St	Corona	CA	92880
Resident			11993 Spartan Ln	Fontana	CA	92337
Resident			13988 Burrage St	Corona	CA	92880
Resident			31541 Stoney Creek Dr	Lake Elsinore	CA	92532
Resident			6378 Rolling Meadow St	Corona	CA	92880
Resident			6368 Rolling Meadow St	Eastvale	CA	92880
Resident			6358 Rolling Meadow St	Corona	CA	92880
Resident			13961 Burrage St	Corona	CA	92880
Resident			6217 Crossfire Ct	Corona	CA	92880
Resident			6227 Crossfire Ct	Corona	CA	92880
Resident			6237 Crossfire Ct	Corona	CA	92880
Resident			6256 Winchester Cir	Corona	CA	92880
Resident			6246 Winchester Cir	Eastvale	CA	92880
Resident			6236 Winchester Cir	Corona	CA	92880
Resident			6226 Winchester Cir	Corona	CA	92880
Resident			6216 Winchester Cir	Corona	CA	92880
Resident			6209 Winchester Cir	Corona	CA	92880
Resident			6219 Winchester Cir	Corona	CA	92880
Resident			6229 Winchester Cir	Corona	CA	92880
Resident			6239 Winchester Cir	Corona	CA	92880
Resident			6249 Winchester Cir	Corona	CA	92880
Resident			6259 Winchester Cir	Corona	CA	92880
Resident			13912 Flint Cir	Eastvale	CA	92880
Resident			371 Edgewater Dr	San Marcos	CA	92078
Resident			13932 Flint Cir	Eastvale	CA	92880
Resident			9608 Van Ruiten St	Bellflower	CA	90706
Resident			13935 Flint Cir	Corona	CA	92880
Resident			13925 Flint Cir	Eastvale	CA	92880
Resident			13915 Flint Cir	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			13936 Clear Water Cir	Corona	CA	92880
Resident			508 Everett Ave Apt C	Monterey Park	CA	91755
Resident			13956 Clear Water Cir	Corona	CA	92880
Resident			13959 Clear Water Cir	Corona	CA	92880
Resident			13949 Clear Water Cir	Corona	CA	92880
Resident			13939 Clear Water Cir	Corona	CA	92880
Resident			6348 Rolling Meadow St	Corona	CA	92880
Resident			6338 Rolling Meadow St	Corona	CA	92880
Resident			6328 Rolling Meadow St	Corona	CA	92880
Resident			14927 Avenida Anita	Chino hills	CA	91709
Resident			6601 Coyote Trail Ln	Corona	CA	92880
Resident			7377 Fall Way	Eastvale	CA	92880
Resident			7366 Maddox Ct	Eastvale	CA	92880
Resident			7354 Maddox Ct	Eastvale	CA	92880
Resident			7306 Maddox Ct	Corona	CA	92880
Resident			7303 Maddox Ct	Corona	CA	92880
Resident			7315 Maddox Ct	Eastvale	CA	92880
Resident			7327 Maddox Ct	Corona	CA	92880
Resident			7351 Maddox Ct	Eastvale	CA	92880
Resident			7363 Maddox Ct	Eastvale	CA	92880
Resident			7375 Maddox Ct	Eastvale	CA	92880
Resident			14975 Bridal Trail Cir	Eastvale	CA	92880
Resident			14963 Bridal Trail Cir	Eastvale	CA	92880
Resident			14951 Bridal Trail Cir	Eastvale	CA	92880
Resident			14939 Bridal Trail Cir	Eastvale	CA	92880
Resident			6618 Ruby Giant Ct	Corona	CA	92880
Resident			6608 Ruby Giant Ct	Corona	CA	92880
Resident			14728 Pipeline Ave, Ste B	Chino Hills	CA	91709
Resident			6611 Ruby Giant Ct	Corona	CA	92880
Resident			6621 Ruby Giant Ct	Corona	CA	92880
Resident			6631 Ruby Giant Ct	Corona	CA	92880
Resident			6640 Bright Gem Ct	Eastvale	CA	92880
Resident			6630 Bright Gem Ct	Corona	CA	92880
Resident			6620 Bright Gem Ct	Corona	CA	92880
Resident			6610 Bright Gem Ct	Corona	CA	92880
Resident			6613 Bright Gem Ct	Corona	CA	92880
Resident			6623 Bright Gem Ct	Eastvale	CA	92880
Resident			6633 Bright Gem Ct	Eastvale	CA	92880
Resident			6643 Bright Gem Ct	Eastvale	CA	92880
Resident			6653 Bright Gem Ct	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			6685 Rosebay Ct	Corona	CA	92880
Resident			6675 Rosebay Ct	Eastvale	CA	92880
Resident			6645 Rosebay Ct	Eastvale	CA	92880
Resident			6635 Rosebay Ct	Corona	CA	92880
Resident			6625 Rosebay Ct	Eastvale	CA	92880
Resident			6622 Rosebay Ct	Corona	CA	92880
Resident			6632 Rosebay Ct	Corona	CA	92880
Resident			6642 Rosebay Ct	Corona	CA	92880
Resident			6652 Rosebay Ct	Corona	CA	92880
Resident			6672 Rosebay Ct	Corona	CA	92880
Resident			6682 Rosebay Ct	Corona	CA	92880
Resident			6657 Bull Thistle Ct	Eastvale	CA	92880
Resident			6647 Bull Thistle Ct	Corona	CA	92880
Resident			6637 Bull Thistle Ct	Eastvale	CA	92880
Resident			6627 Bull Thistle Ct	Corona	CA	92880
Resident			6617 Bull Thistle Ct	Corona	CA	92880
Resident			6604 Bull Thistle Ct	Eastvale	CA	92880
Resident			6614 Bull Thistle Ct	Corona	CA	92880
Resident			6624 Bull Thistle Ct	Corona	CA	92880
Resident			6634 Bull Thistle Ct	Eastvale	CA	92880
Resident			6644 Bull Thistle Ct	Corona	CA	92880
Resident			6654 Bull Thistle Ct	Corona	CA	92880
Resident			6745 Ground Ivy Ct	Corona	CA	92880
Resident			6735 Ground Ivy Ct	Corona	CA	92880
Resident			6715 Ground Ivy Ct	Corona	CA	92880
Resident			6702 Ground Ivy Ct	Corona	CA	92880
Resident			6712 Ground Ivy Ct	Corona	CA	92880
Resident			6722 Ground Ivy Ct	Corona	CA	92880
Resident			6732 Ground Ivy Ct	Corona	CA	92880
Resident			6742 Ground Ivy Ct	Corona	CA	92880
Resident			6747 Musk Mallow Ct	Corona	CA	92880
Resident			6737 Musk Mallow Ct	Corona	CA	92880
Resident			6727 Musk Mallow Ct	Corona	CA	92880
Resident			6717 Musk Mallow Ct	Corona	CA	92880
Resident			6687 Musk Mallow Ct	Corona	CA	92880
Resident			6677 Musk Mallow Ct	Corona	CA	92880
Resident			14728 Pipeline Ave, Ste B	Chino Hills	CA	91709
Resident			6684 Musk Mallow Ct	Corona	CA	92880
Resident			6694 Musk Mallow Ct	Corona	CA	92880
Resident			PO Box 782	Alhambra	CA	91802

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			6724 Musk Mallow Ct	Corona	CA	92880
Resident			6734 Musk Mallow Ct	Corona	CA	92880
Resident			6723 White Clover Way	Corona	CA	92880
Resident			26371 Paloma Apt 81	Foothill Ranch	CA	92610
Resident			6693 White Clover Way	Corona	CA	92880
Resident			6683 White Clover Way	Corona	CA	92880
Resident			6673 White Clover Way	Eastvale	CA	92880
Resident			13437 Quail Run Rd	Corona	CA	92880
Resident			6650 White Clover Way	Corona	CA	92880
Resident			6690 White Clover Way	Eastvale	CA	92880
Resident			6700 White Clover Way	Corona	CA	92880
Resident			6710 White Clover Way	Corona	CA	92880
Resident			6711 Silverweed Way	Corona	CA	92880
Resident			6701 Silverweed Way	Corona	CA	92880
Resident			6691 Silverweed Way	Eastvale	CA	92880
Resident			6681 Silverweed Way	Corona	CA	92880
Resident			6651 Silverweed Way	Eastvale	CA	92880
Resident			6648 Silverweed Way	Corona	CA	92880
Resident			6658 Silverweed Way	Corona	CA	92880
Resident			6678 Silverweed Way	Corona	CA	92880
Resident			6688 Silverweed Way	Corona	CA	92880
Resident			6698 Silverweed Way	Eastvale	CA	92880
Resident			6689 Whitewell Rd	Eastvale	CA	92880
Resident			6679 Whitewell Rd	Eastvale	CA	92880
Resident			6659 Whitewell Rd	Corona	CA	92880
Resident			6649 Whitewell Rd	Eastvale	CA	92880
Resident			6636 Whitewell Rd	Eastvale	CA	92880
Resident			6646 Whitewell Rd	Corona	CA	92880
Resident			6656 Whitewell Rd	Eastvale	CA	92880
Resident			84 Statuary	Irvine	CA	92620
Resident			6686 Whitewell Rd	Corona	CA	92880
Resident			14959 Brooktree St	Corona	CA	92880
Resident			14971 Brooktree St	Corona	CA	92880
Resident			14977 Brooktree St	Corona	CA	92880
Resident			14983 Brooksfree	Eastvale	CA	92880
Resident			14989 Brooktree St	Corona	CA	92880
Resident			14995 Brooktree St	Corona	CA	92880
Resident			14996 Franklin Ln	Corona	CA	92880
Resident			1250 Corona Pointe Ct, Ste 600	Corona	CA	92879
Resident			7031 Stockton Dr	Eastvale	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			7043 Stockton Dr	Corona	CA	92880
Resident			6628 Canter Cove Ct	Eastvale	CA	92880
Resident			7067 Stockton Dr	Eastvale	CA	92880
Resident			7079 Stockton Dr	Eastvale	CA	92880
Resident			7091 Stockton Dr	Corona	CA	92880
Resident			7103 Stockton Dr	Eastvale	CA	92880
Resident			7115 Stockton Dr	Corona	CA	92880
Resident			7127 Stockton Dr	Corona	CA	92880
Resident			7139 Stockton Dr	Corona	CA	92880
Resident			7151 Stockton Dr	Corona	CA	92880
Resident			7148 Stockton Dr	Corona	CA	92880
Resident			7136 Stockton Dr	Corona	CA	92880
Resident			7124 Stockton Dr	Corona	CA	92880
Resident			7112 Stockton Dr	Corona	CA	92880
Resident			7100 Stockton Dr	Eastvale	CA	92880
Resident			7088 Stockton Dr	Eastvale	CA	92880
Resident			7163 Stockton Dr	Corona	CA	92880
Resident			14964 Corvalis Ct	Eastvale	CA	92880
Resident			14976 Corvalis Ct	Corona	CA	92880
Resident			14988 Corvalis Ct	Corona	CA	92880
Resident			14991 Corvalis Ct	Corona	CA	92880
Resident			14979 Corvalis Ct	Corona	CA	92880
Resident			7172 Stockton Dr	Eastvale	CA	92880
Resident			6891 Woodrush Way	Corona	CA	92880
Resident			6879 Woodrush Way	Corona	CA	92880
Resident			PO Box 114	Chino Hills	CA	91709
Resident			6855 Woodrush Way	Corona	CA	92880
Resident			6843 Woodrush Way	Eastvale	CA	92880
Resident			6831 Woodrush Way	Corona	CA	92880
Resident			6819 Woodrush Way	Eastvale	CA	92880
Resident			6807 Woodrush Way	Corona	CA	92880
Resident			14964 Edgewood Dr	Corona	CA	92880
Resident			14976 Edgewood Dr	Corona	CA	92880
Resident			14988 Edgewood Dr	Corona	CA	92880
Resident			14983 Oakvale Cir	Corona	CA	92880
Resident			14971 Oakvale Cir	Eastvale	CA	92880
Resident			14959 Oakvale Cir	Corona	CA	92880
Resident			14961 Edgewood Dr	Corona	CA	92880
Resident			14973 Edgewood Dr	Eastvale	CA	92880
Resident			14985 Edgewood Dr	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			14980 Landerwood Dr	Corona	CA	92880
Resident			14968 Landerwood Dr	Corona	CA	92880
Resident			14956 Landerwood Dr	Eastvale	CA	92880
Resident			14951 Murwood Ln	Eastvale	CA	92880
Resident			14963 Murwood Ln	Eastvale	CA	92880
Resident			14975 Murwood Ln	Eastvale	CA	92880
Resident			14987 Murwood Ln	Corona	CA	92880
Resident			14999 Murwood Ln	Eastvale	CA	92880
Resident			1275 W San Bernardino Rd	Covina	CA	91722
Resident			6963 Woodrush Way	Eastvale	CA	92880
Resident			6951 Woodrush Way	Eastvale	CA	92880
Resident			6939 Woodrush Way	Eastvale	CA	92880
Resident			6927 Woodrush Way	Corona	CA	92880
Resident			14954 Murwood Ln	Eastvale	CA	92880
Resident			6960 Woodrush Way	Eastvale	CA	92880
Resident			6948 Woodrush Way	Corona	CA	92880
Resident			6936 Woodrush Way	Eastvale	CA	92880
Resident			2280 Wardlow Cir, Ste 100	Corona	CA	92880
Resident			14965 Landerwood Dr	Eastvale	CA	92880
Resident			6795 Woodrush Way	Corona	CA	92880
Resident			6783 Woodbrush Way	Eastvale	CA	92880
Resident			6771 Woodrush Way	Corona	CA	92880
Resident			6759 Woodrush Way	Eastvale	CA	92880
Resident			6747 Woodrush Way	Corona	CA	92880
Resident			6735 Woodrush Way	Corona	CA	92880
Resident			6723 Woodrush Way	Corona	CA	92880
Resident			14984 Roundwood Dr	Eastvale	CA	92880
Resident			14972 Roundwood Dr	Corona	CA	92880
Resident			14960 Roundwood Dr	Corona	CA	92880
Resident			14962 Oakvale Cir	Corona	CA	92880
Resident			14974 Oakvale Cir	Corona	CA	92880
Resident			14986 Oakvale Cir	Corona	CA	92880
Resident			6780 Woodrush Way	Eastvale	CA	92880
Resident			6768 Woodrush Way	Eastvale	CA	92880
Resident			14981 Roundwood Dr	Corona	CA	92880
Resident			14969 Roundwood Dr	Corona	CA	92880
Resident			6067 Stampede St	Eastvale	CA	92880
Resident			6057 Stampede St	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			6047 Stampede St	Corona	CA	92880
Resident			6037 Stampede St	Corona	CA	92880
Resident			13784 River Downs St	Eastvale	CA	92880
Resident			10628 Clancey Ave	Downey	CA	90241
Resident			13764 River Downs St	Corona	CA	92880
Resident			13754 River Downs St	Corona	CA	92880
Resident			2280 Wardlow Cir, Ste 100	Corona	CA	92880
Resident			13746 Apple Moss Ct	Corona	CA	92880
Resident			13738 Apple Moss Ct	Corona	CA	92880
Resident			13730 Apple Moss Ct	Eastvale	CA	92880
Resident			13722 Apple Moss Ct	Corona	CA	92880
Resident			13714 Apple Moss Ct	Corona	CA	92880
Resident			PO Box 4475	Orange	CA	92863
Resident			13698 Apple Moss Ct	Corona	CA	92880
Resident			PO Box 20313	Fountain valley	CA	92728
Resident			13682 Apple Moss Ct	Corona	CA	92880
Resident			13674 Apple Moss Ct	Corona	CA	92880
Resident			13666 Apple Moss Ct	Corona	CA	92880
Resident			13658 Apple Moss Ct	Corona	CA	92880
Resident			13650 Apple Moss Ct	Corona	CA	92880
Resident			13642 Apple Moss Ct	Corona	CA	92880
Resident			2280 Wardlow Circle, Ste 100	Corona	CA	92880
Resident			825 E 3rd St	San Bernardino	CA	92415
Resident			13669 Apple Moss Ct	Corona	CA	92880
Resident			13770 Apple Moss Ct	Corona	CA	92880
Resident			13762 Apple Moss Ct	Corona	CA	92880
Resident			13754 Apple Moss Ct	Corona	CA	92880
Resident			13768 Hill Grove St	Corona	CA	92880
Resident			13756 Hill Grove St	Corona	CA	92880
Resident			13744 Hill Grove St	Corona	CA	92880
Resident			7862 Sorrel Ln	Corona	CA	92880
Resident			13720 Hill Grove St	Corona	CA	92880
Resident			13708 Hill Grove St	Corona	CA	92880
Resident			13696 Hill Grove St	Corona	CA	92880
Resident			13685 Apple Moss Ct	Corona	CA	92880
Resident			9688 Pauline Dr	Cypress	CA	90630
Resident			13709 Apple Moss Ct	Corona	CA	92880
Resident			13717 Apple Moss Ct	Corona	CA	92880

TABLE 3 (Continued)
MASTER MAILING LIST:
ORGANIZATIONS AND INDIVIDUALS SENT NOTICE OF AVAILABILITY
VIA UNITED STATES POSTAL SERVICE

ORGANIZATION/ INDIVIDUAL	FIRST NAME	LAST NAME	STREET	CITY	STATE	ZIP CODE
Resident			13725 Apple Moss Ct	Corona	CA	92880
Resident			13741 Apple Moss Ct	Corona	CA	92880
Resident			13749 Apple Moss Ct	Corona	CA	92880
Resident			888 E Walnut St	Pasadena	CA	91101
Resident			13765 Apple Moss Ct	Corona	CA	92880

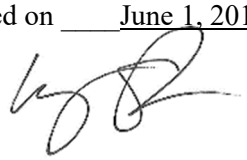
Certificate of Service

I, Logan Sakai, of Environmental Science Associates, certify that we have on this date caused the following:

Publication of the Draft EIR for Southern California Edison's (SCE) Application to the California Public Utilities Commission (CPUC) pursuant to General Order (GO) 131-D to construct and operate the Circle City Substation and Mira Loma-Jefferson 66 kilovolt Subtransmission Line Project (A.15-12-007). Hard copies of the Draft EIR are to be served by overnight delivery service to the Lead Agency (the CPUC), the project Applicant (SCE), and area libraries. A compact disc of the Draft EIR is to be served by United States Postal Service (USPS) mail to listed parties on the CPUC service list; agencies, organizations, and individuals that submitted comments on the Notice of Preparation (NOP); and local agencies in the vicinity of the proposed Project. A postcard with information on where to view or request a copy of the Draft EIR is to be served by USPS to individuals who live within 300 feet of the proposed Project. A comprehensive mailing list is included in Appendix B of the Draft EIR.

I declare under penalty of perjury pursuant to the laws of the State of California that the foregoing is true and correct.

Executed on ____June 1, 2018___in San Francisco, California.



_____

Logan Sakai

Appendix C
(EMF) Field Management Plan

ESA

TABLE OF CONTENTS

I. Executive Summary 5

II. Background Regarding EMF And Public Health Research On EMF 13

III. Application Of the CPUC's "No-Cost And Low-Cost" EMF Policy To This Project 16

IV. Project Description 19

V. Evaluation of "no-cost and low-cost" magnetic field reduction design options 26

VI. Final recommendations for implementing "no-cost and low-cost" magnetic field reduction design options 50

VII. Appendix A: Two-dimentional Model Assumptions and Year 2021 Forecasted Loading Conditions 54

LIST OF TABLES

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options 7

Table 2. Calculated Magnetic Field Levels for Section 1 29

Table 3. Calculated Magnetic Field Levels for Section 2 31

Table 4. Calculated Magnetic Field Levels for Section 3 33

Table 5. Calculated Magnetic Field Levels for Section 4 35

Table 6. Calculated Magnetic Field Levels for Section 5 37

Table 7. Calculated Magnetic Field Levels for Section 6 39

Table 8. Calculated Magnetic Field Levels for Section 7 41

Table 9. Calculated Magnetic Field Levels for Section 8 43

Table 10. Calculated Magnetic Field Levels for Section 9 46

Table 11. Calculated Magnetic Field Levels for Section 10 47

Table 12. Substation Checklist for Examining No-cost and Low-Cost Magnetic Field Reduction Design Options 49

Table 13. Year 2021 Forecasted Loading Conditions for Circle City Substation Project Area Existing Transmission and Subtransmission Lines without Proposed Project 55

Table 14. Year 2021 Forecasted Loading Conditions for Proposed Circle City Substation Project Subtransmission Source Lines, Proposed Mira Loma-Jefferson 66 kV Subtransmission Line, and Adjacent Transmission Lines 56

LIST OF FIGURES

Figure 1. Project Area Map and EMF Evaluation Sections 20
Figure 2. Proposed Substation Layout 25
Figure 3. Typical 66 kV Overhead Subtransmission Line 27
Figure 4. Typical 66 kV Overhead Subtransmission Line 27
Figure 5. Typical 66 kV Underground Subtransmission Line 28
Figure 6. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Source Line Route 1 Overhead Section 1 (Looking West) 30
Figure 7. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Source Line Route 1 Underground Section 2 (Looking West) 32
Figure 8. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Source Line Route 2 Section 3 (Looking Southwest) 34
Figure 9. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Source Line Route 2 Underground Section 4 36
Figure 10. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line at Section 5 (Looking Northeast) 38
Figure 11. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line Section 6 (Looking North) 40
Figure 12. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line Section 7 (Looking North) 42
Figure 13. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line Section 8 (Looking North) 44
Figure 14. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line Section 9 (Looking North) 46
Figure 15. Calculated Magnetic Field Levels for the Proposed 66 kV Subtransmission Line Section 10 (Looking Northeast) 48

List of Terms

CDHS	California Department of Health Services
C/L	center line
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
ELF	Extremely Low Frequency
EMF	electric and magnetic fields
FMP	field management plan
GO	General Order
IARC	International Agency for Research on Cancer
kV	Kilovolt
LWS	light weight steel
mG	milliGauss
MVA	megavolt-ampere
MW	Megawatt
NIEHS	National Institute of Environmental Health Sciences
NRPB	National Radiation Protection Board
PEA	Proponents Environmental Assessment
RAPID	Research and Public Information Dissemination
ROW	right-of-way
SCE	Southern California Edison
T/L	transmission line
TSP	tubular steel pole
WHO	World Health Organization

I. EXECUTIVE SUMMARY

This document is Southern California Edison Company's (SCE) Field Management Plan (FMP) for the proposed Circle City Substation Project (Proposed Project). SCE proposes to construct the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project to maintain system reliability and serve projected electrical demand in portions of unincorporated Riverside County and the cities of Corona and Norco, California. The Proposed Project is planned to be operational by 2021. The Proposed Project would include the following:

- Construction of a new 66/12 kilovolt (kV) substation (Circle City Substation). The proposed Circle City Substation would be an unstaffed, automated, low-profile 56 megavolt-ampere (MVA), substation with a potential capacity of 112 MVA at final build out.

- Construction of four new 66 kV subtransmission source lines, including:

  - Two source lines in a double-circuit configuration, which would be a combination of overhead and underground construction. Each source line would be approximately 1.2 miles in length and would be created by connecting to the existing Chase-Corona-Databank 66 kV Subtransmission Line to form the new Circle City-Corona No. 2 66 kV Subtransmission Line and the new Chase-Circle City-Databank 66 kV Subtransmission Line.

  - Two source lines in a double-circuit configuration, which would be constructed overhead. Each source line would be approximately 3.5 miles in length and would be created by connecting to the existing Mira Loma-Corona-Pedley 66 kV Subtransmission Line to form the Mira Loma-Circle City-Pedley 66 kV and the Circle City-Corona No. 1 66 kV subtransmission lines.

- Construction of a new 66 kV subtransmission line, which would be a combination of both overhead and underground construction. The proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be approximately 10.9 miles in length and would be constructed from SCE's existing Mira Loma Substation to a location adjacent to SCE's existing Corona Substation.

- Upgrade Mira Loma Substation to accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line.

- Construction of approximately six new underground 12 kV distribution getaways exiting the proposed Circle City Substation.

- Relocation of approximately 1.9 miles of an existing overhead 33 kV distribution line to an underground position.

- Installation of telecommunications facilities to connect the Proposed Project to SCE's existing telecommunications system.

SCE provides this FMP in order to inform the public, the California Public Utilities Commission (CPUC), and other interested parties of its evaluation of "no-cost and low-cost" magnetic field reduction design options for this project, and SCE's proposed plan to apply these design options to this project. This FMP has been prepared in accordance with CPUC Decision No. 93-11-013 and Decision No. 06-01-042 relating to extremely low frequency (ELF)[1] electric and magnetic fields (EMF). This FMP also provides background on the current status of scientific research related to possible health effects of EMF, and a description of the CPUC's EMF policy.

The "no-cost and low-cost" magnetic field reduction design options that are incorporated into the design of the Proposed Project are as follows:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
- Utilize subtransmission line construction that reduces the space between conductors compared with other designs
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction
- Utilize underground subtransmission construction for engineering reasons
- Arrange underground cables of proposed subtransmission line for magnetic field reduction
- Place major substation electrical equipment (such as transformers, switchracks, buses and underground duct banks) away from the substation property lines

Table 1 below summarizes "no-cost and low-cost" magnetic field reduction design options that SCE adopted for the Proposed Project.

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction design options for the Proposed Project is consistent with CPUC's EMF policy and with the direction of leading national and international health agencies. Furthermore, the plan complies with SCE's EMF Design Guidelines[2], and with applicable national and state safety standards for new electrical facilities.

---

[1] The extremely low frequency is defined as the frequency range from 3 Hz to 3,000 Hz.

[2] EMF Design Guidelines, August 2006.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Proposed Circle City Substation	Located on Leeson Lane at the intersection of Dudley Way in the City of Corona, CA	3	• Place major substation electrical equipment (such as transformers, switchracks, buses and underground duct banks) away from the substation property lines • Configure the transfer and operating buses with the transfer bus closest to the nearest property line	• No-Cost[5] • No-Cost[6]	• Yes • No	• It is a breaker-and-a-half design.

3 This column shows the major cross streets, existing subtransmission lines, or substation name as reference points.

4 Land usage codes are as follows: 1) schools, licensed day-cares, and hospitals, 2) residential, 3) commercial/industrial, 4) recreational, 5) agricultural, and 6) undeveloped land.

5 This option was included in the preliminary design and continues to be included in the design of the project.

6 *Ibid.*

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 1 Proposed Circle City Source Line Route 1 overhead	Blaine Street, Joy Street, 3rd Street, Quarry Street, El Sobrante Road, 6th Street, and Magnolia Avenue	2,3	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • No-Cost	• Yes • Yes • Yes	
Section 2 Proposed Circle City Source Line Route 1 underground	Blaine Street, Grand Boulevard and 3rd Street	3	• Utilize underground subtransmission construction for engineering reasons • Arrange underground cables of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost	• Yes • Yes	

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 3 66 kV Source sub-transmission line Route 2 overhead	Magnolia Avenue East of El Camino Avenue	3	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • No-Cost	• Yes • Yes • Yes	
Section 4 66 kV Source sub-transmission line Route 2 underground	Magnolia Avenue West of El Camino Avenue	3	• Utilize underground subtransmission construction for engineering reasons • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost	• Yes • Yes	

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 5 Mira Loma-Jefferson 66 kV Sub-transmission Line	500 kV ROW SW of Mira Loma Substation to Hellman Avenue	2, 4	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • No-Cost	• No • Yes • Yes	• Clearance to avoid infractions from 500kv to 66kV. Along this 500kV ROW, SCE Transmission Engineering determined 70 ft. is recommended height for 66kV to avoid GO-95 infraction.
Section 6 Mira Loma-Jefferson 66 kV Sub-transmission Line	Hellman Avenue North of Schleisman Road	2,5	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 7 Mira Loma-Jefferson 66 kV Sub-transmission Line	Hellman Avenue South of Schleisman Road	2,5	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	
Section 8 Mira Loma-Jefferson 66 kV Sub-transmission Line	Hellman Avenue South of Outback Way	2,5	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize subtransmission line construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 9 Mira Loma-Jefferson 66 kV Sub-transmission Line	River Road adjacent to Auburndale Middle School	1,3	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces the space between conductors compared with other designs • Arrange conductors of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	
Section 10 Mira Loma-Jefferson 66 kV Sub-transmission Line	N. Cota Street	3	• Utilize underground subtransmission construction for engineering reasons • Arrange underground cables of proposed subtransmission line for magnetic field reduction	• No-Cost • No-Cost	• Yes • Yes	

II. BACKGROUND REGARDING EMF AND PUBLIC HEALTH RESEARCH ON EMF

There are many sources of power frequency[7] electric and magnetic fields, including internal household and building wiring, electrical appliances, and electric power transmission and distribution lines. There have been numerous scientific studies about the potential health effects of EMF. After many years of research, the scientific community has been unable to determine if exposures to EMF cause health hazards. State and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.[8]

Many of the questions about possible connections between EMF exposures and specific diseases have been successfully resolved due to an aggressive international research program. However, potentially important public health questions remain about whether there is a link between EMF exposures and certain diseases, including childhood leukemia and a variety of adult diseases (e.g., adult cancers and miscarriages). As a result, some health authorities have identified magnetic field exposures as a possible human carcinogen. As summarized in greater detail below, these conclusions are consistent with the following published reports: the National Institute of Environmental Health Sciences ("NIEHS") 1999[9], the National Radiation Protection Board ("NRPB") 2001[10], the International Commission on non-Ionizing Radiation Protection ("ICNIRP") 2001, the California Department of Health Services ("CDHS") 2002[11], the International Agency for Research on Cancer ("IARC") 2002[12] and the World Health Organization ("WHO") 2007[13] .

The federal government conducted EMF research as a part of a $45 million research program managed by the NIEHS. This program, known as the EMF RAPID (Research and Public Information Dissemination), submitted its final report to the U.S. Congress on June 15, 1999. The report concluded that:

- "The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak."[14]

---

7 In U.S., it is 60 Hertz (Hz).

8 CPUC Decision 06-01-042, p. 6, footnote 10.

9 National Institute of Environmental Health Sciences' Report on Health Effects from Exposures to Power-Line frequency Electric and Magnetic Fields, NIH Publication No. 99-4493, June 1999.

10 National Radiological Protection Board, Electromagnetic Fields and the Risk of Cancer, Report of an Advisory Group on Non-ionizing Radiation, Chilton, U.K. 2001.

11 California Department of Health Services, An Evaluation of the Possible Risks from Electric and Magnetic Fields from Power Lines, Internal Wiring, Electrical Occupations, and Appliances, June 2002.

12 World Health Organization / International Agency for Research on Cancer, IARC Monographs on the evaluation of carcinogenic risks to humans (2002), Non-ionizing radiation, Part 1: Static and extremely low-frequency (ELF) electric and magnetic fields, IARCPress, Lyon, France: International Agency for Research on Cancer, Monograph, vol. 80, p. 338, 2002.

13 WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, 2007.

14 National Institute of Environmental Health Sciences, NIEHS Report on Health Effects from Exposures to Power-Frequency Electric and Magnetic Fields, p. ii, NIH Publication No. 99-4493, 1999.

- "The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard."[15]
- "The NIEHS suggests that the level and strength of evidence supporting ELF-EMF exposure as a human health hazard are insufficient to warrant aggressive regulatory actions; thus, we do not recommend actions such as stringent standards on electric appliances and a national program to bury all transmission and distribution lines. Instead, the evidence suggests passive measures such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. NIEHS suggests that the power industry continue its current practice of siting power lines to reduce exposures and continue to explore ways to reduce the creation of magnetic fields around transmission and distribution lines without creating new hazards."[16]

In 2001, Britain's NRPB arrived at a similar conclusion:

> "After a wide-ranging and thorough review of scientific research, an independent Advisory Group to the Board of NRPB has concluded that the power frequency electromagnetic fields that exist in the vast majority of homes are not a cause of cancer in general. However, some epidemiological studies do indicate a possible small risk of childhood leukemia associated with exposures to unusually high levels of power frequency magnetic fields."[17]

In 2002, three scientists for CDHS concluded:

> "To one degree or another, all three of the [CDHS] scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's disease, and miscarriage.
>
> They [CDHS] strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.
>
> They [CDHS] strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
>
> To one degree or another they [CDHS] are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's disease, depression, or symptoms attributed by some to a sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide. For adult leukemia, two of the scientists are 'close to the dividing line

---

15 *Ibid.*, p. iii.

16 *Ibid.*, p. 37 – 38.

17 NRPB, NRPB Advisory Group on Non-ionizing Radiation Power Frequency Electromagnetic Fields and the Risk of Cancer, NRPB Press Release March 2001.

between believing or not believing' and one was 'prone to believe' that EMFs cause some degree of increased risk."[18]

Also in 2002, the World Health Organization's ("WHO") IARC concluded:

> "ELF magnetic fields are possibly carcinogenic to humans"[19], based on consistent statistical associations of high-level residential magnetic fields with a doubling of risk of childhood leukemia...Children who are exposed to residential ELF magnetic fields less than 0.4 microTesla (4.0 milliGauss "mG") have no increased risk for leukemia…. In contrast, "no consistent relationship has been seen in studies of childhood brain tumors or cancers at other sites and residential ELF electric and magnetic fields."[20]

In June of 2007, the WHO issued a report on their multi-year investigation of EMF and the possible health effects. After reviewing scientific data from numerous EMF and human health studies, they concluded:

> "Scientific evidence suggesting that everyday, chronic low-intensity (above 0.3-0.4 μT [3-4 mG]) power-frequency magnetic field exposure poses a health risk is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukaemia."[21]
>
> "In addition, virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status. Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern."[22]
>
> "A number of other diseases have been investigated for possible association with ELF magnetic field exposure. These include cancers in both children and adults, depression, suicide, reproductive dysfunction, developmental disorders, immunological modifications and neurological disease. The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease"[23]
>
> "Furthermore, given both the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukemia, and the limited impact

---

[18] CDHS, An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances, p. 3, 2002.

[19] IARC, Monographs, Part I, Vol. 80, p. 338.

[20] *Ibid*., p. 332 – 334.

[21] WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, p. 11 - 13, 2007.

[22] *Ibid*., p. 12.

[23] *Ibid*., p. 12.

on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus the costs of precautionary measures should be very low."[24]

III. APPLICATION OF THE CPUC'S "NO-COST AND LOW-COST" EMF POLICY TO THIS PROJECT

Recognizing the scientific uncertainty over the connection between EMF exposures and health effects, the CPUC adopted a policy that addresses public concern over EMF with a combination of education, information, and precaution-based approaches. Specifically, Decision 93-11-013 established a precautionary based "no-cost and low-cost" EMF policy for California's regulated electric utilities based on recognition that scientific research had not demonstrated that exposures to EMF cause health hazards and that it was inappropriate to set numeric standards that would limit exposure.

In 2006, the CPUC completed its review and update of its EMF Policy in Decision 06-01-042. This decision reaffirmed the finding that state and federal public health regulatory agencies have not established a direct link between exposure to EMF and human health effects,[25] and the policy direction that (1) use of numeric exposure limits was not appropriate in setting utility design guidelines to address EMF,[26] and (2) existing "no-cost and low-cost" precautionary-based EMF policy should be continued for proposed electrical facilities. The decision also reaffirmed that EMF concerns brought up during Certificate of Public Convenience and Necessity ("CPCN") and Permit to Construct ("PTC") proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the CPUC's "no-cost and low-cost" policies.[27]

The decision directed regulated utilities to hold a workshop to develop standard approaches for EMF Design Guidelines and such a workshop was held on February 21, 2006. Consistent design guidelines have been developed that describe the routine magnetic field reduction measures that regulated California electric utilities consider for new and upgraded T/L and transmission substation projects. SCE filed its revised EMF Design Guidelines with the CPUC on July 26, 2006.

---

[24] *Ibid*., p. 13.

[25] CPUC Decision 06-01-042, Findings of Fact No. 5, mimeo. p. 19 ("As discussed in the rulemaking, a direct link between exposure to EMF and human health effects has yet to be proven despite numerous studies including a study ordered by this Commission and conducted by DHS.").

[26] CPUC Decision 06-01-042, mimeo. p. 17 - 18 ("Furthermore, we do not request that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure, in revised design guidelines or apply mitigation measures to reconfigurations or relocations of less than 2,000 feet, the distance under which exemptions apply under GO 131-D. Non-routine mitigation measures should only be considered under unique circumstances.").

[27] CPUC Decision 06-01-042, Conclusion of Law No. 2, mimeo.p. 21, ("EMF concerns in future CPCN and PTC proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the Commission's low-cost/no-cost policies.").

"No-cost and low-cost" measures to reduce magnetic fields would be implemented for this Project in accordance with SCE's EMF Design Guidelines. In summary, the process of evaluating "no-cost and low-cost" magnetic field reduction measures and prioritizing within and between land usage classes considers the following:

1. SCE's priority in the design of any electrical facility is public and employee safety. Without exception, design and construction of an electric power system must comply with all applicable federal, state, and local regulations, applicable safety codes, and each electric utility's construction standards. Furthermore, transmission and subtransmission lines and substations must be constructed so that they can operate reliably at their design capacity. Their design must be compatible with other facilities in the area and the cost to operate and maintain the facilities must be reasonable.

2. As a supplement to Step 1, SCE follows the CPUC's direction to undertake "no-cost and low-cost" magnetic field reduction measures for new and upgraded electrical facilities. Any proposed "no-cost and low-cost" magnetic field measures, must, however, meet the requirements described in Step 1 above. The CPUC defines "no-cost and low-cost" measures as follows:

   - "No-cost" measures, in aggregate, should:
     - Have already been incorporated into the preliminary engineering design due to SCE design standards that have EMF reduction measures built-in.
     - Incur no additional cost to implement the recommended measures.
   - "Low-cost" measures, in aggregate, should:
     - Cost in the range of 4 percent of the total project cost.
     - Result in magnetic field reductions of "15% or greater at the utility R-O-W [right-of-way]…"[28]

   The CPUC Decision stated,

   > "We direct the utilities to use 4 percent as a benchmark in developing their EMF mitigation guidelines. We will not establish 4 percent as an absolute cap at this time because we do not want to arbitrarily eliminate a potential measure that might be available but costs more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent."[29]

3. The CPUC provided further policy direction in Decision 06-01-042, stating that, "[a]lthough equal mitigation for an entire class is a desirable goal, we will not limit the spending of EMF mitigation to zero on the basis that not all class members can benefit."[30] While Decision 06-01-042 directs the utilities to favor schools, day-care facilities and hospitals over residential areas when applying

---

[28] CPUC Decision 06-01-042, p. 10.
[29] CPUC Decision 93-11-013, § 3.3.2, p.10.
[30] CPUC Decision 06-01-042, p. 10.

> "low-cost" magnetic field reduction measures, prioritization within a class can be difficult on a project case-by-case basis because schools, day-care facilities, and hospitals are often integrated into residential areas, and many licensed day-care facilities are housed in private homes, and can be easily moved from one location to another. Therefore, it may be practical for public schools, licensed day-care centers, hospitals, and residential land uses to be grouped together to receive highest prioritization for "low-cost" magnetic field reduction measures. Commercial and industrial areas may be grouped as a second priority group, followed by recreational and agricultural areas as the third group. "Low-cost" magnetic field reduction measures will not be considered for undeveloped land, such as open space, state and national parks, and Bureau of Land Management and U.S. Forest Service lands. When spending for "low-cost" measures would otherwise disallow equitable magnetic field reduction for all areas within a single land-use class, prioritization can be achieved by considering location and/or density of permanently occupied structures on lands adjacent to the projects, as appropriate.

This FMP contains descriptions of various magnetic field models and the calculated results of magnetic field levels based on those models. These calculated results are provided only for purposes of identifying the relative differences in magnetic field levels among various transmission or subtransmission line design alternatives under a specific set of modeling assumptions and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the Project is constructed. This is because magnetic field levels depend upon a variety of variables, including load growth, customer electricity usage, and other factors beyond SCE's control. The CPUC affirmed this in D. 06-01-042 stating:

> "Our [CPUC] review of the modeling methodology provided in the utility [EMF] design guidelines indicates that it accomplishes its purpose, which is to measure the relative differences between alternative mitigation measures. Thus, the modeling indicates relative differences in magnetic field reductions between different T/L construction methods, but does not measure actual environmental magnetic fields."[31]

[31] CPUC Decision 06-01-042, p. 11.

IV. PROJECT DESCRIPTION

Southern California Edison Company (SCE) proposes to construct the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project to maintain system reliability and serve projected electrical demand in portions of unincorporated Riverside County and the cities of Corona and Norco, California. The Proposed Project Area and 66 kV subtransmission line routes are shown in Figure 1. The Proposed Project is planned to be operational by 2021. For the purpose of this FMP, only the following major electrical components above 50 kV of the project were evaluated.

- Construction of a new 66/12 kilovolt (kV) substation (Circle City Substation). The proposed Circle City Substation would be an unstaffed, automated, low-profile 56 megavolt-ampere (MVA), substation with a potential capacity of 112 MVA at final build out.

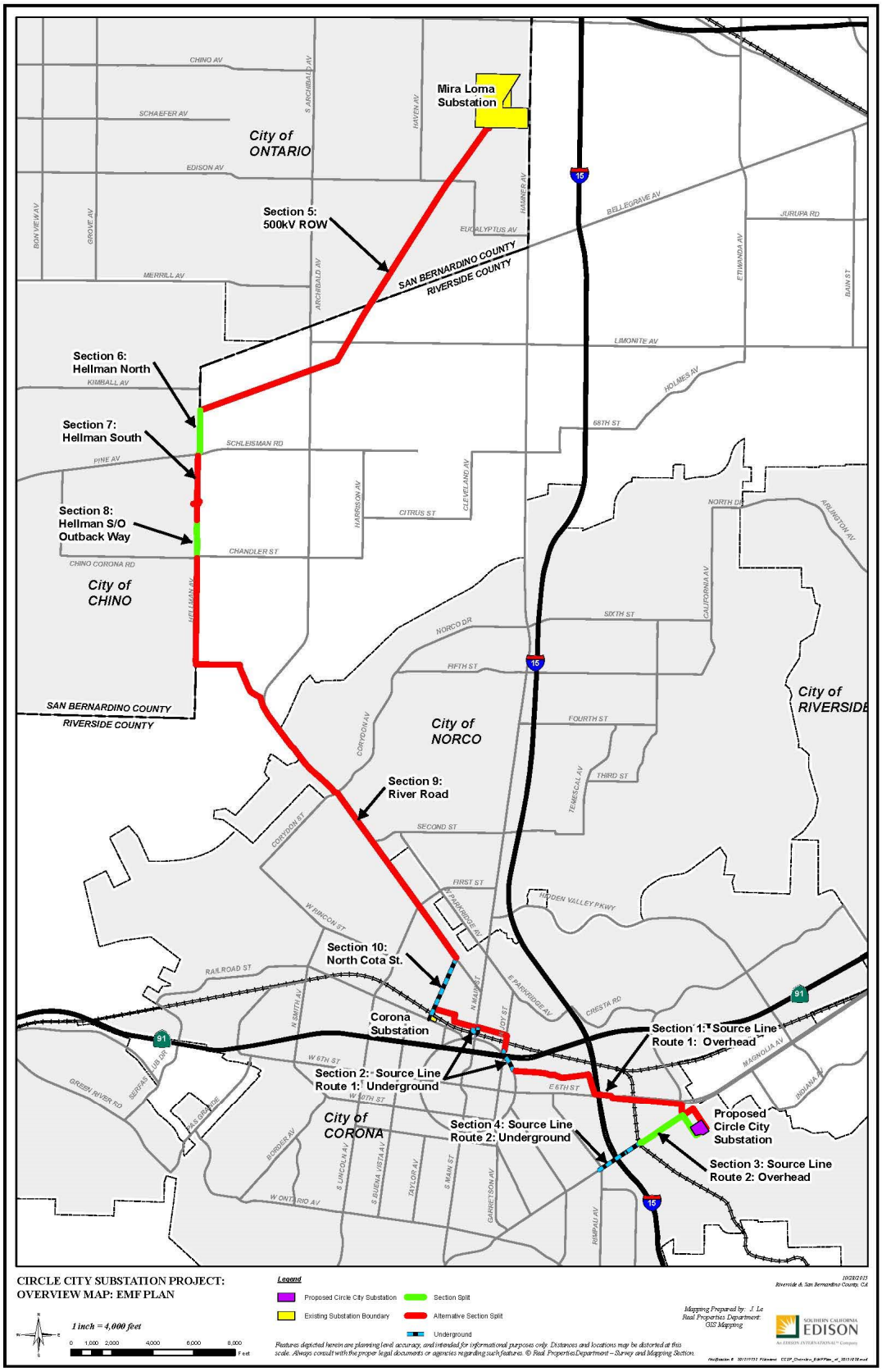
- Construction of four new 66 kV subtransmission source lines, including:

  - Two source lines in a double-circuit configuration, which would be a combination of overhead and underground construction. Each source line would be approximately 1.2 miles in length and would be created by connecting to the existing Chase-Corona-Databank 66 kV Subtransmission Line to form the new Circle City-Corona No. 2 66 kV Subtransmission Line and the new Chase-Circle City-Databank 66 kV Subtransmission Line.

  - Two source lines in a double-circuit configuration, which would be constructed overhead. Each source line would be approximately 3.5 miles in length and would be created by connecting to the existing Mira Loma-Corona-Pedley 66 kV Subtransmission Line to form the Mira Loma-Circle City-Pedley 66 kV and the Circle City-Corona No. 1 66 kV subtransmission lines.

- Construction of a new 66 kV subtransmission line, which would be a combination of both overhead and underground construction. The proposed Mira Loma-Jefferson 66 kV Subtransmission Line would be approximately 10.9 miles in length and would be constructed from SCE's existing Mira Loma Substation to a location adjacent to SCE's existing Corona Substation.

Figure 1. Project Area Map and EMF Evaluation Sections



Circle City Substation Description

The proposed Circle City Substation would be a new 66/12 kV unstaffed, automated, low-profile 56 MVA substation. The dimensions of the substation would be approximately 420 feet by 387 feet. The substation capacity would have the potential to expand to 112 MVA as necessary. The substation would encompass approximately 4.0 acres of a 19.504-acre area comprised of two parcels located in the City of Corona. The dimensions of the substation parcel and the placement and orientation of the major components that would be included in the construction of Circle City Substation are shown in Figure 2.

Subtransmission Line Description

The Proposed Project would include a new Source Line Route consisting of four new 66 kV subtransmission lines along two diverse routes, as well as the new Mira Loma-Jefferson 66 kV Subtransmission Line Route.

The Source Line Route would connect the existing Corona Substation to the proposed Circle City Substation and the existing Pedley and Mira Loma substations to the proposed Circle City Substation, creating the Circle City-Corona No. 1 and Mira Loma-Circle City-Pedley 66 kV subtransmission lines, which would be located along the same poles and within the same underground duct banks. The Source Line Route would also connect the existing Corona Substation to the proposed Circle City Substation and the existing Chase and Data Bank substations to the proposed Circle City Substation, creating the Circle City-Corona No. 2 and the Chase-Circle City-Databank 66 kV subtransmission lines, which would be located along the same poles and within the same underground duct banks. The Circle City-Corona No. 1, Mira Loma-Circle City-Pedley, Circle City-Corona No. 2, and Chase-Circle City-Databank 66 kV Subtransmission Line are referred to as the Source Line Route.

The new Mira Loma-Jefferson 66 kV Subtransmission Line would connect the existing Mira Loma Substation to the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line near Corona Substation, creating the Mira Loma-Jefferson and the Mira Loma-Corona No. 2 66 kV subtransmission lines. The Mira Loma-Jefferson and the Mira Loma-Corona No. 2 66 kV Subtransmission lines are referred to as the Mira Loma-Jefferson 66 kV Subtransmission Line Route.

Source Line Route Description

The Circle City-Corona No. 1 66 kV Subtransmission Line and the Mira Loma-Circle City-Pedley 66 kV Subtransmission Line route would consist of approximately two new wood poles, 76 new light weight steel (LWS) poles, 23 new tubular steel poles (TSPs), four underground vaults, and approximately 2,000 linear feet of new underground duct bank containing six conduits and six cables.

The Circle City-Corona No. 1 66 kV Subtransmission Line and the Mira Loma-Circle City-Pedley 66 kV Subtransmission Line route would begin at the intersection of North Cota

Street and Harrison Street by connecting to an existing 66 kV subtransmission line. The new source line route facilities would head easterly along the south side of Harrison Street then the route would turn south on Sheridan Street and continue south along the east side of Sheridan Street to Blaine Street. The route would then turn east on Blaine Street and continue east along the south side of Blaine Street to the west side of Main Street. At the west side of Main Street, the route would convert to underground and travel approximately 790 linear feet following the Blaine Street undercrossing of Main Street. On the east side of Main Street, the underground facilities would convert to overhead facilities and travel easterly along the north side of Blaine Street to Joy Street, where the route would turn south on Joy Street and continue along the east side of Joy Street until just north of Pearl Street. The route would then convert to underground and head southerly on Joy Street to Grand Boulevard, where the underground facilities would travel southeasterly along Grand Boulevard, under State Route (SR-) 91, to East 3rd Street. At the intersection of Grand Boulevard and 3rd Street, the underground facilities would turn and travel east on 3rd Street for approximately 100 feet, then convert to overhead facilities. The route would then continue easterly along the south side of East 3rd Street, replacing the existing distribution poles with new subtransmission poles and transferring the existing distribution circuits onto the new subtransmission poles. At the end of East 3rd Street, the route would enter privately owned property and continue easterly to the west side of the existing Temescal Wash flood control channel. The route would span the existing Temescal Wash flood control channel to reach Quarry Street, where the route would continue east along the north side of Quarry Street to El Sobrante Avenue. At El Sobrante Avenue, the route would turn and head south along the east side to 6th Street, where the route would turn and head east along the north side of 6th Street, and cross over Interstate (I-) 15 Radio Road, where the route would cross 6th Street and continue heading east along the south side of 6th Street to Magnolia Avenue. The route would then turn on Magnolia Avenue and continue south along the east side, cross over Leeson Lane, enter private property, and terminate at the proposed Circle City Substation. The Circle City-Corona No. 1 66 kV Subtransmission Line and the Mira Loma-Circle City-Pedley 66 kV Subtransmission Line route would be approximately 3.5 miles in length.

The Circle City-Corona No. 2 66 kV Subtransmission Line and the Chase-Circle City-Databank 66 kV Subtransmission Line route would consist of approximately 18 new LWS poles, seven new TSPs, three underground vaults, and approximately 2,500 linear feet of new underground duct bank containing six conduits and six cables.

The Circle City-Corona No. 2 66 kV Subtransmission Line and the Chase-Circle City-Databank 66 kV Subtransmission Line route would connect to an existing 66 kV subtransmission line approximately 100 feet west of Rimpau Avenue on the south side of Magnolia Avenue. A tubular steel riser pole would be installed to accommodate the overhead connection to the existing 66 kV subtransmission line and allow for the line route to be placed underground. On Magnolia Avenue, the route would head easterly underground, cross over I-

15 through an existing utility bridge cell located within the Magnolia Avenue bridge, cross under existing BNSF Railroad Company right-of-way (ROW), then convert to overhead. The route would then continue easterly along the south side of Magnolia Avenue to Leeson Lane and continue easterly along Leeson Lane, then turn and travel southerly into private property to the proposed Circle City Substation. The Circle City-Corona No. 2 66 kV Subtransmission Line and the Chase-Circle City-Databank 66 kV Subtransmission Line route would be approximately 1.2 miles in length.

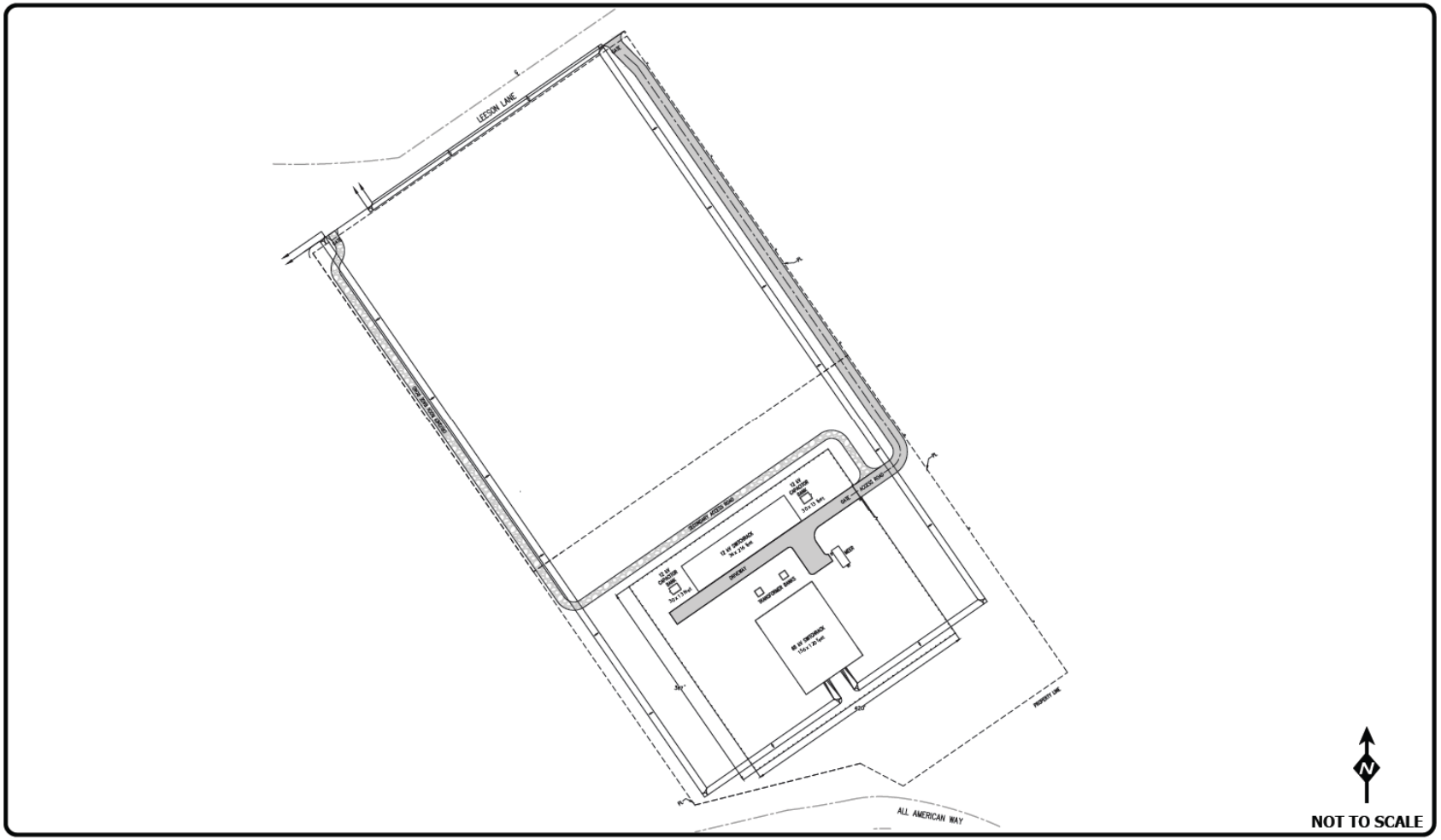
Mira Loma-Jefferson Subtransmission Line Route Description

The Mira Loma-Jefferson 66 kV Subtransmission Line Route would consist of approximately 223 LWS poles, 18 TSPs, two H-frame hybrid poles, 420 linear feet of new underground duct bank containing six conduits, one underground vault, and approximately 3,300 feet of underground cable installation within existing duct bank.

The proposed Mira Loma-Jefferson 66 kV Subtransmission Line route would originate at Mira Loma Substation on existing structures from the Mira Loma-Corona-Jefferson 66 kV Subtransmission Line, which would include replacing two existing LWS poles within Mira Loma Substation with two TSPs to accommodate the new Mira Loma-Jefferson and Mira Loma-Corona No. 2 66 kV subtransmission lines. The new subtransmission lines would then extend southwesterly on existing structures from the existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line, paralleling the existing Mira Loma-Serrano No. 1 and No. 2 500 kV and the Mira Loma-Olinda 220 kV Transmission Line to Hellman Avenue and would replace 84 LWS poles with 82 LWS poles and two TSPs to accommodate a double circuit. At Hellman Avenue, the route would then travel south along the east side of Hellman Avenue on eight new LWS poles and three TSPs to Schleisman Road. At Schleisman Road, the route would cross to the west side and continue south along Hellman Avenue utilizing existing LWS poles for approximately 2,300 feet. At Hellman Avenue, approximately 470 feet south of Outback Way, the existing Archibald-Chino-Corona 66 kV Subtransmission Line would convert to underground for approximately 420 feet in order to accommodate the subtransmission line crossing. The route would then continue heading south to Chino Corona Road, replacing approximately 11 distribution wood poles with eight LWS poles and three TSPs. At the intersection of Chino Corona Road and Hellman Avenue, the route would continue south along east side of Hellman Avenue to River Road then head east along the south side of River Road to Baron Drive, then turn south along the west side of Baron Drive to River Road replacing existing structures (Archibald-Chino-Corona 66 kV Subtransmission Line), which would require the removal of approximately 54 wood poles and installation of approximately 50 LWS poles and four TSPs; the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor. The subtransmission line would then head southeasterly along the southwesterly side of River Road, replacing one wood pole with one LWS pole, and cross the Santa Ana River. At the Santa Ana River crossing, the

existing H-frames would be replaced with engineered hybrid H-frames. The route would continue southeast along the southwest side of River Road on existing structures from the Archibald-Chino-Corona 66 kV Subtransmission Line, replacing 12 wood poles with 12 LWS poles and one TSP. At the intersection of River Road and Corydon Avenue, the Mira Loma-Jefferson 66 kV Subtransmission Line would cross River Road and continue on the northeasterly side of River Road in a southerly direction, replacing existing wood poles (Archibald-Chino-Corona 66 kV Subtransmission Line) with 61 LWS poles and one TSP; the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor. The existing 33 kV distribution line would convert to underground along River Road between Corydon Avenue and North Cota Street to accommodate the new subtransmission line. At the intersection of North Cota Street and River Road, the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to underground on a new tubular steel riser pole and attach to an existing duct bank within North Cota Street, and would then continue along North Cota Street to a location just outside of Corona Substation, where the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to an overhead configuration at a new tubular steel riser pole and tap into an existing 66 kV subtransmission line.

Figure 2. Proposed Substation Layout



V. EVALUATION OF "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION DESIGN OPTIONS

Please note that the following magnetic field models and the calculated results of magnetic field levels are intended only for purposes of identifying the relative differences in magnetic field levels among various subtransmission line and subtransmission line design alternatives under a specific set of modeling assumptions (see §VII-Appendix A for more detailed information about the calculation assumptions and loading conditions) and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location when the Proposed Project is constructed.

For the purpose of evaluating "no-cost and low-cost" magnetic field reduction design options in this FMP, the Proposed Project is divided into three parts:

- Part 1: Proposed Circle City Project 66 kV Subtransmission Lines
- Part 2: Proposed Circle City 66/12 kV Substation
- Part 3: Project Alternatives

Part 1: Proposed Circle City Substation 66 kV Subtransmission Lines

The majority of the proposed 66kV source lines and Mira Loma-Jefferson 66 kV subtransmission line will be built on 75-foot long LWS poles in double-circuit configuration. One section of the proposed Mira Loma-Jefferson 66 kV Line will be built on 70-foot long LWS poles in double-circuit configuration to satisfy 500 kV clearance requirements. A portion of the proposed Mira Loma-Jefferson 66 kV Line will be built on 75-foot long LWS poles in single-circuit configuration. Both of the proposed Circle City Substation 66 kV source lines (Route 1 and Route 2) will make use of underground construction for engineering reasons in selected locations. The proposed Mira Loma-Jefferson 66 kV Line will also make use of using underground construction for engineering reasons in selected locations. These 66 kV subtransmission construction types and the areas where they are proposed to be applied are presented below in Figures 3, 4 and 5. For the purpose of magnetic field reduction evaluation, the proposed subtransmission source lines will be divided into ten (10) Sections, as described in Table 1 and shown above in Figure 1.

Figure 3. Typical 66 kV Overhead Subtransmission Line

70' and 75' Lightweight Steel Pole (LWS) Double Circuit Construction
Sections 1, 3, 5, 6, 7, and 9

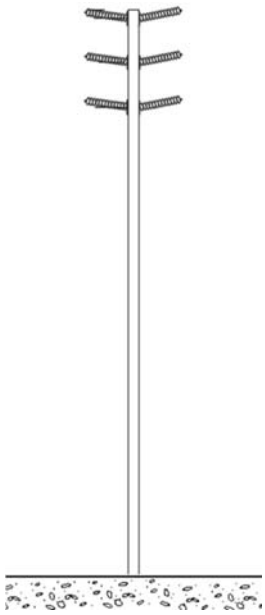


Figure 4. Typical 66 kV Overhead Subtransmission Line

75' Lightweight Steel Pole (LWS) Single Circuit Construction
Section 8

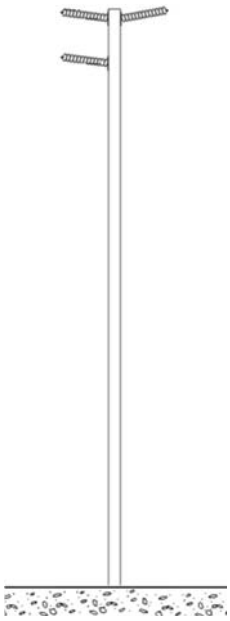
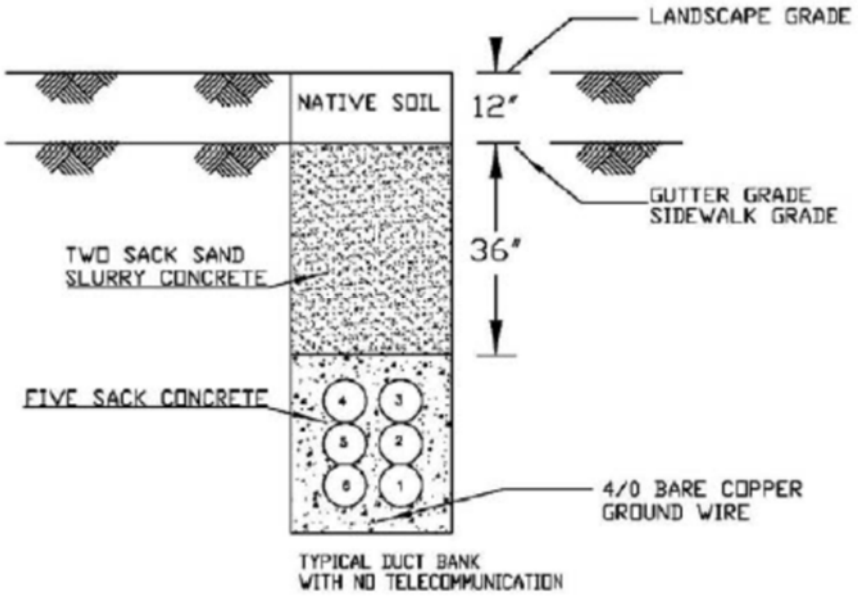


Figure 5. Typical 66 kV Underground Subtransmission Line

Double Circuit Construction
Sections 2, 4 and 10



Section 1: Proposed Circle City 66 kV Source Line Route 1 Overhead Section

The Proposed Circle City 66 kV Source Line Route 1 overhead Section would consist of the proposed Circle City-Corona No.1 and the proposed Mira Loma-Circle City-Pedley double-circuit 66 kV subtransmission lines. The typical LWS double-circuit 66 kV overhead construction proposed for Section 1 is shown in Figure 3. Currently there is no existing subtransmission line in this proposed route. Based on preliminary designs, the LWS poles would be approximately 60 to 65 feet in height above grade, or 70 to 75 feet in total pole length. For magnetic field analysis, calculated field levels at the edges of a typical 25-foot easement located 12.5 feet from the center line (C/L) of the structure will be evaluated. Currently, there are no school, licensed daycare or hospital facilities along Section 1 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Source line Route 1 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction (" EMF Phasing")

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures including structure heights that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing taller structures were considered for this Section of the Proposed Project.

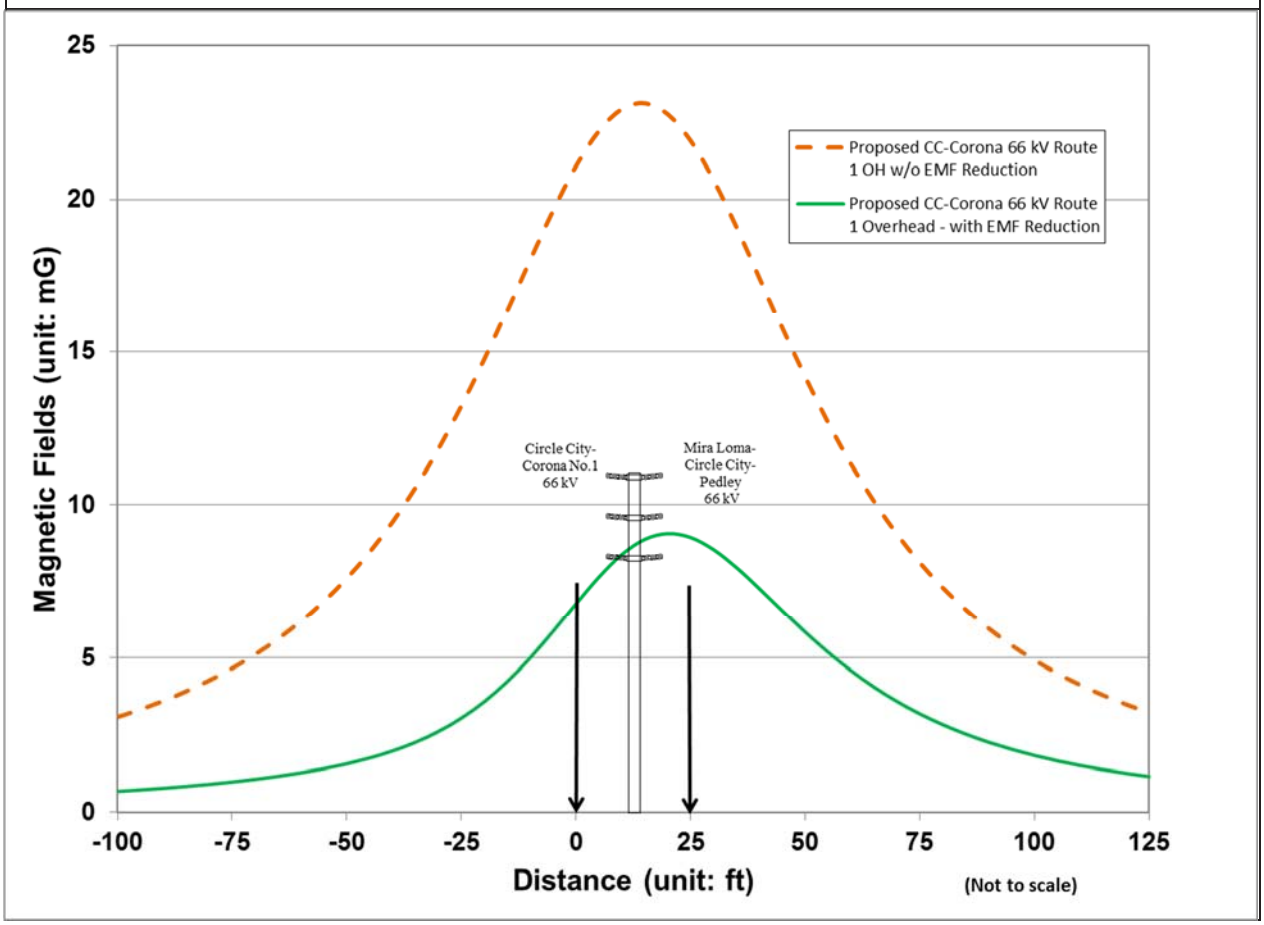
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 2 and Figure 6 below. These calculations were made using the typical proposed LWS structure length of 75 feet.

Table 2. A Comparison of Calculated Magnetic Field Levels[32] for Section 1

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing	-	-	-	-
Proposed Corona 66 kV Source Line Route 1- OH w/o EMF Phasing	21.1	-	21.9	-
Proposed Corona 66 kV Source Line Route 1- OH with EMF Phasing	6.8	67.8 %	8.9	59.4 %

[32] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 6. Calculated Magnetic Field Levels[33] for the Proposed 66 kV Subtransmission Source Line Route 1 Overhead Section 1 (Looking West)



Recommendations for Section 1: *The proposed design includes no-cost field reduction measures. Because the proposed design already incorporates structures with heights meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended.*

33 This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Section 2: Proposed Circle City 66 kV Source Line Route 1 Underground Section

The Proposed Circle City 66 kV Source Line Route 1 Underground Section would consist of new underground duct bank containing six conduits and six cables. The typical 66 kV underground design proposed for Section 2 is shown in Figure 5. Based on preliminary designs, the duct would be located at SCE standard depth of 39 inches below grade. For magnetic field analysis, calculated field levels at the edges of an 80-foot wide franchise easement located 40 feet from the C/L of the underground duct bank will be evaluated. Currently, there are no school, daycare or hospital facilities along Section 2 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Section 2 includes the following no-cost field reduction measures:

- Utilize underground subtransmission construction for engineering reasons
- Arrange underground cables of proposed subtransmission line for magnetic field reduction ("EMF Phasing")

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing deeper duct structures were considered for this Section of the Proposed Project.

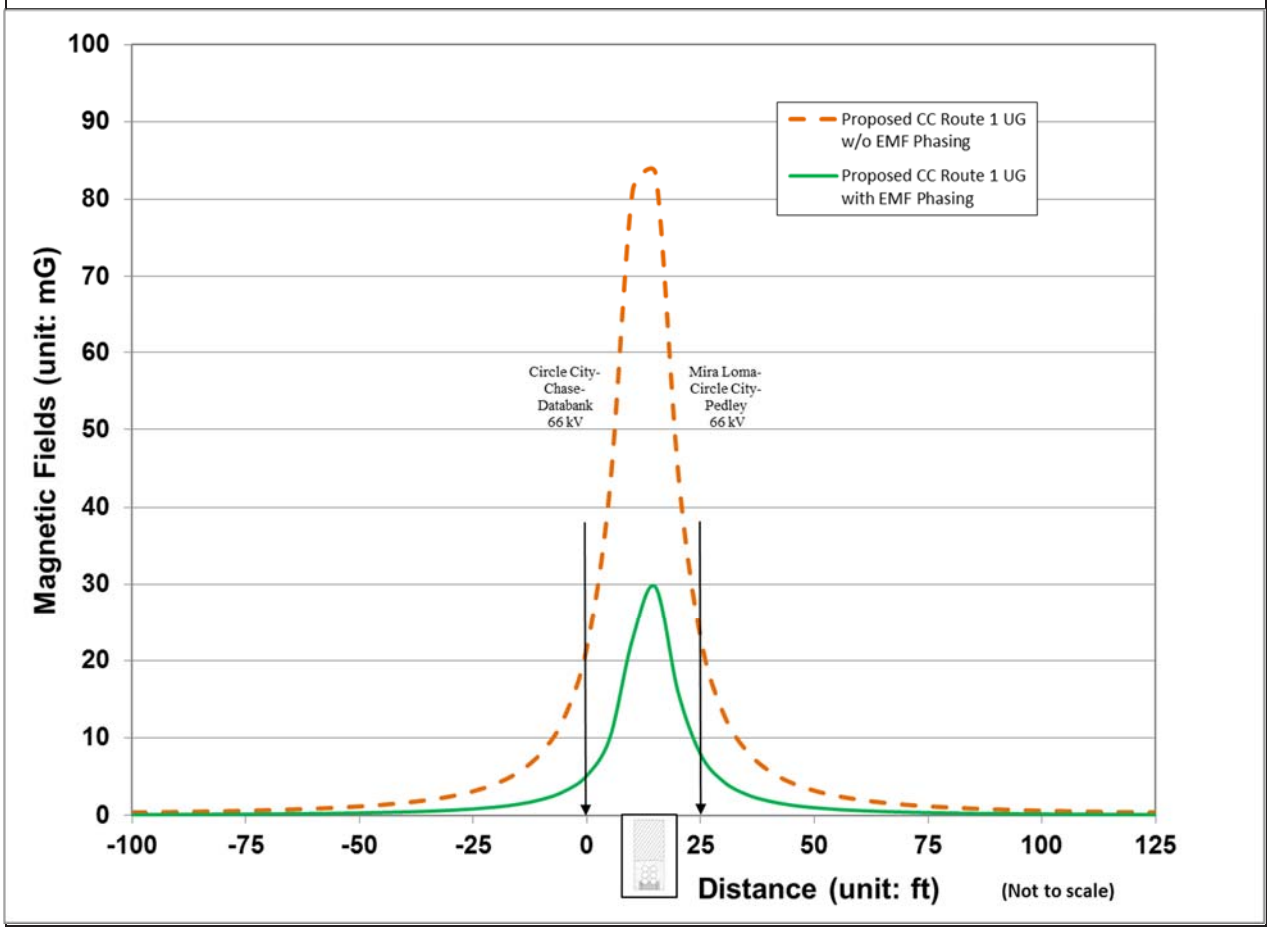
Magnetic Field Calculations: Calculated magnetic field levels for proposed design are shown in Table 3 and Figure 7 below. These calculations were made using the SCE standard 66 kV underground duct bank depth of 39 inches.

Table 3. Calculated Magnetic Field Levels[34] for Section 2

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Proposed Circle City 66 kV Source Line Route 2 – UG w/o EMF Phasing	21.9	-	22.7	-
Proposed Circle City 66 kV Source Line Route 2 – UG with EMF Phasing	5.2	76.3 %	7.9	65.2 %

[34] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 7. Calculated Magnetic Field Levels[35] for the Proposed 66 kV Subtransmission Source Line Route 1 Underground Section 2 (Looking West)



Recommendations for Section 2: *Because the proposed design already incorporates measures meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended.*

35 This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Section 3: Proposed Circle City 66 kV Source Line Route 2 Overhead Section

The Source Line Route 2 overhead Section would consist mainly of new LWS poles. The typical double-circuit 66 kV design proposed for Section 3 is shown in Figure 5. Based on preliminary designs, the LWS poles would be approximately 70 to 75 feet long, or 60 to 65 feet above ground level. The new LWS poles would be located in existing utility franchise position. For magnetic field analysis, calculated field levels at the edges of a typical 25-foot wide easement located 12.5 feet from the C/L of the structure will be evaluated. Currently, there are no school, daycare or hospital facilities along Section 3 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Section 3 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing taller structures were considered for this Section of the Proposed Project.

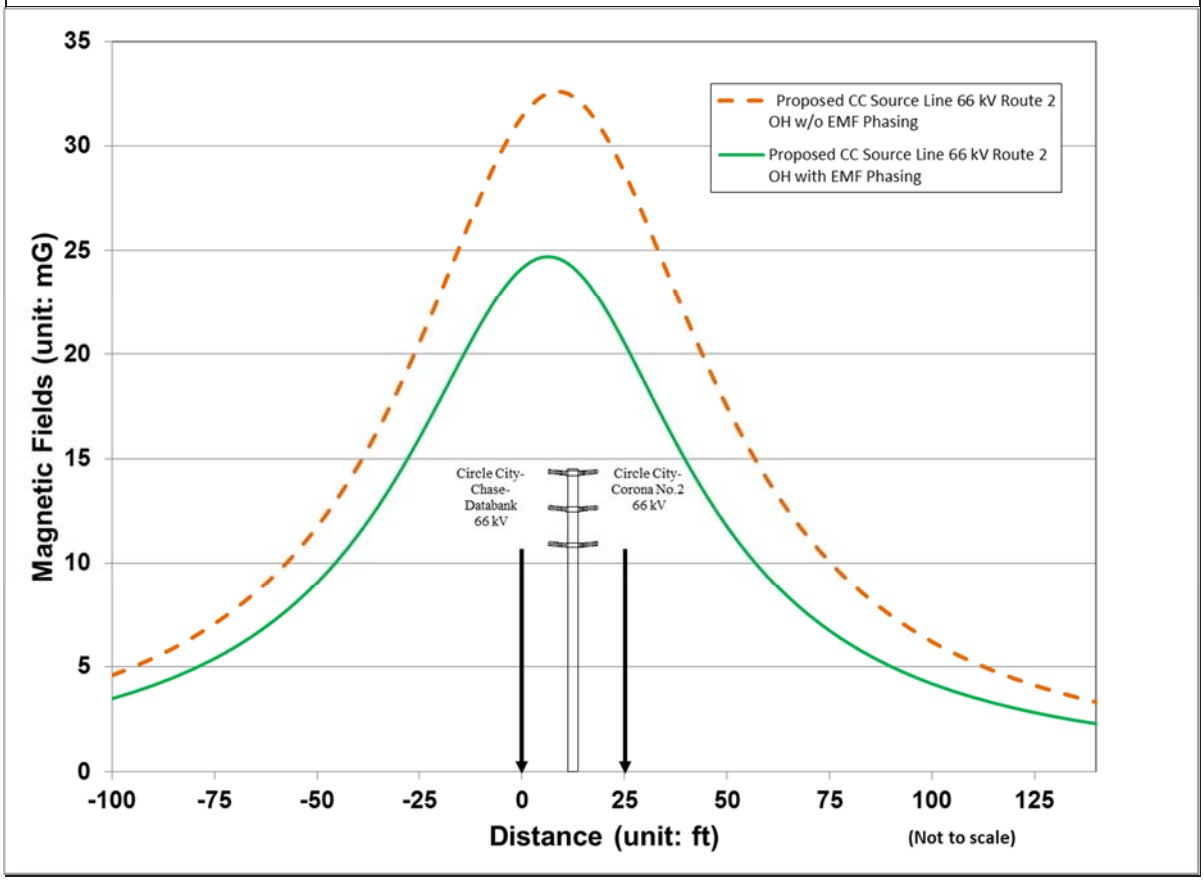
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 4 and Figure 8 below. These calculations were made using the typical proposed structure height of 75 feet.

Table 4. Calculated Magnetic Field Levels[36] for Section 3

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing	-	-	-	-
Proposed Corona 66 kV Source Line Route 2- OH w/o EMF Phasing	31.4	-	21.8	-
Proposed Corona 66 kV Source Line Route 2- OH with EMF Phasing	24.2	22.9 %	14.9	31.7 %

[36] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 8. Calculated Magnetic Field Levels[37] for the Proposed 66 kV Subtransmission Source Line Route 2 Section 3 (Looking Southwest)



Recommendations for Section 3: *The proposed design includes no-cost field reduction measures. Because the proposed design already incorporates structures with heights meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended.*

[37] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Section 4: Proposed Circle City 66 kV Source Line Route 2 Underground Section

Source Line Route 2 would connect to an existing 66 kV subtransmission line approximately 100 feet west of Rimpau Avenue on the south side of Magnolia Avenue. A TSP underground riser pole would be installed to accommodate the overhead connection to the existing 66 kV subtransmission line and allow for the line route to be placed underground and would head easterly underground on Magnolia Avenue. The typical 66 kV underground design proposed for Section 4 is shown in Figure 9. For magnetic field analysis, calculated field levels at the edges of a typical 25-foot wide utility franchise located 12.5 feet from the C/L of the underground duct structure will be evaluated. Currently, there are no schools along Section 4 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Section 4 includes the following no-cost field reduction measures:

- Utilize underground subtransmission construction for engineering reasons
- Arrange underground cables of proposed subtransmission line for magnetic field reduction

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing deeper underground ducts were considered for this Section of the Proposed Project.

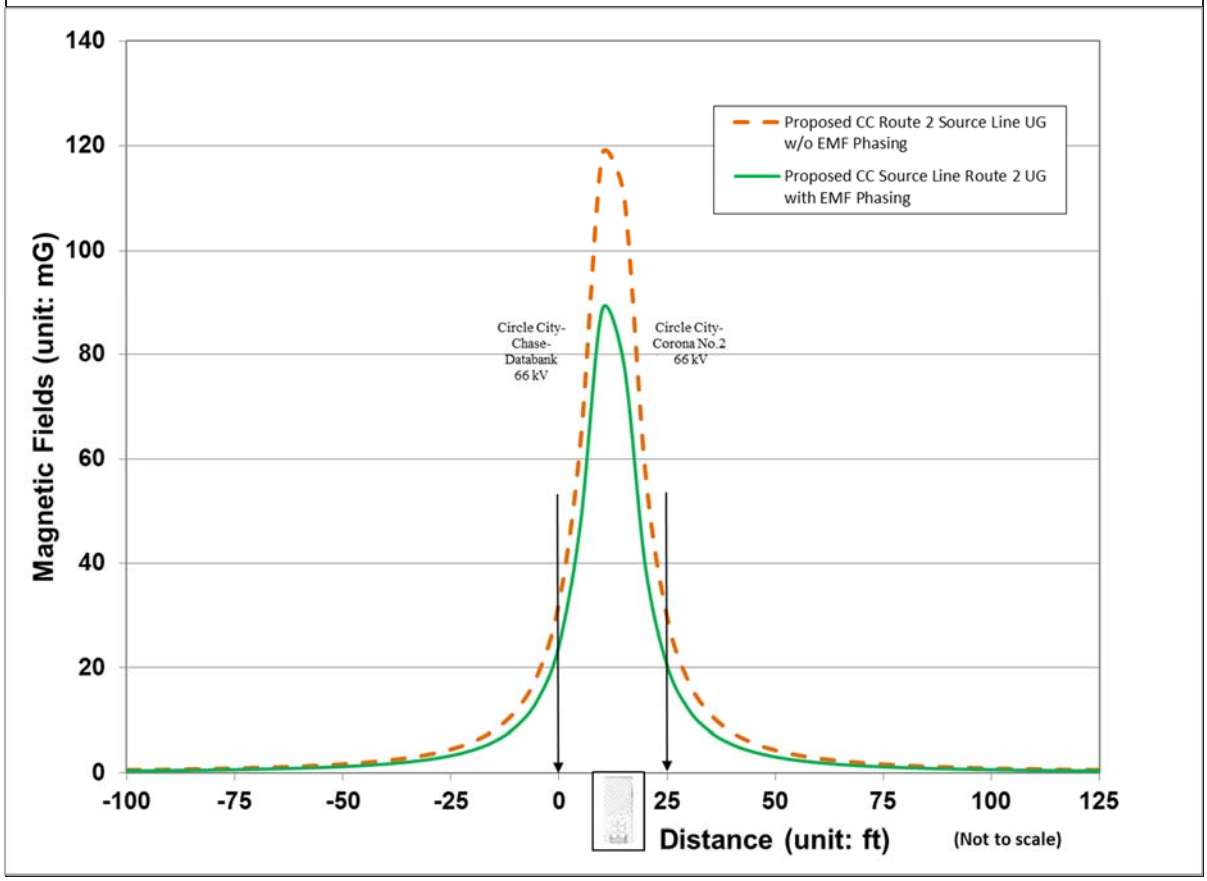
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 5 and Figure 9 below. These calculations were made using the SCE standard underground duct depth of 39 inches.

Table 5. Calculated Magnetic Field Levels[38] for Section 4

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing	-	-	-	-
Proposed Corona 66 kV Source Line Route 2- UG w/o EMF Phasing	32.3	-	29.6	-
Proposed Corona 66 kV Source Line Route 2- UG with EMF Phasing	24.2	25.1 %	20.4	31.1 %

[38] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 9. Calculated Magnetic Field Levels[39] for the Proposed 66 kV Subtransmission Source Line Route 2 Underground Section 4



Recommendations for Section 4: *The proposed design includes no-cost field reduction measures. Because the proposed design already incorporates measures meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended.*

[39] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Section 5: Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at 500 kV ROW

The proposed Mira Loma-Jefferson 66 kV subtransmission line route would originate at Mira Loma Substation. The new subtransmission line would proceed southwesterly on existing 66 kV overhead structures supporting the existing Mira Loma-Corona-Jefferson 66 kV subtransmission line, and paralleling the existing 500 kV transmission lines to Hellman Avenue. Based on preliminary designs, the typical 66 kV double-circuit overhead design on 70-foot LWS poles proposed for Section 5 is shown in Figure 7. For magnetic field analysis, calculated field levels at the edge of easement closest to the C/L of the 66 kV structure will be evaluated since there would be minimal impact to the other edge of the ROW from the addition of the proposed 66 kV line. Currently, there are no schools along Section 5 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Section 5 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing taller structures were considered for this Section of the Proposed Project.

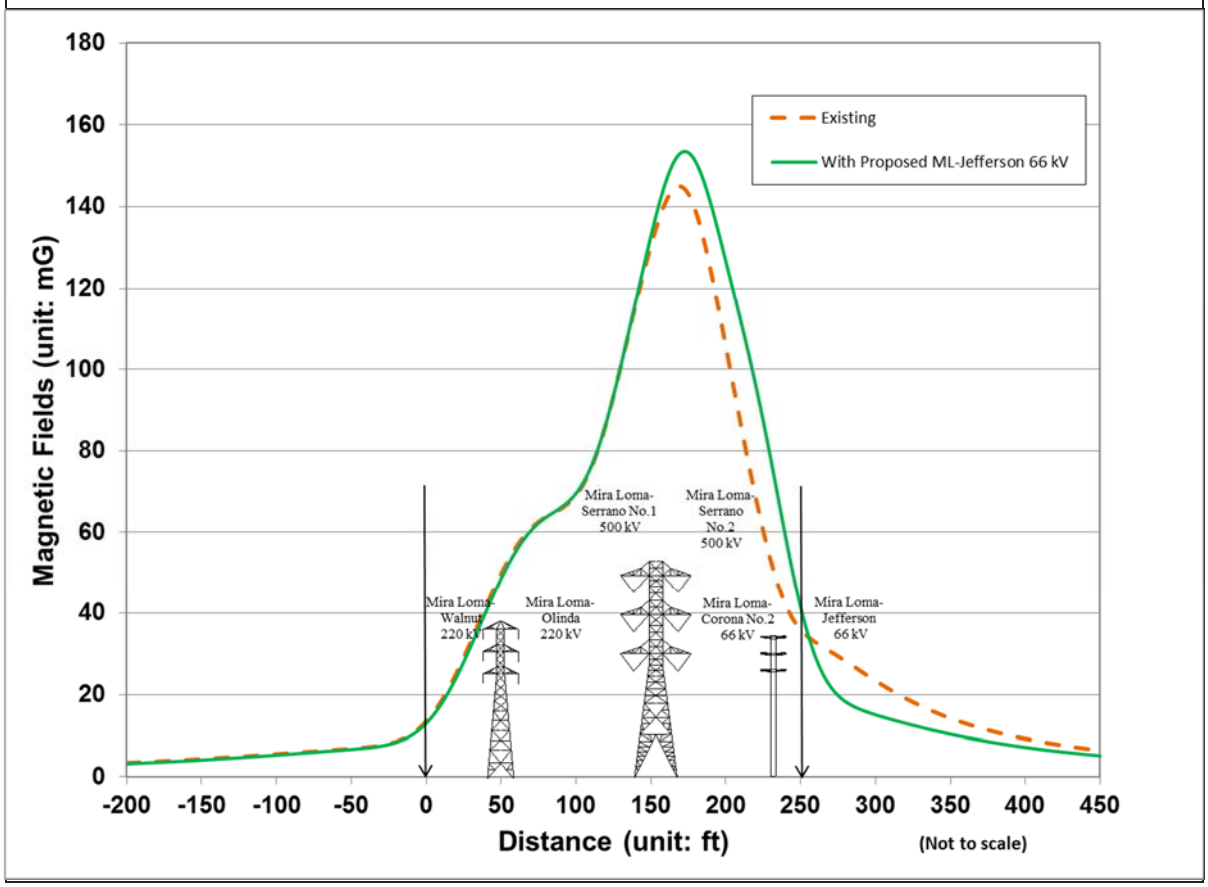
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 6 below. These calculations were made using the typical proposed structure height of 70 feet due to the General Order (GO) 95 clearance requirement in the 500 kV ROW.

Table 6. Calculated Magnetic Field Levels[40] for Section 5

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing	Not evaluated	-	35.9	-
Proposed ML-Jefferson 66 kV with EMF Phasing	Not evaluated	-	41.5	Less than 15% increase

[40] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 10. Calculated Magnetic Field Levels[41] for the Proposed 66 kV Subtransmission Line at Section 5 (Looking Northeast)



Recommendations for Section 5: *The proposed design includes no-cost field reduction measures. Because the proposed design already incorporates measures meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended. No-cost phasing is recommended even there is less than 15% reduction at the right edge of the ROW because there would be field reduction where residential homes are.*

Section 6: Proposed Mira Loma-Jefferson 66 kV subtransmission line at Hellman Avenue North of Schleisman Road

At Hellman Avenue, the new subtransmission line would then travel south along Hellman Avenue on eight new LWS poles and three TSPs to Schleisman Road. The typical 66 kV double-circuit overhead design proposed for Section 6 is shown in Figure 8. For magnetic field analysis, calculated field levels at the edges of easement located 12.5 feet from the C/L of

[41] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

the structure will be evaluated. Currently, there are no schools along Section 6 of the proposed 66 kV subtransmission source line route.

No-Cost Field Reduction Measures: The proposed design for Section 6 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing taller structures were considered for this Section of the Proposed Project.

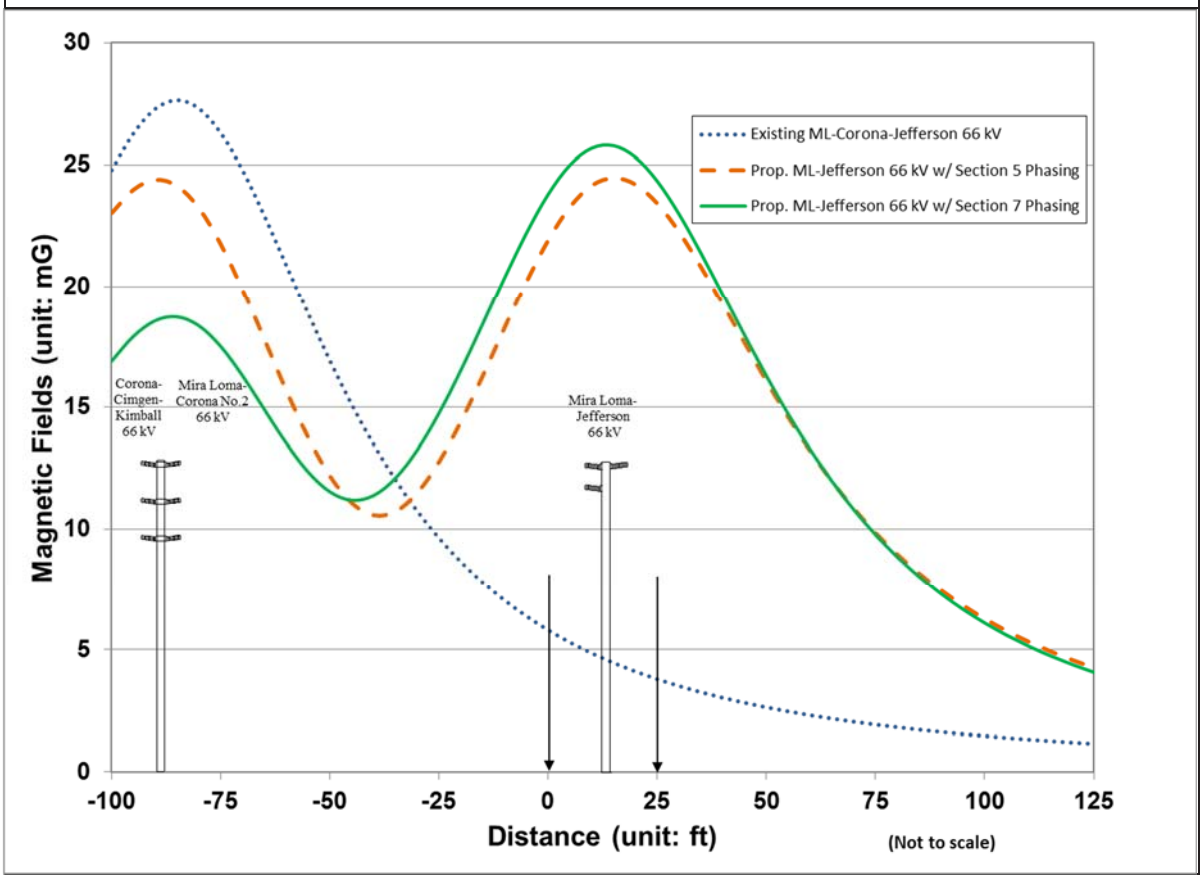
Magnetic Field Calculations: the calculated magnetic field levels for the proposed design are shown in Table 7 and Figure 11 below. These calculations were made using the typical proposed structure height of 75 feet.

Table 7. Calculated Magnetic Field Levels[42] for Section 6 at Franchise Location on East Side of Hellman Avenue

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing Double-Circuit 66 kV Lines on West Side of Hellman Avenue	5.8	-	3.8	-
Proposed Mira Loma-Jefferson 66 kV Line with Section 5 Phasing	21.9	-	23.4	-
Proposed Mira Loma-Jefferson 66 kV Line with Section 7 Phasing	23.8	-	24.3	-

[42] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 11. Calculated Magnetic Field Levels[43] for the Proposed 66 kV Subtransmission Line Section 6 (Looking North)



Recommendations for Section 6: *The proposed design includes low-cost field reduction measure of using transposition structures to roll the phases from Section 5 recommended phasing to Section 7 recommended phasing. This measure would achieve more than 15% of magnetic field reduction at edges of the ROW in Section 7. It is recommended to adopt this low-cost magnetic field reduction measure.*

Section 7: Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at Hellman Avenue South of Schleisman Rd.

At Schleisman Road, the new subtransmission line would continue south along Hellman Avenue utilizing existing LWS poles for approximately 2,321 feet. The proposed Mira Loma-Jefferson 66 kV Subtransmission Line will double up with the existing Chino-Cimgen-Kimball

[43] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

66 kV Subtransmission Line. The typical 66 kV double-circuit overhead design proposed for Section 7 is shown in Figure 12.

No-Cost Field Reduction Measures: The proposed design for Section 7 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: The following low-cost field reduction measure was considered for this section:

- Arrange conductors of proposed subtransmission lines for magnetic field reduction using transposition structures

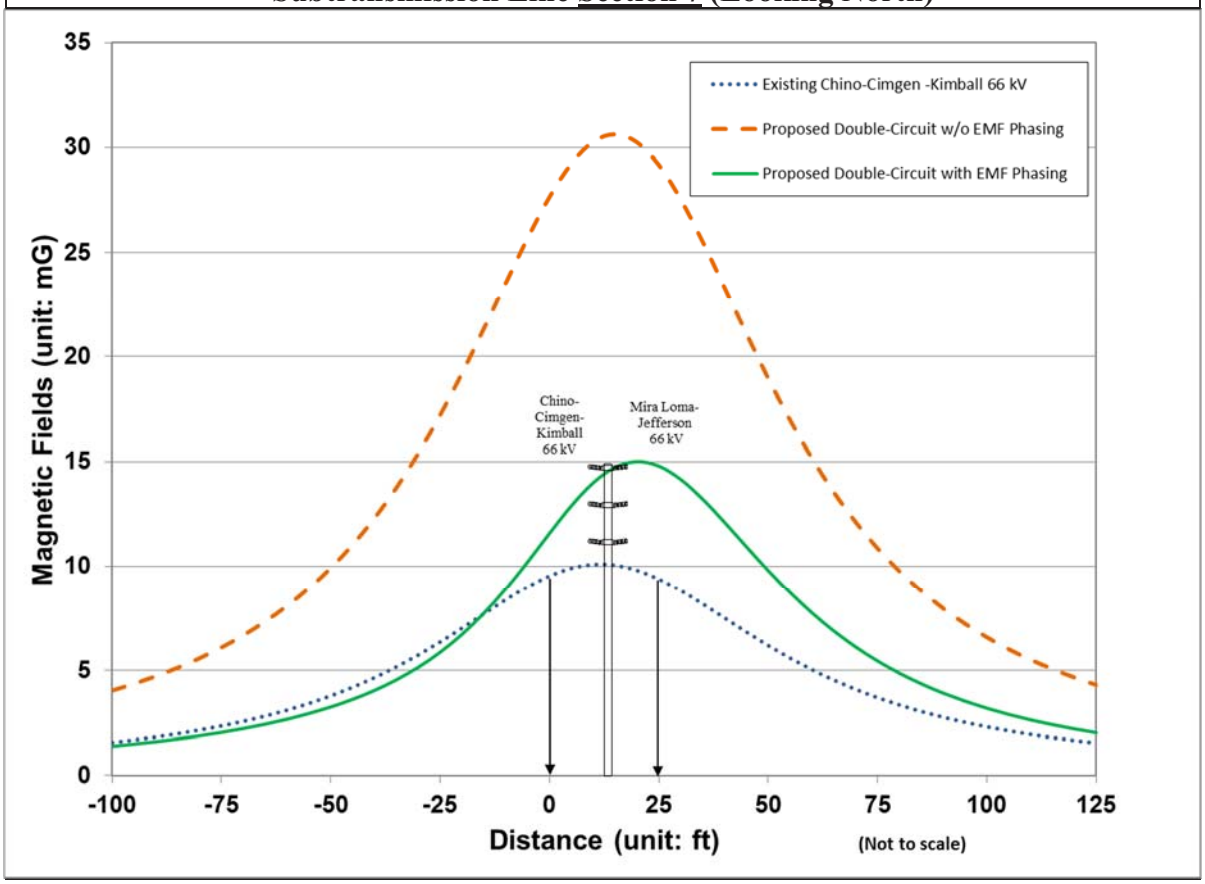
Magnetic Field Calculations: Calculated magnetic field levels for proposed the design are shown in Table 8 and Figure 12 below. These calculations were made using the typical proposed structure height of 75 feet.

Table 8. Calculated Magnetic Field Levels[44] for Section 7

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing Single-Circuit 66 kV	9.6	-	9.4	-
Proposed Double-Circuit 66 kV w/o EMF Phasing	27.7	Increase	29.2	Increase
Proposed Double-Circuit 66 kV with EMF Phasing	11.6	58.1 %	14.8	49.3 %

[44] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 12. Calculated Magnetic Field Levels[45] for the Proposed 66 kV Subtransmission Line Section 7 (Looking North)



Recommendations for Section 7: *The low-cost measure of re-arranging conductors for magnetic field reduction using transposition structure is recommended for this section due to nearby homes on the east side of the proposed line.*

Section 8: Proposed Mira Loma-Jefferson 66 kV subtransmission line at Hellman Ave. South of Hereford Rd.

At Hellman Avenue, approximately 470 feet south of Outback Way, the existing Archibald-Chino-Corona 66 kV Subtransmission Line would convert to underground for approximately 420 feet in order to accommodate the subtransmission line crossing. The route would then continue heading south to Chino Corona Road, replacing approximately 11 distribution wood poles with eight LWS poles and three TSPs. The typical 66 kV double-circuit overhead design proposed for Section 8 is shown in Figure 13.

[45] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

No-Cost Field Reduction Measures: The proposed design for Section 8 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize subtransmission line construction that reduces the space between conductors compared with other designs

Low-Cost Field Reduction Options: The following low-cost field reduction measure was considered for this section:

- Arrange conductors of proposed subtransmission lines for magnetic field reduction using transposition structures

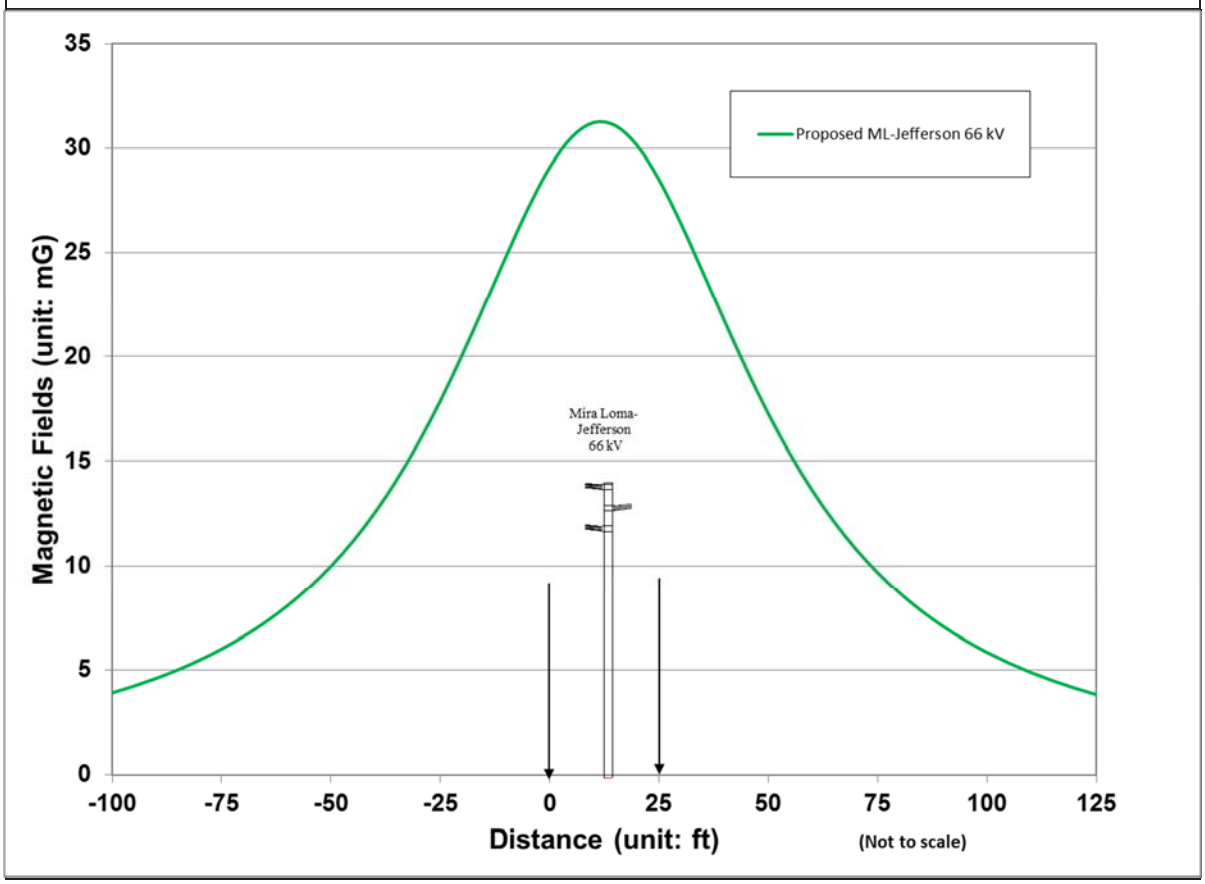
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 9 and Figure 13 below. These calculations were made using the typical proposed structure height of 70 feet.

Table 9. Calculated Magnetic Field Levels[46] for Section 8

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Proposed Mira Loma-Jefferson 66 kV Line	29.1	-	28.5	-

[46] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 13. Calculated Magnetic Field Levels[47] for the Proposed 66 kV Subtransmission Line Section 8 (Looking North)



Recommendations for <u>Section 8</u>: *The proposed design includes low-cost field reduction measure of using transposition structures to roll the phases from Section 7 recommended phasing to Section 9 recommended phasing. This measure would achieve more than 15% of magnetic field reduction at edges of the ROW in Section 9. It is recommended to adopt this low-cost magnetic field reduction measure.*

<u>Section 9:</u> Proposed Mira Loma-Jefferson 66 kV subtransmission line at River Rd.

The proposed double-circuit of Archibald-Chino-Corona 66 kV and Mira Loma-Jefferson 66 kV Line runs adjacent to Auburndale Intermediate School on River Road.

---

[47] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

At the intersection of Chino Corona Road and Hellman Avenue, the route would continue south along east side of Hellman Avenue to River Road then head east along the south side of River Road to Baron Drive, then turn south along the west side of Baron Drive to River Road replacing existing structures (Archibald-Chino-Corona 66 kV Subtransmission Line), which would require the removal of approximately 54 wood poles and installation of approximately 50 LWS poles and four TSPs; the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor. The subtransmission line would then head southeasterly along the southwesterly side of River Road, replacing one wood pole with one LWS pole, and cross the Santa Ana River. At the Santa Ana River crossing, the existing H-frames would be replaced with engineered hybrid H-frames. The route would continue southeast along the southwest side of River Road on existing structures from the Archibald-Chino-Corona 66 kV Subtransmission Line, replacing 12 wood poles with 12 LWS poles and one TSP. At the intersection of River Road and Corydon Avenue, the Mira Loma-Jefferson 66 kV Subtransmission Line would cross River Road and continue on the northeasterly side of River Road in a southerly direction, replacing existing wood poles (Archibald-Chino-Corona 66 kV Subtransmission Line) with 61 LWS poles and one TSP; the new poles would accommodate the new Mira Loma-Jefferson 66 kV Subtransmission Line and the transfer of the existing conductor. The existing 33 kV distribution line would convert to underground along River Road between Corydon Avenue and North Cota Street to accommodate the new subtransmission line.

The typical double-circuit 66 kV overhead design proposed for Section 9 is shown in Figure 11. For magnetic field analysis, calculated field levels at the edges of easement located 12.5 feet from the C/L of the structure will be evaluated.

No-Cost Field Reduction Measures: The proposed design for Section 9 includes the following no-cost field reduction measures:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

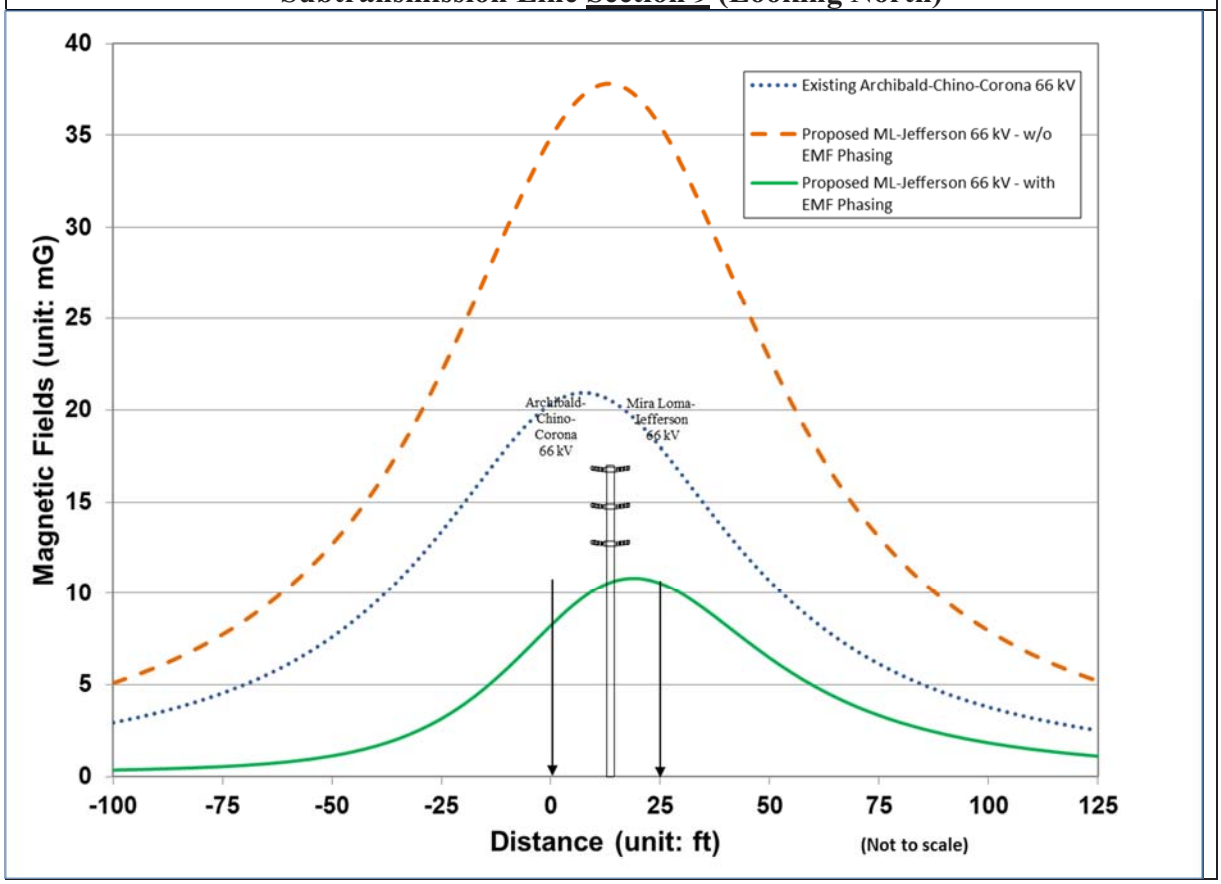
Low-Cost Field Reduction Options: The following low-cost field reduction measure was considered for this section:

- Arrange conductors of proposed subtransmission lines for magnetic field reduction using transposition structures

Magnetic Field Calculations: The calculated magnetic field levels for the proposed design are shown in Table 10 and Figure 14 below. These calculations were made using the proposed structure height of 75 feet.

Table 10. Calculated Magnetic Field Levels[48] for Section 9				
Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing Archibald-Chino-Corona 66 kV	20.3	-	18.0	-
Proposed Double-Circuit 66 kV Lines w/o EMF Phasing	34.9	Increase	35.5	Increase
Proposed Double-Circuit 66 kV Lines with EMF Phasing	8.2	76.5 %	10.5	70.4 %

Figure 14. Calculated Magnetic Field Levels[49] for the Proposed 66 kV Subtransmission Line Section 9 (Looking North)



48 This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

49 This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Recommendations for Section 9: *The low-cost measure of re-arranging conductors for magnetic field reduction using transposition structure is recommended for this section due to nearby homes on the east side of the proposed line.*

Section 10: Proposed Mira Loma-Jefferson 66 kV Subtransmission line at N. Cota St.

At the intersection of North Cota Street and River Road, the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to underground on a new tubular steel riser pole and attach to an existing duct bank within North Cota Street, and would then continue along North Cota Street to a location just outside of Corona Substation, where the Mira Loma-Jefferson 66 kV Subtransmission Line would convert to an overhead configuration at a new tubular steel riser pole and tap into an existing 66 kV subtransmission line. The typical underground 66 kV subtransmission line design proposed for Section 10 is shown in Figure 12. For magnetic field analysis, calculated field levels at the edges of utility franchise located 12.5 feet from the C/L of the structure will be evaluated. Currently, there are no schools along Section 1 of the proposed 66 kV subtransmission line route.

No-Cost Field Reduction Measures: The proposed design for Section 10 includes the following no-cost field reduction measures:

- Utilize underground subtransmission construction for engineering reasons
- Arrange underground cables of proposed subtransmission line for magnetic field reduction

Low-Cost Field Reduction Options: Because the proposed design incorporates the above no-cost field reduction measures that meet or exceed SCE's EMF preferred design criteria, no further low-cost reduction measures such as utilizing deeper underground ducts were considered for this Section of the Proposed Project.

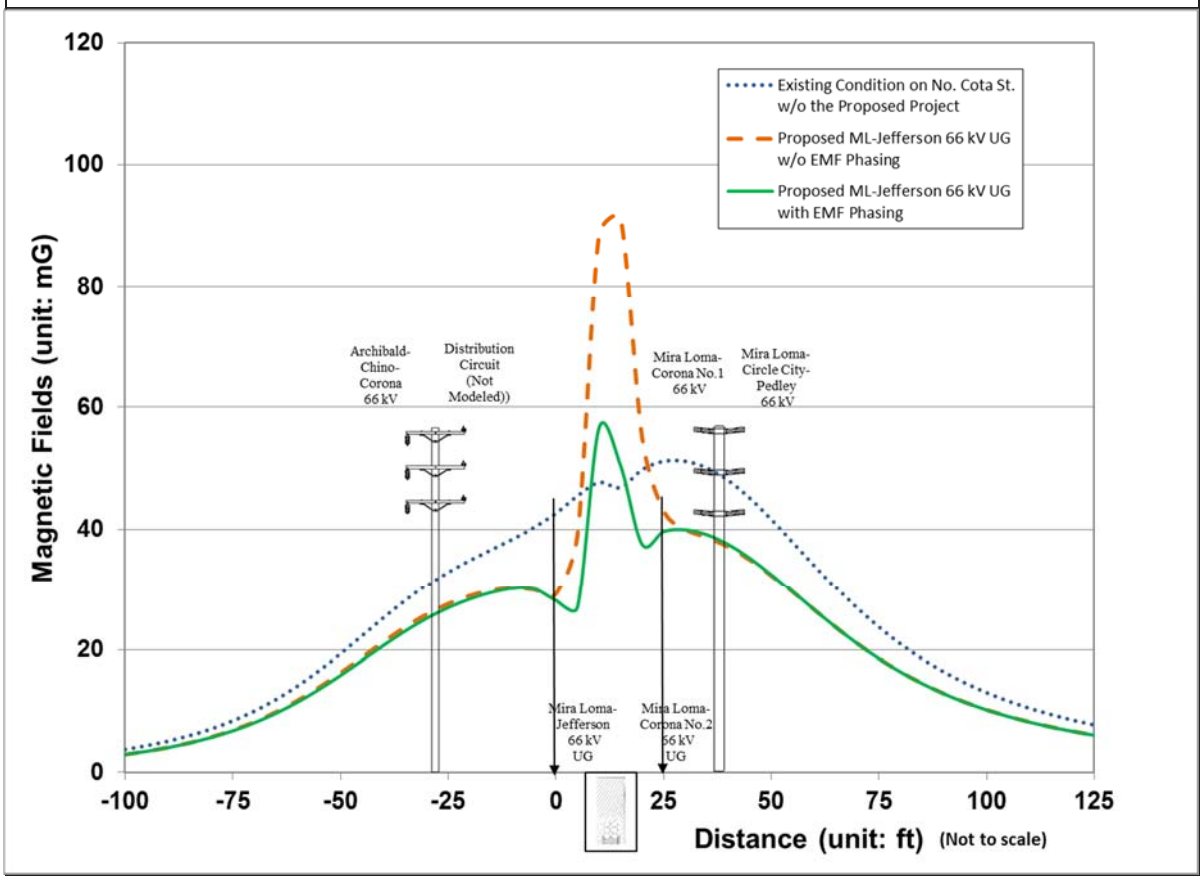
Magnetic Field Calculations: Calculated magnetic field levels for the proposed design are shown in Table 11 and Figure 15 below. These calculations were made using the SCE standard underground duct structure depth of 39 inches.

Table 11. Calculated Magnetic Field Levels[50] for Section 10

Design Options	Left Edge of the ROW (mG)	% Reduction	Right Edge of the ROW (mG)	% Reduction
Existing Condition on N. Cota St. Without Proposed Project	42.6	-	51.1	-
Proposed ML-Jefferson 66 kV UG Line w/o EMF Phasing	29.3	31.2 %	43.0	15.9 %
Proposed ML-Jefferson 66 kV UG Line with EMF Phasing	28.2	3.8 %	39.6	7.7 %

[50] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 15. Calculated Magnetic Field Levels[51] for the Proposed 66 kV Subtransmission Line Section 10 (Looking Northeast)



Recommendations for Section 10: *The proposed design includes no-cost field reduction measures. Because the proposed design already incorporates measures meeting or exceeding SCE's preferred design criteria, no further low-cost field reduction measures are recommended.*

[51] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Part 2: Proposed Circle City 66/12 kV Substation

Generally, magnetic field values along the substation perimeter are low compared to the substation interior because of the distance from the perimeter to the energized equipment. Normally, the highest magnetic field values around the perimeter of a substation result from overhead power lines and underground duct banks entering and leaving the substation, and are not caused by substation equipment. Therefore, the magnetic field reduction design options generally applicable to a substation project are as follows:

- Site selection for a new substation
- Place major substation electrical equipment (such as transformers, switchracks, buses and underground duct banks) away from the substation property lines
- Configure the transfer and operating buses with the transfer bus closest to the nearest property line

The Substation Checklist, as shown in Table 4, is used for evaluating the no-cost and low-cost design options considered for the substation project, the design options adopted, and reasons that certain design options were not adopted if applicable.

Table 12. Substation Checklist for Examining No-cost and Low-cost Magnetic Field Reduction Design Options

No.	No-Cost and Low-Cost Magnetic Field Reduction Design Options Evaluated for a Substation Project	Design Options Adopted? (Yes/No)	Reason(s) if not Adopted
1	Are 66 kV rated transformer(s) 15 feet (or more) from the substation property line?	Yes	
2	Are 66 kV rated switch-racks, capacitor banks & bus 8 feet (or more) from the substation property line?	Yes	
3	Are 66 kV rated transfer & operating buses configured with the transfer bus facing the nearest property line?	N/A	It is a double-bus design
4	Are underground cable duct banks greater than 12 feet from side of property line?	Yes	

Part 3: Project Alternatives

This FMP includes only "no-cost and low-cost" magnetic field reduction design options for SCE's proposed routes and Proposed Substation site. SCE's Proponent's Environmental Assessment (PEA) contains various alternative line routes and substation site(s). Comparable "no-cost and low-cost" magnetic field reduction options for the Proposed Project can be applied to all alternative subtransmission routes and substation sites. A Final FMP will be prepared should an alternative route be approved.

VI. FINAL RECOMMENDATIONS FOR IMPLEMENTING "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION DESIGN OPTIONS

In accordance with the "EMF Design Guidelines", filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06-01-042, SCE would implement the following "no-cost and low-cost" magnetic field reduction design options for Proposed Project:

<u>Section 1:</u> Proposed Circle City 66 kV Source Line Route 1 Overhead Section

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
  - Circle City-Corona No. 1 66 kV **B-A-C** top to bottom, and
  - Mira Loma-Circle City-Pedley 66 kV **C-A-B** top to bottom or equivalent combination

<u>Section 2:</u> Proposed Circle City 66 kV Source Line Route 1 Underground Section

- Utilize underground subtransmission construction for engineering reasons
- Arrange underground cables of proposed subtransmission line for magnetic field reduction:
  - Circle City-Corona No. 1 66 kV **B-A-C** top to bottom, and
  - Mira Loma-Circle City-Pedley 66 kV **C-A-B** top to bottom or equivalent combination

<u>Section 3:</u> Proposed Circle City 66 kV Source Line Route 2 Overhead Section

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
  - Circle City-Chase-Databank 66 kV **A-B-C** top to bottom, and
  - Circle City-Corona No.2 66 kV **A-B-C** top to bottom or equivalent combination

<u>Section 4:</u> Proposed Circle City 66 kV Source Line Route 2 Underground Section

- Utilize underground subtransmission construction for engineering reasons

- Arrange underground cables of proposed subtransmission line for magnetic field reduction:
  - Circle City-Chase-Databank 66 kV **A-B-C** top to bottom, and
  - Circle City-Corona No.2 66 kV **A-B-C** top to bottom or equivalent combination

<u>Section 5:</u> Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at 500 kV ROW

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
  - Mira Loma-Corona No. 2 66 kV **B-A-C** top to bottom, and
  - Mira Loma-Jefferson 66 kV **B-C-A** top to bottom or equivalent combination

<u>Section 6:</u> Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at Hellman Avenue North of Schleisman Road

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
  - Chino-Cimgen-Kimball 66 kV **A-B-C** top to bottom, and
  - Mira Loma-Corona No.2 66 kV **B-C-A** top to bottom, and
  - Transition the Mira Loma-Jefferson from **B-C-A** in Section 5 to **A-B-C** in Section 7.

<u>Section 7</u>: Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at Hellman Avenue South of Schleisman Road

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
    - Chino-Cimgen-Kimball 66 kV **A-B-C** top to bottom, and
    - Mira Loma-Jefferson 66 kV **A-B-C** top to bottom, or equivalent combination

<u>Section 8:</u> Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at Hellman Avenue South of Hereford Road

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria

- Utilize subtransmission line construction that reduces the space between conductors compared with other designs

- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
    - Transition the Mira Loma-Jefferson from **A-B-C** in Section 7 to **A-C-B** in Section 9.

<u>Section 9:</u> Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at River Road

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

- Arrange conductors of proposed subtransmission lines for magnetic field reduction:
    - Archibald-Chino-Corona 66 kV **B-C-A** top to bottom, and
    - Mira Loma-Jefferson 66 kV **A-C-B** top to bottom, or equivalent combination

<u>Section 10:</u> Proposed Mira Loma-Jefferson 66 kV Subtransmission Line at N. Cota St.

- Utilize underground subtransmission construction for engineering reasons

- Arrange underground cables of proposed subtransmission line for magnetic field reduction Arrange underground cables of proposed subtransmission line for magnetic field reduction:
    - Mira Loma-Jefferson 66 kV **A-C-B** top to bottom on the west side, and,
    - Mira Loma-Corona No.2 66 kV **B-C-A** top to bottom or equivalent combination

Proposed Circle City 66/12 kV Substation:

- Placing major substation electrical equipment (such as transformers, switchracks, buses and underground duct banks) away from the substation property lines

The recommended "no-cost or low-cost" magnetic field reduction design options listed above are based upon preliminary engineering designs, and therefore, they are subject to change during the final engineering designs. If the final engineering designs are different than preliminary engineering designs, SCE would implement comparable "no-cost and low-cost" magnetic field reduction design options to achieve similar EMF reductions. If the final engineering designs are significantly different (in the context of evaluating and implementing CPUC's "no-cost and low-cost" EMF Policy) than the preliminary designs, a Final FMP or an addendum to the FMP will be prepared to evaluate EMF and "no-cost and low-cost" EMF reduction options for the final engineering design.

SCE's plan for applying the above "no-cost or low-cost" magnetic field reduction design options uniformly for the Proposed Project is consistent with the CPUC's EMF Decisions No. 93-11-013 and No. 06-01-042, and also with recommendations made by the U.S. NIEHS. Furthermore, the recommendations above meet the CPUC approved EMF Design Guidelines as well as all applicable national and state safety standards for new electrical facilities.

VII. APPENDIX A: TWO-DIMENTIONAL MODEL ASSUMPTIONS AND YEAR 2021 FORECASTED LOADING CONDITIONS

Magnetic Field Assumptions:

SCE uses a computer program titled "MFields"[52] to model the magnetic field characteristics of various transmission designs options. All magnetic field models and the calculated results of magnetic field levels presented in this document are intended only for purposes of identifying the relative differences in magnetic field levels among various subtransmission line and subtransmission line design alternatives under a specific set of modeling assumptions and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the project is constructed.

Unless otherwise noted, typical two-dimensional magnetic field modeling assumptions are as follows:

- All subtransmission lines were modeled using forecasted peak loads (see Table 13 and 14 below)
- All conductors were assumed to be straight and infinitely long
- Magnetic field strength was calculated at a height of three feet above ground
- Resultant magnetic fields values were presented in this FMP
- All line currents were assumed to be balanced (i.e. neutral or ground currents are not considered)
- Terrain was assumed to be flat
- Project dominant power flow directions were used.

52 SCE, MFields for Excel, Version 2.0, 2007.

Table 13. Year 2021 Forecasted Loading Conditions for Circle City Substation Project Area Existing Transmission and Subtransmission Lines without Proposed Project	
Circuit Name	**Current (Amps)**
Existing Chase-Corona-Databank 66 kV Subtransmission Line	760
Existing Mira Loma-Corona-Jefferson 66 kV Subtransmission Line	744
Existing Archibald-Chino-Corona 66 kV Subtransmission Line	702
Existing Chino-Cimgen-Kimball 66 kV Subtransmission Line	313
Existing (RV) Mira Loma-Serrano #1 500 kV Transmission Line	841 (Note 3)
Existing Mira Loma-Serrano #2 500 kV Transmission Line	1499 (Note 3)
Existing Mira Loma-Walnut 230 kV Transmission Line	804 (Note 3)
Existing Mira Loma-Olinda 230 kV Transmission Line	1354 (Note 3)

Notes:

1. Subtransmission line forecasted loading data is based upon scenarios representing load forecasts for the second quarter of 2021. The forecasting data is subject to change depending upon availability of generation, load increase, changes in load demand, and many other factors.
2. Load flow direction for the Chase-Circle City-Databank and Circle City-Corona #2 66 kV subtransmission lines are assumed to be in the opposite direction.
3. Peak transmission lines loading forecast for Year 2020.

Table 14. Year 2021 Forecasted Loading Conditions for Proposed Circle City Substation Project Subtransmission Source Lines, Proposed Mira Loma-Jefferson 66 kV Subtransmission Line, and Adjacent Transmission Lines	
Circuit Name	**Current (Amps)**
Proposed Circle City-Corona #1 66 kV Subtransmission Source Line	286
Proposed Mira Loma-Circle City-Pedley 66 kV Subtransmission Line	519
Proposed Circle City-Corona #2 66 kV Subtransmission Source Line	156 (Note 2)
Proposed Chase-Circle City-Databank 66 kV Subtransmission Line	-959 (Note 2)
Proposed Mira Loma-Jefferson 66 kV Subtransmission Line	751
Proposed Mira Loma-Corona #2 66 kV Subtransmission Line	619
Existing Archibald-Chino-Corona 66 kV Subtransmission Line	569
Existing Chino-Cimgen-Kimball 66 kV Subtransmission Line	-313
Existing (RV) Mira Loma-Serrano #1 500 kV Transmission Line	841 (Note 3)
Existing Mira Loma-Serrano #2 500 kV Transmission Line	1499 (Note 3)
Existing Mira Loma-Walnut 230 kV Transmission Line	804 (Note 3)
Existing Mira Loma-Olinda 230 kV Transmission Line	1354 (Note 3)

Notes:

1. Subtransmission forecasted loading data is based upon scenarios representing load forecasts for the second quarter of 2021. The forecasting data is subject to change depending upon availability of generation, load increase, changes in load demand, and many other factors.
2. Load flow direction for the Chase-Circle City-Databank and Circle City-Corona #2 66 kV subtransmission lines are assumed to be in the opposite direction.
3. Peak transmission lines loading forecast for Year 2020.

Appendix D

Air Quality and GHG Calculations

ESA

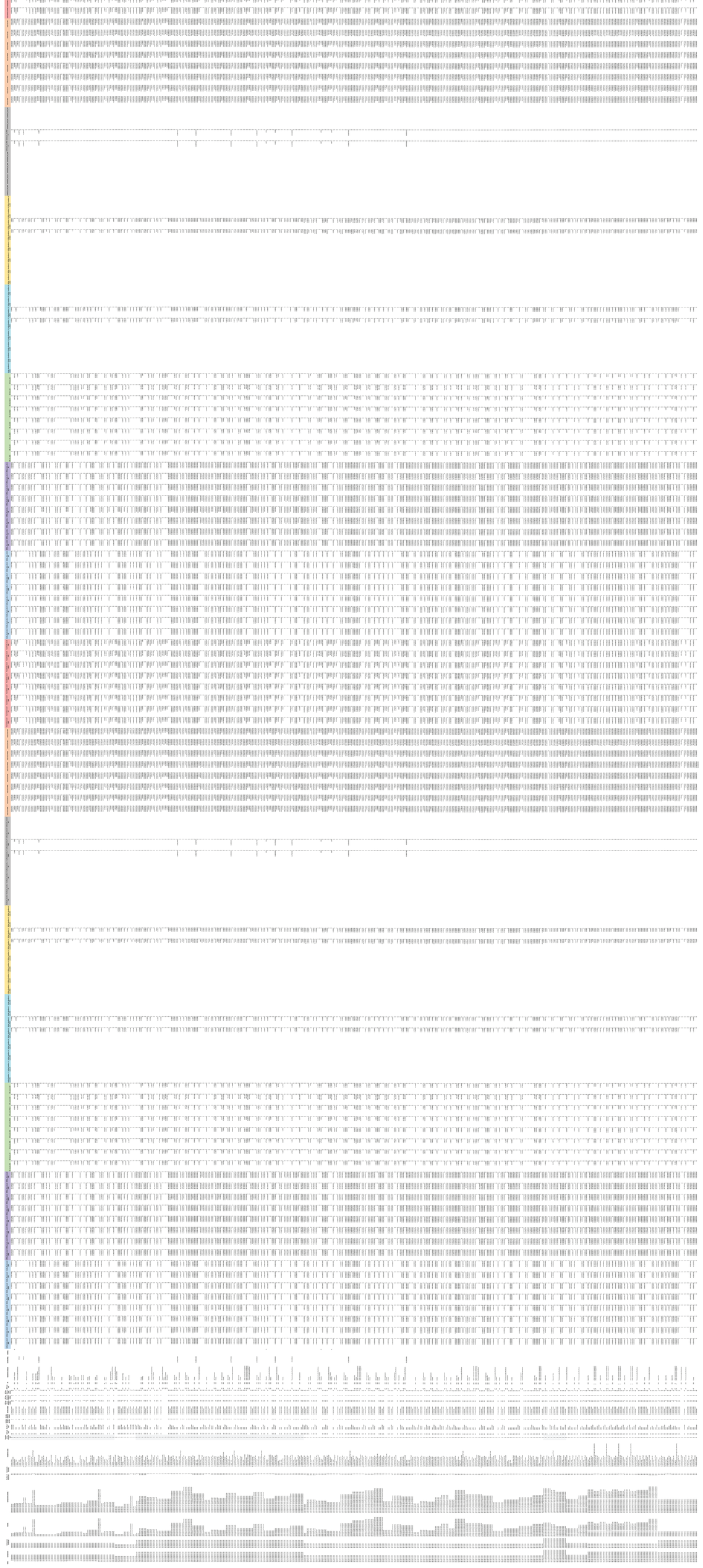
APPENDIX D
Air Quality and GHG Calculations

D.1: SCE Criteria Pollutant and Greenhouse Gas Emissions Estimates Adjusted by ESA

D.2: Health Risk Assessment

D.3: Fuel Use Estimates

APPENDIX D.1
SCE Criteria Pollutant and Greenhouse Gas Emissions Estimates Adjusted by ESA



Equipment Type	On Road Use?	On Road Type	Trips Per Year	Paved Distance (miles)	Unpaved Distance (miles)	Total Distance (miles)	On Road Exh ROG	CO	NOX	SOX	PM10	PM25	CO2	CH4	On Road Dust ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	On Road Total ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Source Line and Telecommunications Inspection	on	passenger	1	20	0	20	0.012022	0.107578	0.010259	0.000216	0.001889	0.001238	22.1255	0.00106					0.0152	0.00402			0.01	0.11	0.01	0.00	0.02	0.01	22.13	0.00
Mira Loma-Jefferson Inspection	on	passenger	1	40	10	50	0.030055	0.268946	0.025648	0.00054	0.004723	0.003096	55.31374	0.00265					14.74927	1.47698			0.03	0.27	0.03	0.00	14.75	1.48	55.31	0.00
Substation Site Visit	on	passenger	52	60	0	60	1.875413	16.78221	1.60046	0.033678	0.294725	0.193188	3451.578	0.165374					2.3712	0.62712			1.88	16.78	1.60	0.03	2.67	0.82	3451.58	0.17
Total																							**1.92**	**17.16**	**1.64**	**0.03**	**17.44**	**2.31**	**3529.02**	**0.17**

Component, Activity	Component Combined	1	2	3	4	5	6	7	Total_Unctrl_ROG	Total_Unctrl_CO	Total_Unctrl_NOX	Total_Unctrl_SOX	Total_Unctrl_PM10	Total_Unctrl_PM25	Total_Ctrl_PM25	Total_Ctrl_CO2	Total_Ctrl_CH4
Substation, Survey	Substation	Yes							0.084754243	0.758426673	0.072328467	0.001521987	0.525332281	0.077315603	0.077315603	155.9847592	0.007473639
Substation, Grading	Substation	Yes							4.374935603	26.7677606	50.32264763	0.081329917	11.50985012	3.950854546	3.294606546	8415.518772	1.038247799
Substation, Soil Import / Export	Substation	Yes							5.878374591	27.94760107	64.54248733	0.159746492	7.558320083	3.821083885	3.821083885	16654.92982	0.287252636
Substation, Fencing	Substation		Yes						0.401913214	3.900340414	2.355796976	0.007648344	0.861444948	0.245853071	0.245853071	785.9576386	0.096553352
Substation, Temporary Power-Pole Installation	Substation		Yes						0.387223302	2.644342839	4.636796012	0.010079642	0.640141497	0.193281506	0.231817506	1030.259412	0.280131767
Substation, Civil	Substation		Yes						4.74173586	35.52148545	47.22232642	0.082298196	9.20701585	2.790184451	2.384264451	8427.026334	1.940577889
Substation, MEER	Substation		Yes						0.248338497	2.079525784	0.55655357	0.004773277	1.155153329	0.195733421	0.195733421	490.8393879	0.020560551
Substation, Electrical	Substation		Yes	Yes	Yes	Yes			5.267900291	38.40081519	62.93988643	0.080072671	8.015689707	2.865179106	2.065135106	8184.284234	1.983968013
Substation, Wiring	Substation			Yes	Yes				0.690732062	3.868473012	9.132542102	0.013316182	2.132257479	0.442103151	0.426423151	1362.402312	0.311474087
Substation, Transformers	Substation			Yes					2.067844816	13.93974418	27.91173159	0.031157774	3.241216702	1.154010447	0.817206447	3190.743941	0.847141727
Substation, Maintenance Crew Equipment Check	Substation				Yes	Yes			0.145464729	1.301696843	0.12413822	0.002612205	1.016486043	0.14411444	0.14411444	267.7185229	0.012827096
Substation, Testing	Substation				Yes	Yes			0.2073641	1.710141597	0.572526578	0.003734088	1.071070109	0.169000723	0.169000723	384.7880795	0.015519583
Substation, Asphalting	Substation					Yes			1.741741107	10.82564452	10.17110252	0.017278337	1.494451283	0.75251148	0.65671948	1773.845179	0.340490369
ML Sub, Civil	ML Sub	Yes							1.014954673	7.329481945	9.873614732	0.019465039	2.006735164	0.571388529	0.547208529	1993.495406	0.438575893
ML Sub, Electrical	ML Sub		Yes						1.664602258	8.203797901	21.82596951	0.025001649	1.855203889	0.808771318	0.562931318	2558.981667	0.645868374
ML Sub, Maintenance Commission	ML Sub		Yes						0.072732365	0.650848422	0.06206911	0.001306103	0.508243021	0.07205722	0.07205722	133.8592614	0.006413548
ML Sub, Test	ML Sub		Yes						0.072732365	0.650848422	0.06206911	0.001306103	0.508243021	0.07205722	0.07205722	133.8592614	0.006413548
66 Subtrans Line, Survey	66 Subtrans Line	Yes							0.2073641	1.710141597	0.572526578	0.003734088	1.071070109	0.169000723	0.169000723	384.7880795	0.015519583
66 Subtrans Line, Marshaling Yard	66 Subtrans Line		Yes	Yes	Yes	Yes			0.667542628	3.597344162	6.100615978	0.008908388	1.742396044	0.44049929	0.30886129	916.3021803	0.143921729
66 Subtrans Line, ROW Clearing	66 Subtrans Line		Yes						1.863508263	11.43381692	20.48956805	0.027714043	2.309227823	0.93054444	0.65128844	2839.133938	0.715916
66 Subtrans Line, Road Work	66 Subtrans Line		Yes						2.005530263	12.44911292	22.29663205	0.031002043	2.379989823	0.99564644	0.72291244	3174.943872	0.81881
66 Subtrans Line, Guard Structure Installation	66 Subtrans Line					Yes			1.487114078	7.941268805	14.80180542	0.020648471	4.706064833	1.080331122	0.784863122	2099.245462	0.342214585
66 Subtrans Line, Wood/H-Frame/LWS Pole Removal	66 Subtrans Line					Yes			1.541176614	8.065624258	16.43347313	0.021521383	3.471986195	0.971581315	0.672193315	2185.40258	0.412374417
66 Subtrans Line, Install TSP Foundation	66 Subtrans Line		Yes	Yes					1.139129259	6.222745123	10.8968843	0.020324843	3.923810953	0.869937716	0.737053716	2099.667897	0.230153698
66 Subtrans Line, TSP Haul	66 Subtrans Line			Yes	Yes				0.743594659	3.929847492	7.074199848	0.009294723	2.194057982	0.523108495	0.356368495	956.2687016	0.154944952
66 Subtrans Line, TSP Assembly	66 Subtrans Line			Yes	Yes				1.292848884	7.628946452	9.757504299	0.015801528	3.434934872	0.862935965	0.575307965	1600.990271	0.200928086
66 Subtrans Line, TSP Erection	66 Subtrans Line			Yes	Yes				1.259494884	9.561828452	9.778864299	0.017013528	3.411924872	0.841767965	0.597249965	1724.431385	0.238746086
66 Subtrans Line, Install Wood/LWS Pole	66 Subtrans Line				Yes				1.612417299	7.994261516	19.83786628	0.025704736	4.316382745	1.05372002	0.83177202	2637.768785	0.582065337
66 Subtrans Line, Install Conductor	66 Subtrans Line				Yes	Yes			5.364124949	30.85561875	70.48799988	0.095553176	10.35867053	3.050685364	2.548095364	9796.625364	2.297459989
66 Subtrans Line, Guard Structure Removal	66 Subtrans Line					Yes			1.455169393	7.798151548	14.42992028	0.019761119	3.858073868	0.979156449	0.683688449	2006.665034	0.340735664
66 Subtrans Line, Restoration	66 Subtrans Line						Yes		1.335660313	7.797999715	12.73002534	0.022311086	7.410004877	1.735150801	1.622010801	2287.835249	0.495809792
66 Subtrans Line, Vault Installation	66 Subtrans Line				Yes				1.581429656	11.40399374	16.81419249	0.027222904	2.88874131	0.949846517	0.751810517	2803.421918	0.475397306
66 Subtrans Line, Duct Bank Installation	66 Subtrans Line				Yes				1.142104442	6.608063876	9.585635556	0.01940987	3.128816538	0.802220496	0.648746496	1978.48037	0.212329583
ML-J Line, Survey	ML-J Line	Yes							0.218182523	1.793096953	0.619431682	0.003929344	5.94150305	0.656452278	0.656452278	404.9984792	0.016210142
ML-J Line, Marshaling Yard	ML-J Line		Yes	Yes	Yes	Yes			0.716013086	3.842486727	6.599428766	0.010178551	9.087432653	1.194360496	1.062772496	1048.662116	0.146361289
ML-J Line, ROW Clearing	ML-J Line		Yes						1.973364163	11.95896139	21.90210389	0.029623773	13.73530083	2.638004554	2.347886554	3034.822202	0.766520202
ML-J Line, Road Work	ML-J Line		Yes						2.135226163	13.13887139	24.03318789	0.033373773	13.81725683	2.713404554	2.427658554	3417.833892	0.883876202
ML-J Line, Guard Structure Installation	ML-J Line					Yes			1.511953126	8.09778245	14.98599336	0.021209578	14.45219256	2.059300707	1.763832707	2157.546572	0.343654952
ML-J Line, Remove Exiting Conductor & GW	ML-J Line					Yes			4.681482606	27.09493077	57.87501534	0.074466599	28.0705186	4.622646783	3.939958783	7634.403914	1.824228999
ML-J Line, Wood/H-Frame/LWS Pole Removal	ML-J Line					Yes			1.593210348	8.412223204	16.79165661	0.022533223	12.43111818	1.879906635	1.580518635	2290.720139	0.41501236
ML-J Line, H-Frame Hybrid Pole Structure Removal	ML-J Line					Yes			2.171711248	14.17069845	19.03019374	0.025501687	12.80870106	2.192149682	1.639399682	2569.642083	0.436377554
ML-J Line, TSP Removal	ML-J Line					Yes			2.171711248	14.17069845	19.03019374	0.025501687	12.80870106	2.192149682	1.639399682	2569.642083	0.436377554
ML-J Line, TSP Foundation Removal	ML-J Line					Yes			1.350023593	8.398522893	11.042139	0.017496509	6.11976759	1.181350636	0.879108636	1746.509064	0.302904553
ML-J Line, Install TSP Foundations	ML-J Line		Yes	Yes					1.272202956	6.696125862	12.95582281	0.023221876	19.38860866	2.468544735	2.324798735	2399.520269	0.280372583
ML-J Line, TSP Haul	ML-J Line			Yes	Yes				0.75576434	4.01235681	7.150415882	0.00955653	7.471826121	1.052399566	0.885659566	983.4236049	0.155703921
ML-J Line, TSP Assembly	ML-J Line			Yes	Yes				1.656253794	9.482377823	13.00548625	0.019262708	14.16699463	2.091111486	1.687459486	1944.216145	0.263659652
ML-J Line, TSP Erection	ML-J Line			Yes	Yes				1.485837794	8.524393823	11.88496025	0.017738708	14.07810463	2.002221486	1.659013486	1799.883813	0.248421652
ML-J Line, Wood/LWS Pole Haul	ML-J Line				Yes				0.75576434	4.01235681	7.150415882	0.00955653	7.471826121	1.052399566	0.885659566	983.4236049	0.155703921
ML-J Line, Wood/LWS Pole Assembly	ML-J Line				Yes				1.656253794	9.482377823	13.00548625	0.019262708	14.16699463	2.091111486	1.687459486	1944.216145	0.263659652
ML-J Line, Hybrid Pole Haul	ML-J Line				Yes				0.75576434	4.01235681	7.150415882	0.00955653	7.471826121	1.052399566	0.885659566	983.4236049	0.155703921
ML-J Line, Install H-frame Hybrid Pole Structure	ML-J Line				Yes				1.634251511	8.130813133	20.00065353	0.026211391	13.24728453	1.950402608	1.728454608	2690.389794	0.583372442
ML-J Line, Transfer & Install Conductor	ML-J Line				Yes	Yes			5.434936023	31.29979991	71.01222126	0.097196987	39.59505132	5.986715775	5.484125775	9967.329894	2.301727771
ML-J Line, Guard Structure Removal	ML-J Line					Yes			1.477104379	7.941654533	14.58030048	0.020241557	12.78767012	1.87506584	1.57959784	2056.549741	0.342041584
ML-J Line, Restoration	ML-J Line							Yes	1.640989425	9.215365866	16.80279373	0.027490445	11.58272635	1.732688693	1.586962693	2817.853934	0.646103273
ML-J Line, Vault Installation	ML-J Line				Yes				1.753573824	12.22007126	18.92530976	0.030822042	19.16994341	2.636126788	2.427228788	3175.330884	0.528929725
ML-J Line, Duct Bank Installation	ML-J Line				Yes				1.17855974	6.81662016	9.905054454	0.02029365	15.97379151	2.078736025	1.925262025	2070.44709	0.21430774
ML-J Line, Install Underground Cable	ML-J Line						Yes		2.443173488	15.1353062	29.06521839	0.040465749	17.79922665	2.721790472	2.401870472	4150.891465	0.948813658
Telecommunications, Fiber Optic Cable Installation	Telecommunications			Yes					1.348954997	6.911278973	19.57278848	0.026914439	3.354541531	0.80537532	0.77401532	2760.271242	0.613666712
Telecommunications, Fiber Optic Cable Splicing	Telecommunications			Yes					0.443468444	2.703387405	2.654870263	0.006200966	2.311808665	0.369986584	0.369986584	539.8685984	0.035363548
Telecommunications, Underground Conduit	Telecommunications		Yes						0.711073508	4.058200112	7.038274855	0.01346141	1.812145376	0.447384656	0.403936656	1385.046465	0.221500947
Substation, Vault Installation	Substation		Yes						1.415428841	10.15996028	15.16147074	0.022317387	3.053772812	0.861165368	0.652877368	2291.029366	0.462331938
Substation, Trench/Duct Installation	Substation		Yes						0.64596725	3.60535876	6.669419381	0.012007072	1.72647882	0.412885398	0.369437398	1234.505946	0.216976202
ML Sub Linework, Location 1 - Construction Line	ML-J Line				Yes				1.187191703	5.795994979	18.61037039	0.023434027	2.750208924	0.683426742	0.652066742	2399.54915	0.603217975
ML Sub Linework, Location 1 - Stringing Crew	ML-J Line				Yes				0.402686628	2.527796162	1.780549978	0.005581188	1.583664044	0.29441729	0.29441729	576.2928243	0.039743729
ML Sub Linework, Location 2 - Construction Line	ML-J Line				Yes				1.331454244	7.086933997	18.73348267	0.026024644	2.955280041	0.746527344	0.715167344	2665.055124	0.615939062
ML Sub Linework, Location 2- Stringing Crew	ML-J Line				Yes				0.402686628	2.527796162	1.780549978	0.005581188	1.583664044	0.29441729	0.29441729	576.2928243	0.039743729
ML Sub Linework, Location 3 - Construction Line	ML-J Line				Yes				1.331454244	7.086933997	18.73348267	0.026024644	2.955280041	0.746527344	0.715167344	2665.055124	0.615939062
ML Sub Linework, Location 3 - Stringing Crew	ML-J Line				Yes				0.402686628	2.527796162	1.780549978	0.005581188	1.583664044	0.29441729	0.29441729	576.2928243	0.039743729
ML Sub Linework, Location 4 - Construction Line	ML-J Line				Yes				1.331454244	7.086933997	18.73348267	0.026024644	2.955280041	0.746527344	0.715167344	2665.055124	0.615939062
ML Sub Linework, Location 4 - Stringing Crew	ML-J Line				Yes				0.402686628	2.527796162	1.780549978	0.005581188	1.583664044	0.29441729	0.29441729	576.2928243	0.039743729
ML Sub Linework, Location 5 -Vault Installation	ML-J Line				Yes				1.472058054	10.41366815	15.82072167	0.023890421	2.715996426	0.857434379	0.649146379	2455.149216	0.464953661
ML Sub Linework, Location 5 -Trench/Duct Installation	ML-J Line				Yes				0.677412248	3.756981008	7.009548656	0.012856933	3.383707449	0.593637183	0.550189183	1323.095071	0.218532693
66 Subtrans Line, Location 1	66 Subtrans Line				Yes				3.363339977	16.82530434	45.51825512	0.060964224	9.809073228	2.145614815	2.039446815	6249.320619	1.466946924
66 Subtrans Line, Location 2	66 Subtrans Line				Yes				2.657747339	16.19968211	34.42039172	0.047297222	8.258834041	1.500012071	1.260364071	4851.858317	1.068105004

Component, Activity	Total_OnSite_Unctrl_ROG	Total_OnSite_Unctrl_CO	Total_OnSite_Unctrl_NOX	Total_OnSite_Unctrl_SOX	Total_OnSite_Unctrl_PM10	Total_OnSite_Unctrl_PM25	Total_OnSite_Unctrl_CO2	Total_OnSite_Unctrl_CH4
Substation, Survey	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
Substation, Grading	2.438120062	16.96243466	30.49871174	0.030008668	9.155846628	2.754430211	3069.369827	0.938006447
Substation, Soil Import / Export	0	0	0	0	0.50987475	0.1057518	0	0
Substation, Fencing	0.126430418	1.634205014	1.61904434	0.002411226	0.492633309	0.120377051	246.7336502	0.074794631
Substation, Temporary Power-Pole Installation	0.315092031	1.99887333	4.57523987	0.008784334	0.537605939	0.161731205	897.5058013	0.273771224
Substation, Civil	3.481492109	24.78074852	44.76680226	0.059077164	7.492960174	2.231077684	6040.198225	1.837150322
Substation, MEER	0.002904062	0.01301066	0.03380774	8.06684E-05	0.813147878	0.082358411	8.416402574	0.000134447
Substation, Electrical	4.21702534	29.40385863	60.97633002	0.060896593	6.592371704	2.403672199	6213.503864	1.897786277
Substation, Wiring	0.47433825	1.932064485	8.947873676	0.009430257	1.824650804	0.347452249	964.1433523	0.292392456
Substation, Transformers	1.834444929	12.11945802	27.02252829	0.026671454	2.948134435	1.047983717	2727.471936	0.830410933
Substation, Maintenance Crew Equipment Check	0.001202188	0.010757825	0.001025936	2.15885E-05	0.811414926	0.081013838	2.212549776	0.000106009
Substation, Testing	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
Substation, Asphalting	1.365086418	7.783933014	9.03471634	0.009939226	0.988705309	0.576761051	1017.704178	0.311026631
ML Sub, Civil	0.666332867	4.348363357	9.199376551	0.013194785	1.542980557	0.420985306	1348.881142	0.410468485
ML Sub, Electrical	1.382094449	5.745034344	21.39651621	0.01992356	1.469523248	0.686244256	2037.545211	0.622273855
ML Sub, Maintenance Commission	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
ML Sub, Test	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
66 Subtrans Line, Survey	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
66 Subtrans Line, Marshaling Yard	0.43515048	1.846571674	5.087342081	0.004159894	1.441721187	0.327799461	425.6671527	0.127179078
66 Subtrans Line, ROW Clearing	1.59505048	9.360309674	19.44551608	0.022317894	1.957285187	0.802119461	2282.122417	0.695993078
66 Subtrans Line, Road Work	1.73707248	10.37560567	21.25258008	0.025605894	2.028047187	0.867221461	2617.932351	0.798887078
66 Subtrans Line, Guard Structure Installation	1.094461054	5.085193337	12.83681377	0.01244679	4.207250678	0.886581766	1250.728393	0.315089827
66 Subtrans Line, Wood/H-Frame/LWS Pole Removal	1.207612574	5.539275663	15.02056569	0.014670896	3.034377003	0.808657078	1477.850541	0.387926749
66 Subtrans Line, Install TSP Foundation	0.537174605	2.332808993	6.748579561	0.006373231	3.15974377	0.541445462	652.4271579	0.191769973
66 Subtrans Line, TSP Haul	0.511202511	2.179075003	6.060925951	0.004546228	1.893383126	0.410458667	465.633674	0.138202302
66 Subtrans Line, TSP Assembly	0.855089734	4.118480715	8.317175102	0.00763557	2.883169115	0.669606613	758.6102872	0.168810971
66 Subtrans Line, TSP Erection	0.821735734	6.051362715	8.338535102	0.00884757	2.860159115	0.648438613	882.0514012	0.206628971
66 Subtrans Line, Install Wood/LWS Pole	1.249812636	5.337806323	18.08688143	0.018047565	3.844374777	0.872071674	1846.052719	0.556273196
66 Subtrans Line, Install Conductor	4.20417969	22.24078366	65.1734892	0.071286355	8.840111072	2.474190027	7288.72418	2.213723024
66 Subtrans Line, Guard Structure Removal	1.091556992	5.072182677	12.80300603	0.012366122	3.39365849	0.804131202	1242.311991	0.31495538
66 Subtrans Line, Restoration	0.965022898	4.879402687	11.41041042	0.015075119	6.928720496	1.563074512	1541.269739	0.468193709
66 Subtrans Line, Vault Installation	1.014532898	7.767278687	12.82073642	0.014181119	2.183534496	0.643752512	1449.920695	0.440205709
66 Subtrans Line, Duct Bank Installation	0.633288929	3.231562017	6.268334291	0.007981454	2.492407277	0.533574707	793.3071982	0.179826933
ML-J Line, Survey	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
ML-J Line, Marshaling Yard	0.438054543	1.859582333	5.121149821	0.004240562	2.254869065	0.410157872	434.0835553	0.127313525
ML-J Line, ROW Clearing	1.69008248	9.785681674	20.76390608	0.023903894	6.887601187	1.858095461	2444.235027	0.745665078
ML-J Line, Road Work	1.85194448	10.96559167	22.89499008	0.027653894	6.969557187	1.933495461	2827.246717	0.863021078
ML-J Line, Guard Structure Installation	1.094461054	5.085193337	12.83681377	0.01244679	4.2075241	0.886638476	1250.728393	0.315089827
ML-J Line, Remove Exiting Conductor & GW	3.838069209	20.84193199	53.98386312	0.056800461	7.534201885	2.271342566	5808.551678	1.763457946
ML-J Line, Wood/H-Frame/LWS Pole Removal	1.207662961	5.542751347	15.01436216	0.014657788	3.033996374	0.808326923	1476.482389	0.387926156
ML-J Line, H-Frame Hybrid Pole Structure Removal	1.743572898	10.77735869	17.56117642	0.017175119	2.533760496	1.028074512	1710.806675	0.404197709
ML-J Line, TSP Removal	1.743572898	10.77735869	17.56117642	0.017175119	2.533760496	1.028074512	1710.806675	0.404197709
ML-J Line, TSP Foundation Removal	1.135954418	6.701853014	10.30763034	0.013333226	0.982297309	0.599313051	1317.09136	0.286814631
ML-J Line, Install TSP Foundations	0.632206605	2.758180993	8.066969561	0.007959231	3.20275977	0.581021462	814.5397679	0.241441973
ML-J Line, TSP Haul	0.50975048	2.172569674	6.044022081	0.004505894	1.486809187	0.369279461	461.4254727	0.138135078
ML-J Line, TSP Assembly	1.193953734	5.792990715	11.4375391	0.01062557	3.061215115	0.840520613	1052.998959	0.230026971
ML-J Line, TSP Erection	1.023537734	4.835006715	10.3710131	0.00910157	2.972325115	0.751630613	908.6666272	0.214788971
ML-J Line, Wood/LWS Pole Haul	0.50975048	2.172569674	6.044022081	0.004505894	1.486809187	0.369279461	461.4254727	0.138135078
ML-J Line, Wood/LWS Pole Assembly	1.193953734	5.792990715	11.4375391	0.01062557	3.061215115	0.840520613	1052.998959	0.230026971
ML-J Line, Hybrid Pole Haul	0.50975048	2.172569674	6.044022081	0.004505894	1.486809187	0.369279461	461.4254727	0.138135078
ML-J Line, Install H-frame Hybrid Pole Structure	1.249812636	5.337806323	18.08688143	0.018047565	3.841808881	0.871539488	1846.052719	0.556273196
ML-J Line, Transfer & Install Conductor	4.207083752	22.25379432	65.20729694	0.071367024	9.653258949	2.556548438	7297.140583	2.213857471
ML-J Line, Guard Structure Removal	1.091556992	5.072182677	12.80300603	0.012366122	3.390548313	0.803486128	1242.311991	0.31495538
ML-J Line, Restoration	1.250118898	6.155518687	15.36558042	0.019833119	2.170468496	0.665402512	2027.607569	0.617209709
ML-J Line, Vault Installation	1.112468961	8.205661347	14.17293416	0.015847788	2.992448374	0.755886923	1620.449707	0.490012156
ML-J Line, Duct Bank Installation	0.633288929	3.231562017	6.268334291	0.007981454	2.338936435	0.501743717	793.3071982	0.179826933
ML-J Line, Install Underground Cable	1.919201085	11.31261467	26.48054564	0.029477125	4.981646129	1.254467744	3014.314773	0.912197051
Telecommunications, Fiber Optic Cable Installation	0.949276961	3.862575347	17.91509616	0.018871788	2.838858374	0.614574923	1929.541705	0.584706156
Telecommunications, Fiber Optic Cable Splicing	0.28119209	1.459057069	1.951293702	0.003272128	2.128854547	0.302133253	236.7126028	0.025005154
Telecommunications, Underground Conduit	0.38453448	1.724479674	5.318068081	0.006451894	1.391405187	0.281511461	659.7068927	0.198889078
Substation, Vault Installation	1.016758543	7.180770333	13.37970782	0.014012562	2.530497065	0.663741872	1432.936807	0.433359525
Substation, Trench/Duct Installation	0.38453448	1.724479674	5.318068081	0.006451894	1.391405187	0.281511461	659.7068927	0.198889078
ML Sub Linework, Location 1 - Construction Line	0.947774543	3.852594333	17.90439582	0.018844562	2.432665065	0.573725872	1926.701655	0.584639525
ML Sub Linework, Location 1 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 2 - Construction Line	0.947774543	3.852594333	17.90439582	0.018844562	2.432665065	0.573725872	1926.701655	0.584639525
ML Sub Linework, Location 2- Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 3 - Construction Line	0.947774543	3.852594333	17.90439582	0.018844562	2.432665065	0.573725872	1926.701655	0.584639525
ML Sub Linework, Location 3 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 4 - Construction Line	0.947774543	3.852594333	17.90439582	0.018844562	2.432665065	0.573725872	1926.701655	0.584639525
ML Sub Linework, Location 4 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 5 -Vault Installation	1.015306511	7.174265003	13.36280395	0.013972228	2.123923126	0.622562667	1428.728606	0.433292302
ML Sub Linework, Location 5 -Trench/Duct Installation	0.386938856	1.745995324	5.320119952	0.006495071	3.014235039	0.443539138	664.1319923	0.199101096
66 Subtrans Line, Location 1	2.593024526	10.85800369	42.54094788	0.045685606	8.81210569	1.782738128	4672.025573	1.410370285
66 Subtrans Line, Location 2	1.961578636	11.01687832	31.25649943	0.032789565	4.150394881	1.155439488	3352.590211	1.017865196

Component, Activity	Total_OnSite_Ctrl_ROG	Total_OnSite_Ctrl_CO	Total_OnSite_Ctrl_NOX	Total_OnSite_Ctrl_SOX	Total_OnSite_Ctrl_PM10	Total_OnSite_Ctrl_PM25	Total_OnSite_Ctrl_CO2	Total_OnSite_Ctrl_CH4
Substation, Survey	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
Substation, Grading	0.733928062	16.71311466	14.11881574	0.030008668	8.394294628	2.098182211	3069.369827	0.938006447
Substation, Soil Import / Export	0	0	0	0	0.50987475	0.1057518	0	0
Substation, Fencing	0.126430418	1.634205014	1.61904434	0.002411226	0.492633309	0.120377051	246.7336502	0.074794631
Substation, Temporary Power-Pole Installation	0.218388031	4.70676133	4.21097587	0.008784334	0.565661939	0.200267205	897.5064253	0.273771224
Substation, Civil	1.665592109	34.22279652	29.81791026	0.059077164	6.963772174	1.825157684	6040.199473	1.837150322
Substation, MEER	0.002904062	0.01301066	0.03380774	8.06684E-05	0.813147878	0.082358411	8.416402574	0.000134447
Substation, Electrical	1.54769334	33.32017063	29.74673802	0.060896593	5.625963704	1.603628199	6213.503864	1.897786277
Substation, Wiring	0.23373825	4.999160485	4.474417676	0.009430257	1.792962804	0.331772249	964.1433523	0.292392456
Substation, Transformers	0.659746929	14.46565002	12.79613829	0.026671454	2.538052435	0.711179717	2727.471936	0.830410933
Substation, Maintenance Crew Equipment Check	0.001202188	0.010757825	0.001025936	2.15885E-05	0.811414926	0.081013838	2.212549776	0.000106009
Substation, Testing	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
Substation, Asphalting	1.062318418	8.501365014	6.74553234	0.009939226	0.873617309	0.480969051	1017.704178	0.311026631
ML Sub, Civil	0.394468867	7.394171357	6.771604551	0.013194785	1.499800557	0.396805306	1348.881454	0.410468485
ML Sub, Electrical	0.491634449	10.60467034	9.47553221	0.01992356	1.171143248	0.440404256	2037.545211	0.622273855
ML Sub, Maintenance Commission	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
ML Sub, Test	0.000601094	0.005378913	0.000512968	1.07942E-05	0.405707463	0.040506919	1.106274888	5.30045E-05
66 Subtrans Line, Survey	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
66 Subtrans Line, Marshaling Yard	0.10395648	2.179951674	1.969180081	0.004159894	1.292345187	0.196211461	425.6671527	0.127179078
66 Subtrans Line, ROW Clearing	0.54939448	11.83095167	10.58084208	0.022317894	1.618997187	0.522863461	2282.122417	0.695993078
66 Subtrans Line, Road Work	0.63061448	14.14360167	12.15106208	0.025605894	1.690621187	0.594487461	2617.932351	0.798887078
66 Subtrans Line, Guard Structure Installation	0.297111054	6.776413337	5.629365772	0.01244679	3.882382678	0.591113766	1250.728393	0.315089827
66 Subtrans Line, Wood/H-Frame/LWS Pole Removal	0.350112574	7.997269663	6.694753691	0.014670896	2.701587003	0.509269078	1477.850541	0.387926749
66 Subtrans Line, Install TSP Foundation	0.160638605	3.308236993	3.020359561	0.006373231	3.00571577	0.408561462	652.4271579	0.191769973
66 Subtrans Line, TSP Haul	0.114032511	2.373319003	2.152825951	0.004546228	1.705247126	0.243718667	465.633674	0.138202302
66 Subtrans Line, TSP Assembly	0.178039734	4.276152715	3.346455102	0.00763557	2.574145115	0.381978613	758.6102872	0.168810971
66 Subtrans Line, TSP Erection	0.207961734	4.924446715	3.924927102	0.00884757	2.596087115	0.403920613	882.0514012	0.206628971
66 Subtrans Line, Install Wood/LWS Pole	0.448680636	9.524236323	8.578049431	0.018047565	3.575264777	0.650123674	1846.052719	0.556273196
66 Subtrans Line, Install Conductor	1.76009769	37.71846966	33.8172732	0.071286355	8.183159072	1.971600027	7288.72418	2.213723024
66 Subtrans Line, Guard Structure Removal	0.294206992	6.763402677	5.595558031	0.012366122	3.06879049	0.508663202	1242.311991	0.31495538
66 Subtrans Line, Restoration	0.373378898	7.994748687	7.159562421	0.015075119	6.782312496	1.449934512	1541.269739	0.468193709
66 Subtrans Line, Vault Installation	0.351946898	8.359832687	6.745268421	0.014181119	1.944644496	0.445716512	1449.920695	0.440205709
66 Subtrans Line, Duct Bank Installation	0.185774929	4.463888017	3.521484291	0.007981454	2.328613277	0.380100707	793.3071982	0.179826933
ML-J Line, Survey	0.003004836	0.019962028	0.021400681	5.4451E-05	0.812386619	0.081698101	5.680100304	0.000133262
ML-J Line, Marshaling Yard	0.106860543	2.192962333	2.002987821	0.004240562	2.105493065	0.278569872	434.0835553	0.127313525
ML-J Line, ROW Clearing	0.58854848	12.67928967	11.33782208	0.023903894	6.535011187	1.567977461	2444.235027	0.745665078
ML-J Line, Road Work	0.68088048	15.23268567	13.12286008	0.027653894	6.614783187	1.647749461	2827.246717	0.863021078
ML-J Line, Guard Structure Installation	0.297111054	6.776413337	5.629365772	0.01244679	3.8826561	0.591170476	1250.728393	0.315089827
ML-J Line, Remove Exiting Conductor & GW	1.401505209	30.02145199	26.92516912	0.056800461	6.704079885	1.588654566	5808.551678	1.763457946
ML-J Line, Wood/H-Frame/LWS Pole Removal	0.350162961	8.000745347	6.688550161	0.014657788	2.701206374	0.508938923	1476.482389	0.387926156
ML-J Line, H-Frame Hybrid Pole Structure Removal	0.397098898	9.626386687	7.618356421	0.017175119	1.936802496	0.475324512	1710.806675	0.404197709
ML-J Line, TSP Removal	0.397098898	9.626386687	7.618356421	0.017175119	1.936802496	0.475324512	1710.806675	0.404197709
ML-J Line, TSP Foundation Removal	0.301188418	8.173607014	5.80466034	0.013333226	0.662415309	0.297071051	1317.09136	0.286814631
ML-J Line, Install TSP Foundations	0.199792605	4.156574993	3.777339561	0.007959231	3.03442977	0.437275462	814.5397679	0.241441973
ML-J Line, TSP Haul	0.11258048	2.366813674	2.135922081	0.004505894	1.298673187	0.202539461	461.4254727	0.138135078
ML-J Line, TSP Assembly	0.244573734	5.997124715	4.632809102	0.01062557	2.629035115	0.436868613	1052.998959	0.230026971
ML-J Line, TSP Erection	0.214097734	5.057426715	4.043593102	0.00910157	2.600589115	0.408422613	908.6666272	0.214788971
ML-J Line, Wood/LWS Pole Haul	0.11258048	2.366813674	2.135922081	0.004505894	1.298673187	0.202539461	461.4254727	0.138135078
ML-J Line, Wood/LWS Pole Assembly	0.244573734	5.997124715	4.632809102	0.01062557	2.629035115	0.436868613	1052.998959	0.230026971
ML-J Line, Hybrid Pole Haul	0.11258048	2.366813674	2.135922081	0.004505894	1.298673187	0.202539461	461.4254727	0.138135078
ML-J Line, Install H-frame Hybrid Pole Structure	0.448680636	9.524236323	8.578049431	0.018047565	3.572698881	0.649591488	1846.052719	0.556273196
ML-J Line, Transfer & Install Conductor	1.763001752	37.73148032	33.85108094	0.071367024	8.996306949	2.053958438	7297.140583	2.213857471
ML-J Line, Guard Structure Removal	0.294206992	6.763402677	5.595558031	0.012366122	3.065680313	0.508018128	1242.311991	0.31495538
ML-J Line, Restoration	0.490840898	10.53976269	9.430502421	0.019833119	1.981154496	0.519676512	2027.607569	0.617209709
ML-J Line, Vault Installation	0.394004961	9.221181347	7.536056161	0.015847788	2.739256374	0.546988923	1620.449707	0.490012156
ML-J Line, Duct Bank Installation	0.185774929	4.463888017	3.521484291	0.007981454	2.175142435	0.348269717	793.3071982	0.179826933
ML-J Line, Install Underground Cable	0.728363085	15.53641667	13.95565364	0.029477125	4.588394129	0.934547744	3014.314773	0.912197051
Telecommunications, Fiber Optic Cable Installation	0.468076961	9.996767347	8.968184161	0.018871788	2.775482374	0.583214923	1929.541705	0.584706156
Telecommunications, Fiber Optic Cable Splicing	0.28119209	1.459057069	1.951293702	0.003272128	2.128854547	0.302133253	236.7126028	0.025005154
Telecommunications, Underground Conduit	0.16102248	3.416343674	3.072428081	0.006451894	1.334197187	0.238063461	659.7068927	0.198889078
Substation, Vault Installation	0.348054543	7.418842333	6.666083821	0.014012562	2.282377065	0.455453872	1432.936807	0.433359525
Substation, Trench/Duct Installation	0.16102248	3.416343674	3.072428081	0.006451894	1.334197187	0.238063461	659.7068927	0.198889078
ML Sub Linework, Location 1 - Construction Line	0.466574543	9.986786333	8.957483821	0.018844562	2.369289065	0.542365872	1926.701655	0.584639525
ML Sub Linework, Location 1 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 2 - Construction Line	0.466574543	9.986786333	8.957483821	0.018844562	2.369289065	0.542365872	1926.701655	0.584639525
ML Sub Linework, Location 2- Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 3 - Construction Line	0.466574543	9.986786333	8.957483821	0.018844562	2.369289065	0.542365872	1926.701655	0.584639525
ML Sub Linework, Location 3 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 4 - Construction Line	0.466574543	9.986786333	8.957483821	0.018844562	2.369289065	0.542365872	1926.701655	0.584639525
ML Sub Linework, Location 4 - Stringing Crew	0.17029448	0.777023674	0.767276081	0.000832694	1.282989187	0.181767461	85.65779673	0.023001078
ML Sub Linework, Location 5 -Vault Installation	0.346602511	7.412337003	6.649179951	0.013972228	1.875803126	0.414274667	1428.728606	0.433292302
ML Sub Linework, Location 5 -Trench/Duct Installation	0.163426856	3.437859324	3.074479952	0.006495071	2.957027039	0.400091138	664.1319923	0.199101096
66 Subtrans Line, Location 1	1.407112526	24.81825169	22.40148388	0.045685606	8.62814569	1.676570128	4672.025573	1.410370285
66 Subtrans Line, Location 2	0.811674636	17.38914232	15.59596343	0.032789565	3.838898881	0.915791488	3352.590211	1.017865196

Component	Activity Group	Filter	Total_Unctrl_ROG	Total_Unctrl_CO	Total_Unctrl_NOX	Total_Unctrl_SOX	Total_Unctrl_PM10	Total_Unctrl_PM25	Total_Unctrl_CO2	Total_Unctrl_CH4	Total_Ctrl_ROG	Total_Ctrl_CO	Total_Ctrl_NOX	Total_Ctrl_SOX	Total_Ctrl_PM10	Total_Ctrl_PM25	Total_Ctrl_CO2	Total_Ctrl_CH4	Total_OnSite_Unctrl_ROG	Total_OnSite_Unctrl_CO	Total_OnSite_Unctrl_NOX	Total_OnSite_Unctrl_SOX	Total_OnSite_Unctrl_PM10	Total_OnSite_Unctrl_PM25	Total_OnSite_Unctrl_CO2	Total_OnSite_Unctrl_CH4	Total_OnSite_Ctrl_ROG	Total_OnSite_Ctrl_CO	Total_OnSite_Ctrl_NOX	Total_OnSite_Ctrl_SOX	Total_OnSite_Ctrl_PM10	Total_OnSite_Ctrl_PM25	Total_OnSite_Ctrl_CO2	Total_OnSite_Ctrl_CH4
Substation		1 On	10.34	55.47	114.94	0.24	19.59	7.85	25226.43	1.333	8.634	55.224	98.558	0.243	18.832	7.193	25226.433	1.333	2.44	16.97	30.50	0.03	10.07	2.90	3070.48	0.94	0.735	16.718	14.119	0.030	9.310	2.244	3070.476	0.938
Substation		2 On	13.11	96.31	139.54	0.22	24.66	7.56	22443.90	5.001	7.634	114.308	84.040	0.219	22.887	6.145	22443.902	5.001	9.54	66.74	130.67	0.15	19.85	5.94	15499.00	4.72	4.070	84.732	75.167	0.152	18.078	4.525	15499.004	4.716
Substation		3 On	8.03	56.21	99.98	0.12	13.39	4.46	12737.43	3.143	3.942	65.539	50.055	0.125	11.981	3.309	12737.430	3.143	6.53	43.46	96.95	0.10	11.37	3.80	9905.12	3.02	2.441	52.785	47.017	0.097	9.957	2.647	9905.119	3.021
Substation		4 On	6.31	45.28	72.77	0.10	12.24	3.62	10199.19	2.324	3.402	52.265	37.066	0.100	11.237	2.805	10199.193	2.324	4.70	31.37	69.95	0.07	10.04	2.91	7185.54	2.19	1.786	38.350	34.244	0.070	9.043	2.098	7185.540	2.190
Substation		5 On	7.36	52.24	73.81	0.10	11.60	3.93	10610.64	2.353	4.390	56.872	40.289	0.104	10.516	3.035	10610.636	2.353	5.59	37.22	70.03	0.07	9.20	3.14	7239.10	2.21	2.614	41.852	36.515	0.071	8.123	2.247	7239.101	2.209
Substation		6	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Substation		7	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		1 On	1.01	7.33	9.87	0.02	2.01	0.57	1993.50	0.439	0.743	10.375	7.446	0.019	1.964	0.547	1993.495	0.439	0.67	4.35	9.20	0.01	1.54	0.42	1348.88	0.41	0.394	7.394	6.772	0.013	1.500	0.397	1348.881	0.410
Mt. Sub		2 On	1.81	9.51	21.95	0.03	2.87	0.95	2826.70	0.659	0.920	14.365	10.029	0.028	2.573	0.707	2826.700	0.659	1.38	5.76	21.40	0.02	2.28	0.77	2039.76	0.62	0.493	10.615	9.477	0.020	1.983	0.521	2039.758	0.622
Mt. Sub		3	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		4	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		5	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		6	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		7	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
66 Subtrans Line		1 On	0.21	1.71	0.57	0.00	1.07	0.17	384.79	0.016	0.207	1.710	0.573	0.004	1.071	0.169	384.788	0.016	0.00	0.02	0.02	0.00	0.81	0.08	5.68	0.00	0.003	0.020	0.021	0.000	0.812	0.082	5.680	0.000
66 Subtrans Line		2 On	5.68	33.70	59.78	0.09	10.36	3.24	9030.05	1.909	2.816	41.250	34.971	0.088	9.376	2.420	9030.048	1.909	4.30	23.92	52.53	0.06	8.59	2.54	5978.15	1.81	1.445	31.463	27.721	0.058	7.608	1.722	5978.149	1.814
66 Subtrans Line		3 On	5.10	30.94	43.61	0.07	14.71	3.54	7297.66	0.969	2.707	31.475	23.469	0.071	13.642	2.575	7297.660	0.969	3.16	16.53	34.55	0.03	12.24	2.60	3184.39	0.83	0.765	17.062	14.414	0.032	11.174	1.634	3184.390	0.833
66 Subtrans Line		4 On	19.68	114.60	229.38	0.33	49.54	12.17	33515.47	6.841	10.974	155.985	127.478	0.327	43.610	9.918	33515.468	6.841	14.28	74.65	203.95	0.22	39.40	9.52	21934.58	6.46	5.569	116.028	102.053	0.215	36.667	7.266	21934.583	6.459
66 Subtrans Line		5 On	10.52	58.26	122.25	0.17	24.14	6.52	17004.24	3.537	5.288	79.910	65.039	0.166	22.348	4.998	17004.241	3.537	8.03	39.78	110.92	0.11	20.92	5.30	11685.28	3.36	2.805	61.436	53.706	0.115	19.128	3.777	11685.282	3.359
66 Subtrans Line		6 On	1.34	7.80	12.73	0.02	7.41	1.74	2287.84	0.496	0.744	10.913	8.479	0.022	7.264	1.622	2287.835	0.496	0.97	4.88	11.41	0.02	6.93	1.56	1541.27	0.47	0.373	7.995	7.160	0.015	6.782	1.450	1541.270	0.468
66 Subtrans Line		7	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt.-J Line		1 On	0.22	1.79	0.62	0.00	5.94	0.66	405.00	0.016	0.218	1.793	0.619	0.004	5.942	0.656	404.998	0.016	0.00	0.02	0.02	0.00	0.81	0.08	5.68	0.00	0.003	0.020	0.021	0.000	0.812	0.082	5.680	0.000
Mt.-J Line		2 On	6.10	35.64	65.49	0.10	56.03	9.01	9900.84	2.077	3.061	44.529	38.885	0.096	55.004	8.163	9900.838	2.077	4.61	25.37	56.85	0.06	19.31	4.78	6520.11	1.98	1.576	34.262	30.241	0.064	18.290	3.932	6520.105	1.977
Mt.-J Line		3 On	5.89	32.56	51.60	0.08	64.19	8.81	8175.71	1.095	2.966	34.910	27.202	0.080	62.883	7.620	8175.706	1.095	3.80	17.42	40.99	0.04	12.98	2.95	3671.71	0.95	0.878	19.771	16.593	0.036	11.668	1.764	3671.714	0.952
Mt.-J Line		4 On	26.72	153.17	290.55	0.43	185.95	28.74	44068.88	8.311	15.266	203.100	160.832	0.430	182.100	25.493	44068.877	8.311	18.46	91.27	253.55	0.26	54.64	12.72	26532.27	7.72	6.997	141.191	123.829	0.261	50.786	9.478	26532.273	7.719
Mt.-J Line		5 On	21.11	123.43	230.95	0.31	148.16	23.18	32041.01	6.549	9.916	153.430	122.285	0.314	144.028	19.569	32041.006	6.549	16.50	88.91	210.40	0.22	36.12	10.39	22248.00	6.22	5.308	118.913	101.734	0.220	31.991	6.777	22248.003	6.218
Mt.-J Line		6 On	2.44	15.14	29.07	0.04	17.80	2.72	4150.89	0.949	1.252	19.359	16.540	0.040	17.406	2.402	4150.891	0.949	1.92	11.31	26.48	0.03	4.98	1.25	3014.31	0.91	0.728	15.536	13.956	0.029	4.588	0.935	3014.315	0.912
Mt.-J Line		7 On	1.64	9.22	16.80	0.03	11.58	1.73	2817.85	0.646	0.882	13.600	10.868	0.027	11.393	1.587	2817.854	0.646	1.25	6.16	15.37	0.02	2.17	0.67	2027.61	0.62	0.491	10.540	9.431	0.020	1.981	0.520	2027.608	0.617
Telecommunications		1	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		2 On	0.71	4.06	7.04	0.01	1.81	0.45	1385.05	0.222	0.488	5.750	4.793	0.013	1.755	0.404	1385.046	0.222	0.38	1.72	5.32	0.01	1.39	0.28	659.71	0.20	0.161	3.416	3.072	0.006	1.334	0.238	659.707	0.199
Telecommunications		3 On	1.79	9.61	22.23	0.03	5.67	1.18	3300.14	0.649	1.311	15.749	13.281	0.033	5.603	1.144	3300.140	0.649	1.23	5.32	19.87	0.02	4.97	0.92	2166.25	0.61	0.749	11.456	10.919	0.022	4.904	0.885	2166.254	0.610
Telecommunications		4	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		5	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		6	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		7	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Substation		On	**13.109**	**96.312**	**139.542**	**0.243**	**24.660**	**7.849**	**25226.433**	**5.001**	**8.634**	**114.308**	**98.558**	**0.243**	**22.887**	**7.193**	**25226.433**	**5.001**	**9.54**	**66.74**	**130.67**	**0.15**	**19.85**	**5.94**	**15499.00**	**4.72**	**4.070**	**84.732**	**75.167**	**0.152**	**18.078**	**4.525**	**15499.004**	**4.716**
Mt. Sub		On	**1.810**	**9.505**	**21.950**	**0.028**	**2.872**	**0.953**	**2826.700**	**0.659**	**0.920**	**14.365**	**10.029**	**0.028**	**2.573**	**0.707**	**2826.700**	**0.659**	**1.38**	**5.76**	**21.40**	**0.02**	**2.28**	**0.77**	**2039.76**	**0.62**	**0.493**	**10.615**	**9.477**	**0.020**	**1.983**	**0.521**	**2039.758**	**0.622**
66 Subtrans Line		On	**19.685**	**114.605**	**229.376**	**0.327**	**49.544**	**12.170**	**33515.468**	**6.841**	**10.974**	**155.985**	**127.478**	**0.327**	**43.610**	**9.918**	**33515.468**	**6.841**	**14.28**	**74.65**	**203.95**	**0.22**	**39.40**	**9.52**	**21934.58**	**6.46**	**5.569**	**116.028**	**102.053**	**0.215**	**36.667**	**7.266**	**21934.583**	**6.459**
Mt.-J Line		On	**26.725**	**153.175**	**290.553**	**0.430**	**185.951**	**28.740**	**44068.877**	**8.311**	**15.266**	**203.100**	**160.832**	**0.430**	**182.100**	**25.493**	**44068.877**	**8.311**	**18.46**	**91.27**	**253.55**	**0.26**	**54.64**	**12.72**	**26532.27**	**7.72**	**6.997**	**141.191**	**123.829**	**0.261**	**50.786**	**9.478**	**26532.273**	**7.719**
Telecommunications		On	**1.792**	**9.615**	**22.228**	**0.033**	**5.666**	**1.175**	**3300.140**	**0.649**	**1.311**	**15.749**	**13.281**	**0.033**	**5.603**	**1.144**	**3300.140**	**0.649**	**1.23**	**5.32**	**19.87**	**0.02**	**4.97**	**0.92**	**2166.25**	**0.61**	**0.749**	**11.456**	**10.919**	**0.022**	**4.904**	**0.885**	**2166.254**	**0.610**
Worst-Case		On	**63.120**	**383.212**	**703.649**	**1.061**	**268.693**	**50.888**	**108937.618**	**21.461**	**37.105**	**503.507**	**410.177**	**1.061**	**256.773**	**44.455**	**108937.618**	**21.461**	**44.89**	**243.73**	**629.43**	**0.67**	**121.14**	**29.87**	**68171.87**	**20.13**	**17.878**	**364.022**	**321.445**	**0.669**	**112.417**	**22.676**	**68171.872**	**20.127**

Component	Activity Group	Filter	Total_OnSite_Ctrl_ROG	Total_OnSite_Ctrl_CO	Total_OnSite_Ctrl_NOX	Total_OnSite_Ctrl_SOX	Total_OnSite_Ctrl_PM10	Total_OnSite_Ctrl_PM25	Total_OnSite_Ctrl_CO2	Total_OnSite_Ctrl_CH4
Substation		1 On	0.735	16.718	14.119	0.030	9.310	2.244	3070.476	0.938
Substation		2 On	4.070	84.732	75.167	0.152	18.078	4.525	15499.004	4.716
Substation		3 On	2.441	52.785	47.017	0.097	9.957	2.647	9905.119	3.021
Substation		4 On	1.786	38.350	34.244	0.070	9.043	2.098	7185.540	2.190
Substation		5 On	2.614	41.852	36.515	0.071	8.123	2.247	7239.101	2.209
Substation		6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Substation		7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		1 On	0.394	7.394	6.772	0.013	1.500	0.397	1348.881	0.410
Mt. Sub		2 On	0.493	10.615	9.477	0.020	1.983	0.521	2039.758	0.622
Mt. Sub		3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt. Sub		7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
66 Subtrans Line		1 On	0.003	0.020	0.021	0.000	0.812	0.082	5.680	0.000
66 Subtrans Line		2 On	1.445	31.463	27.721	0.058	7.608	1.722	5978.149	1.814
66 Subtrans Line		3 On	0.765	17.062	14.414	0.032	11.174	1.634	3184.390	0.833
66 Subtrans Line		4 On	5.569	116.028	102.053	0.215	36.667	7.266	21934.583	6.459
66 Subtrans Line		5 On	2.805	61.436	53.706	0.115	19.128	3.777	11685.282	3.359
66 Subtrans Line		6 On	0.373	7.995	7.160	0.015	6.782	1.450	1541.270	0.468
66 Subtrans Line		7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mt.-J Line		1 On	0.003	0.020	0.021	0.000	0.812	0.082	5.680	0.000
Mt.-J Line		2 On	1.576	34.262	30.241	0.064	18.290	3.932	6520.105	1.977
Mt.-J Line		3 On	0.878	19.771	16.593	0.036	11.668	1.764	3671.714	0.952
Mt.-J Line		4 On	6.997	141.191	123.829	0.261	50.786	9.478	26532.273	7.719
Mt.-J Line		5 On	5.308	118.913	101.734	0.220	31.991	6.777	22248.003	6.218
Mt.-J Line		6 On	0.728	15.536	13.956	0.029	4.588	0.935	3014.315	0.912
Mt.-J Line		7 On	0.491	10.540	9.431	0.020	1.981	0.520	2027.608	0.617
Telecommunications		1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		2 On	0.161	3.416	3.072	0.006	1.334	0.238	659.707	0.199
Telecommunications		3 On	0.749	11.456	10.919	0.022	4.904	0.885	2166.254	0.610
Telecommunications		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Telecommunications		7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Substation		On	**4.070**	**84.732**	**75.167**	**0.152**	**18.078**	**4.525**	**15499.004**	**4.716**
Mt. Sub		On	**0.493**	**10.615**	**9.477**	**0.020**	**1.983**	**0.521**	**2039.758**	**0.622**
66 Subtrans Line		On	**5.569**	**116.028**	**102.053**	**0.215**	**36.667**	**7.266**	**21934.583**	**6.459**
Mt.-J Line		On	**6.997**	**141.191**	**123.829**	**0.261**	**50.786**	**9.478**	**26532.273**	**7.719**
Telecommunications		On	**0.749**	**11.456**	**10.919**	**0.022**	**4.904**	**0.885**	**2166.254**	**0.610**
Worst-Case		On	**17.878**	**364.022**	**321.445**	**0.669**	**112.417**	**22.676**	**68171.872**	**20.127**

Note: "Uncontrolled" emissions adjusted by ESA to represent "unmitigated" emissions; includes no exhaust controls, but includes dust controls associated with APM AIR-01.

LST Analysis	Unctrl CO	Unctrl NOX	Unctrl PM10	Unctrl PM2.5	Ctrl CO	Ctrl NOX	Ctrl PM10	Ctrl PM2.5
Substation	66.7	130.7	19.9	5.9	84.7	75.2	18.1	4.5
Distance (m)	100	100	100	100	100	100	100	100
Size	5	5	5	5	5	5	5	5
Threshold	**3964**	**378**	**58**	**18**	**3964**	**378**	**58**	**18**
Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
ML Sub	5.8	21.4	2.3	0.8	10.6	9.5	2.0	0.5
Distance (m)	500	500	500	500	500	500	500	500
Size	5	5	5	5	5	5	5	5
Threshold	**22490**	**778**	**228**	**113**	**22490**	**778**	**228**	**113**
Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
66 Subtrans Line	22.2	65.2	8.8	2.5	37.7	33.8	8.6	2.0
Distance (m)	25	25	25	25	25	25	25	25
Size	1	1	1	1	1	1	1	1
Threshold	**674**	**118**	**4**	**3**	**674**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**	**No**	**No**	**Yes**	**No**
ML-J Line	22.3	65.2	9.7	2.6	37.7	33.9	9.0	2.1
Distance (m)	25	25	25	25	25	25	25	25
Size	1	1	1	1	1	1	1	1
Threshold	**647**	**118**	**4**	**3**	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**	**No**	**No**	**Yes**	**No**
Telecommunications	3.9	17.9	2.8	0.6	10.0	9.0	2.8	0.6
Distance	25	25	25	25	25	25	25	25
Size	1	1	1	1	1	1	1	1
Threshold	**647**	**118**	**4**	**3**	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Note: Thresholds adjusted by ESA, where applicable, to reflect construction (vs. operation) emissions.

Project Alternatives Emissions Estimated by ESA using adjusted SCE Emission Estimates.

Alternative B

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Mira Loma Substation	2.87	0.95	9.51	21.95	0.03	1.81
Mira Loma-Jefferson 66 kV Line	185.95	28.74	153.18	290.55	0.43	26.73
Total	**188.82**	**29.69**	**162.69**	**312.5**	**0.46**	**28.54**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	No

Notes: Includes the proposed Circle City Substation, its source lines, and the associated telecommunications facilities would not be constructed.

Alternative C3

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
50 MW Subtransmission-Level Battery Storage/Substation Facility	24.66	7.85	96.31	139.54	0.24	13.11
42 MW Subtransmission-Level Battery Sto	24.66	7.85	96.31	139.54	0.24	13.11
Jefferson Substation	2.87	0.95	9.51	21.95	0.03	1.81
Battery Storage 66 kV Subtransmission Lines	49.54	12.17	114.61	229.38	0.33	19.69
Circle City Substation	24.66	7.85	96.31	139.54	0.24	13.11
Source Lines	49.54	12.17	114.61	229.38	0.33	19.69
Telecommunication Facilities	5.67	1.18	9.62	22.23	0.03	1.79
Total	**181.6**	**50.02**	**537.28**	**921.56**	**1.44**	**82.31**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	**Yes**

Notes: Construction emissions associated with each of the three subtransmission-level battery storage and substation facilities would be similar to the peak daily emissions that would be generated due to construction of the proposed Circle City Substation, and that up to two of the three facilities would be constructed concurrently. Similarly, construction related to the upgrades at existing Jefferson Substation would result in peak daily construction emissions similar to those that would be associated with the proposed upgrades for Mira Loma Substation under the Project, and that the substation upgrades (e.g., Corona and Chase substations) would occur during the peak daily emissions scenario. In addition, construction of the subtransmission lines that would be required to connect the subtransmission-level battery storage and substation facilities to the existing substations would result in similar peak daily emissions as construction of the proposed substation source lines, and that only one of the subtransmission lines would be constructed at a time during the peak daily emissions scenario.

Alternative D1

Project Component	Peak Construction Emissions (pounds/day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOC
Distribution-Level Battery Storage Facility	12.33	3.925	48.155	69.77	0.12	6.555
Mira Loma Substation	2.87	0.95	9.51	21.95	0.03	1.81
Mira Loma-Jefferson 66 kV Line	185.95	28.74	153.18	290.55	0.43	26.73
Telecommunication Facilities	5.67	1.18	9.62	22.23	0.03	1.79
Total	**206.82**	**34.795**	**220.465**	**404.5**	**0.61**	**36.885**
Threshold	150	55	550	100	150	75
Threshold Exceeded?	**Yes**	No	No	**Yes**	No	No

Notes: It is assumed that the peak daily construction emissions that would be associated with the distribution-level battery storage facility would generate roughly half the peak daily emissions that would be generated due to construction of the proposed Circle City Substation

	Emissions (pounds)			Emissions (metric tons)		
Proposed Substation Construction	**CO2**	**CH4**	**CO2e**	**CO2**	**CH4**	**CO2e**
Construction Equipment Use	1,537,290.44	470.82	1,547,177.75	697.30	0.21	701.79
Motor Vehicle Use	1,246,570.84	36.18	1,247,330.59	565.44	0.02	565.78
Total	**2,783,861.28**	**507.00**	**2,794,508.34**	**1,262.74**	**0.23**	**1,267.57**
Proposed ML-J Line	**CO2**	**CH4**	**CO2e**	**CO2**	**CH4**	**CO2e**
Construction Equipment Use	1,235,986.58	365.43	1,243,660.61	560.63	0.17	564.11
Motor Vehicle Use	811,393.35	26.81	811,956.34	368.04	0.01	368.30
Total	**2,047,379.93**	**392.24**	**2,055,616.95**	**928.68**	**0.18**	**932.41**
Proposed Source Lines	**CO2**	**CH4**	**CO2e**	**CO2**	**CH4**	**CO2e**
Construction Equipment Use	500,826.62	147.95	503,933.48	227.17	0.07	228.58
Motor Vehicle Use	413,001.11	13.16	413,277.40	187.33	0.01	187.46
Total	**913,827.73**	**161.10**	**917,210.88**	**414.51**	**0.07**	**416.04**

Alternative C3

Total Proposed Project	2,711
Minus MF-J Line	1,778.59
3 battery storage substation sites	3,802.70
line to 40 MW facility	106.22
lines to 50 MW facility	44.26
line to 42 MW facilty	85.54
Telecommunication lines	118.01
Total for Alternative C3	5,935.33
Amortized Construction	197.84

Mantenance and opertaions	2
SF6 Circuit Breakers	96
Amortized Construction	197.84
Total	295.8442725

2.550381659

	Emissions (pounds)			Emissions (metric tons)		
Construction	**CO2**	**CH4**	**CO2e**	**CO2**	**CH4**	**CO2e**
Construction Equipment Use	3,333,993.49	1,002.67	3,355,049.49	1,512.27	0.45	1,521.82
Motor Vehicle Use	2,493,290.07	77.21	2,494,911.42	1,130.94	0.04	1,131.67
Total	**5,827,283.56**	**1,079.87**	**5,849,960.91**	**2,643.21**	**0.49**	**2,653.50**

	Emissions (pounds)				Emissions (metric tons)			
Operation	**CO2**	**CH4**	**SF6**	**CO2e**	**CO2**	**CH4**	**SF6**	**CO2e**
On-Road	3,529.02	0.17	-	3,532.57	1.60	0.00	0.00	1.60
SF6	-	-	2.20	52,580.00	0.00	0.00	0.0010	23.85
Construction	194,242.79	36.00	-	194,998.70	88.11	0.02	0.00	88.45
Total	**197,771.80**	**36.16**	**2.20**	**251,111.26**	**89.71**	**0.02**	**0.00**	**113.90**

SF6 Emission Assumptions

Number of Transformers	11	Note: 10 circuit breakers at Circle City Substation, 1 at Mira Loma Substation
SF6 (lbs) each	40	
Total SF6	440	
Annual Leak Rate	0.005	Note: 0.5% annual leak rate based on manufacturer's guaranteed maximum annual leak rate
Annual Leaked	2.2	
Annual Leaked (MT)	0.00100	
GWP	23900	
Annual Leaked CO2e	23.85	

Indirect Water Usage Emissions (Estimated by ESA)

Project Water Demand

34.9 Short-term construction demand (million gallons)

Use and Emission Factors

Water energy use factor* (CEC, 2005)

10,200 kW-hr/million gallons

Electricity use emission factors (TCR, 2016)

Units	CO2	CH4	N2O
lbs/MW-hr	650.31	0.03112	0.00567

Project Indirect Electricity Usage

MW-hr 355.6342507

Indirect Emission Assoc. with Electricity Use (metric tons/year)

	CO2	CH4	N2O	**CO2e**
Emissions	104.905	0.005	0.001	**105.303**

Notes: Global Warming Potential for CH4 = 25; GWP for N2O = 298.

Construction of the proposed Project would require 107 acre-feet of water; there are 325851.43 gallons per acre-foot.

* Water energy use factor includes supply, conveyance, treatment, and distribution.

References:

California Energy Commission (CEC), 2005. California's Water - Energy Relationship Prepared in Suppot of the 2005. Integrated Energy Policy Report Proceeding (04-IEPR-01E), November 2005 (Table 1-3, page 11).

The Climate Registry (TCR), 2016, The Climate Registry Default Emission Factors, Table 14.1, released April 19, 2016.

Total Project Construction Emissions

Emissions Source	CO_2e metric tons
Off-road Construction Equipment	1,522
On-road Vehicles	1,132
Water Use Indirect Emissions	105
Total	2,759
Amortized over 30 Years	92

Equipment Type	On Road Use?	On Road Type	Off Road Use?	HP	Equipment Category	HP - Equip Category	OnSite_Road_Unctrl_ROG	OnSite_Road_Unctrl_CO	OnSite_Road_Unctrl_NOX	OnSite_Road_Unctrl_SOX	OnSite_Road_Unctrl_PM10	OnSite_Road_Unctrl_PM25	OnSite_Road_Unctrl_CO2	OnSite_Road_Unctrl_CH4	OffSite_Road_Unctrl_ROG	OffSite_Road_Unctrl_CO	OffSite_Road_Unctrl_NOX	OffSite_Road_Unctrl_SOX	OffSite_Road_Unctrl_PM10	OffSite_Road_Unctrl_PM25	OffSite_Road_Unctrl_CO2	OffSite_Road_Unctrl_CH4
1 Ton Crew Cab, 4x4	on	delivery					0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05
165 Ton Crane			off	300	Cranes	300 - Cranes																
15-ton Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
17-ton Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
20-ton Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
3 Drum Sock Line Puller	on	hhdt	off	300	other construction equipment	300 - other construction equipmen	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
3/4 Ton Truck, 4x4	on	delivery					0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05
30 Ton Rough Terrain Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
40 Ton Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
50-ton Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Arrow Board Trailer																						
Asphalt Curb Machine			off	35	Paving Equipment	35 - Paving Equipment																
Asphalt Paver			off	152	Pavers	152 - Pavers																
Auger Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Backhoe/Front Loader			off	200	Tractors/Loaders/Backhoes	200 - Tractors/Loaders/Backhoes																
Bobcat			off	75	Skid Steer Loaders	75 - Skid Steer Loaders																
Boom/Crane Truck	on	hhdt	off	235	Cranes	235 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Bucket Truck	on	hhdt	off	350	Aerial Lifts	350 - Aerial Lifts	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Bull Wheel Puller	on	hhdt	off	300	other construction equipment	300 - other construction equipmen	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Cable Chopping Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Cable-pulling Truck with single axle cable dolly	on	hhdt	off	9	other construction equipment	9 - other construction equipment	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Carry all Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Commander Truck	on	delivery					0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05
Compressor Trailer			off	120	Air Compressors	120 - Air Compressors																
Concrete Mixer Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Concrete Pump Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Crane	on	hhdt	off	300	Cranes	300 - Cranes	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Drill Rig	on	hhdt	off	500	Bore/Drill Rigs	500 - Bore/Drill Rigs	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Drum Type Compactor			off	250	Rollers	250 - Rollers																
Dump Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Earth Movers			off	350	Crawler Tractors	350 - Crawler Tractors																
Excavator			off	152	Excavators	152 - Excavators																
Extendable Flat Bed Pole Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Flat Bed Pole Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Flat Bed Truck/Trailer	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Forklift			off	100	Forklifts	100 - Forklifts																
Lowboy Truck/Trailer	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Maintenance Truck	on	passenger					0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05	0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05
Medium Duty Splicing Lab Truck	on	delivery	off	15	Generator Sets	15 - Generator Sets	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05
Motor Grader			off	350	Graders	350 - Graders																
Paving Roller			off	46	Rollers	46 - Rollers																
Pipe Truck/Trailer	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Puller	on	hhdt	off	300	other construction equipment	300 - other construction equipmen	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Reach Manlift			off	50	Aerial Lifts	50 - Aerial Lifts																
Road Grader			off	350	Graders	350 - Graders																
Rough Terrain Crane (M)			off	350	Cranes	350 - Cranes																
Rough Terrain Forklift			off	200	Forklifts	200 - Forklifts																
Scissor Lift			off	50	Aerial Lifts	50 - Aerial Lifts																
Single axle Trailer	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Skip Loader			off	100	Tractors/Loaders/Backhoes	100 - Tractors/Loaders/Backhoes																
Sock Line Puller	on	hhdt	off	300	other construction equipment	300 - other construction equipmen	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Splicing Van	on	delivery	off	15	other construction equipment	15 - other construction equipment	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05	0.001502418	0.009981014	0.01070034	2.72255E-05	0.000431309	0.000346051	2.840050152	6.66308E-05
Stake Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Static Truck/ Tensioner			off	350	other construction equipment	350 - other construction equipmen																
Survey Truck	on	passenger					0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05	0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05
Test Truck	on	passenger					0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05	0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05
Tool Trailer	on	passenger					0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05	0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05
Track Type Dozer			off	350	Crawler Tractors	350 - Crawler Tractors																
Tracker			off	120	Tractors/Loaders/Backhoes	120 - Tractors/Loaders/Backhoes																
Tractor			off	45	Tractors/Loaders/Backhoes	45 - Tractors/Loaders/Backhoes																
Truck pulling Reel Dolly	on	hhdt	off	9	other construction equipment	9 - other construction equipment	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Truck, Semi	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Water Tower																						
Water Truck	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Wire Truck/Trailer	on	hhdt					0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Work Truck with attached Auger	on	hhdt	off	500	Bore/Drill Rigs	500 - Bore/Drill Rigs	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05	0.001452031	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.208201287	6.72237E-05
Worker Commute	on	passenger					0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05	0.000601094	0.005378913	0.000512968	1.07942E-05	9.4463E-05	6.19192E-05	1.106274888	5.30045E-05

Equipment Type	On_Unctrl_Dust_Paved_PM10	On_Unctrl_Dust_Paved_PM25	On_Unctrl_Dust_Unpaved_PM10	On_Unctrl_Dust_Unpaved_PM25	OnSite_Road_Ctrl_ROG	OnSite_Road_Ctrl_CO	OnSite_Road_Ctrl_NOX	OnSite_Road_Ctrl_SOX	OnSite_Road_Ctrl_PM10	OnSite_Road_Ctrl_PM25	OnSite_Road_Ctrl_CO2	OnSite_Road_Ctrl_CH4	OffSite_Road_Ctrl_ROG	OffSite_Road_Ctrl_CO	OffSite_Road_Ctrl_NOX	OffSite_Road_Ctrl_SOX	OffSite_Road_Ctrl_PM10	OffSite_Road_Ctrl_PM25	OffSite_Road_Ctrl_CO2	OffSite_Road_Ctrl_CH4	On_Ctrl_Dust_Paved_PM10	On_Ctrl_Dust_Paved_PM25	On_Ctrl_Dust_Unpaved_PM10	On_Ctrl_Dust_Unpaved_PM25
1 Ton Crew Cab, 4x4	0.000909	0.000259	1.472036	0.146952	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.000909	0.000259	0.405762	0.040503
165 Ton Crane																								
15-ton Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
17-ton Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
20-ton Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
3 Drum Sock Line Puller	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
3/4 Ton Truck, 4x4	0.000909	0.000259	1.472036	0.146952	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.000909	0.000259	0.405762	0.040503
30 Ton Rough Terrain Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
40 Ton Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
50-ton Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Arrow Board Trailer																								
Asphalt Curb Machine																								
Asphalt Paver																								
Auger Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Backhoe/Front Loader																								
Bobcat																								
Boom/Crane Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Bucket Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Bull Wheel Puller	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Cable Chopping Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Cable-pulling Truck with single axle cable dolly	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Carry all Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Commander Truck	0.000909	0.000259	1.472036	0.146952	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.000909	0.000259	0.405762	0.040503
Compressor Trailer																								
Concrete Mixer Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Concrete Pump Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Crane	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Drill Rig	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Drum Type Compactor																								
Dump Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Earth Movers																								
Excavator																								
Extendable Flat Bed Pole Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Flat Bed Pole Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Flat Bed Truck/Trailer	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Forklift																								
Lowboy Truck/Trailer	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Maintenance Truck	0.00076	0.000201	1.471887	0.146894	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.00076	0.000201	0.405613	0.040445
Medium Duty Splicing Lab Truck	0.000909	0.000259	1.472036	0.146952	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.000909	0.000259	0.405762	0.040503
Motor Grader																								
Paving Roller																								
Pipe Truck/Trailer	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Puller	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Reach Manlift																								
Road Grader																								
Rough Terrain Crane (M)																								
Rough Terrain Forklift																								
Scissor Lift																								
Single axle Trailer	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Skip Loader																								
Sock Line Puller	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Splicing Van	0.000909	0.000259	1.472036	0.146952	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001	0.000909	0.000259	0.405762	0.040503
Stake Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Static Truck/ Tensioner																								
Survey Truck	0.00076	0.000201	1.471887	0.146894	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.00076	0.000201	0.405613	0.040445
Test Truck	0.00076	0.000201	1.471887	0.146894	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.00076	0.000201	0.405613	0.040445
Tool Trailer	0.00076	0.000201	1.471887	0.146894	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.00076	0.000201	0.405613	0.040445
Track Type Dozer																								
Tracker																								
Tractor																								
Truck pulling Reel Dolly	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Truck, Semi	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Water Tower																								
Water Truck	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Wire Truck/Trailer	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Work Truck with attached Auger	0.000871	0.000239	1.471999	0.146931	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001	0.000871	0.000239	0.405725	0.040482
Worker Commute	0.00076	0.000201	1.471887	0.146894	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001	0.00076	0.000201	0.405613	0.040445

Equipment Type	Off_Unctrl_ROG	Off_Unctrl_CO	Off_Unctrl_NOX	Off_Unctrl_SOX	Off_Unctrl_PM10	Off_Unctrl_PM2.5	Off_Unctrl_CO2	Off_Unctrl_CH4	Off_Ctrl_ROG	Off_Ctrl_CO	Off_Ctrl_NOX	Off_Ctrl_SOX	Off_Ctrl_PM10	Off_Ctrl_PM2.5	Off_Ctrl_CO2	Off_Ctrl_CH4
1 Ton Crew Cab, 4x4																
165 Ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
15-ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
17-ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
20-ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
3 Drum Sock Line Puller	0.0805	0.5892	1.0492	0.0014	0.0384	0.0353	139.2049	0.0427	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
3/4 Ton Truck, 4x4																
30 Ton Rough Terrain Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
40 Ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
50-ton Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
Arrow Board Trailer																
Asphalt Curb Machine	0.0257	0.1335	0.1313	0.0001	0.0100	0.0092	15.2405	0.0047	0.0257	0.1335	0.1313	0.0001	0.0100	0.0092	15.2405	0.0047
Asphalt Paver	0.0547	0.4311	0.6127	0.0007	0.0301	0.0277	70.2262	0.0215	0.0169	0.5208	0.3265	0.0007	0.0158	0.0158	70.2262	0.0215
Auger Truck																
Backhoe/Front Loader	0.0475	0.2127	0.6592	0.0008	0.0215	0.0198	81.0563	0.0248	0.0196	0.4242	0.3785	0.0008	0.0144	0.0144	81.0563	0.0248
Bobcat	0.0156	0.2030	0.2010	0.0003	0.0108	0.0099	30.4867	0.0093	0.0156	0.2030	0.2010	0.0003	0.0108	0.0099	30.4867	0.0093
Boom/Crane Truck	0.0842	0.3583	0.9999	0.0007	0.0446	0.0410	75.0282	0.0230	0.0180	0.3906	0.3486	0.0007	0.0132	0.0132	75.0282	0.0230
Bucket Truck	0.0588	0.2385	1.1141	0.0012	0.0250	0.0230	119.1893	0.0365	0.0287	0.6219	0.5549	0.0012	0.0211	0.0211	119.1893	0.0365
Bull Wheel Puller	0.0805	0.5892	1.0492	0.0014	0.0384	0.0353	139.2049	0.0427	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Cable Chopping Truck																
Cable-pulling Truck with single axle cable dolly	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014
Carry all Truck																
Commander Truck																
Compressor Trailer	0.0852	0.4790	0.5603	0.0008	0.0444	0.0444	72.1662	0.0076	0.0152	0.4698	0.2946	0.0008	0.0142	0.0142	72.1662	0.0076
Concrete Mixer Truck																
Concrete Pump Truck																
Crane	0.0787	0.6804	1.0035	0.0009	0.0407	0.0375	95.6017	0.0293	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
Drill Rig	0.0392	0.2490	0.5698	0.0011	0.0164	0.0151	111.6622	0.0342	0.0271	0.5875	0.5243	0.0011	0.0199	0.0199	111.6623	0.0342
Drum Type Compactor	0.0574	0.2950	0.8212	0.0010	0.0271	0.0249	104.6572	0.0321	0.0251	0.5445	0.4859	0.0010	0.0184	0.0184	104.6572	0.0321
Dump Truck																
Earth Movers	0.1277	0.8742	1.6687	0.0016	0.0646	0.0594	166.7015	0.0511	0.0398	0.8627	0.7698	0.0016	0.0292	0.0292	166.7015	0.0511
Excavator	0.0419	0.3960	0.4649	0.0006	0.0229	0.0210	62.6460	0.0192	0.0151	0.4650	0.2915	0.0006	0.0141	0.0141	62.6460	0.0192
Extendable Flat Bed Pole Truck																
Flat Bed Pole Truck																
Flat Bed Truck/Trailer																
Forklift	0.0296	0.1754	0.2565	0.0002	0.0212	0.0195	21.9459	0.0067	0.0053	0.1631	0.1208	0.0002	0.0085	0.0085	21.9459	0.0067
Lowboy Truck/Trailer																
Maintenance Truck																
Medium Duty Splicing Lab Truck	0.0171	0.0881	0.1186	0.0002	0.0061	0.0061	13.9070	0.0015	0.0171	0.0881	0.1186	0.0002	0.0061	0.0061	13.9070	0.0015
Motor Grader	0.1057	0.5402	1.1253	0.0015	0.0441	0.0405	157.7386	0.0483	0.0380	0.8225	0.7340	0.0015	0.0278	0.0278	157.7386	0.0483
Paving Roller	0.0462	0.1984	0.1965	0.0002	0.0168	0.0154	21.3887	0.0066	0.0462	0.1984	0.1965	0.0002	0.0168	0.0154	21.3887	0.0066
Pipe Truck/Trailer																
Puller	0.0805	0.5892	1.0492	0.0014	0.0384	0.0353	139.2049	0.0427	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Reach Manlift	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058
Road Grader	0.1057	0.5402	1.1253	0.0015	0.0441	0.0405	157.7386	0.0483	0.0380	0.8225	0.7340	0.0015	0.0278	0.0278	157.7386	0.0483
Rough Terrain Crane (M)	0.0918	0.7938	1.1707	0.0011	0.0475	0.0437	111.5353	0.0342	0.0269	0.5818	0.5191	0.0011	0.0197	0.0197	111.5353	0.0342
Rough Terrain Forklift	0.0437	0.1845	0.5072	0.0004	0.0222	0.0204	44.0591	0.0135	0.0106	0.2293	0.2046	0.0004	0.0078	0.0078	44.0591	0.0135
Scissor Lift	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058
Single axle Trailer																
Skip Loader	0.0408	0.3085	0.3923	0.0004	0.0295	0.0271	20.0027	0.0126	0.0098	0.3018	0.2235	0.0004	0.0157	0.0157	20.0027	0.0126
Sock Line Puller	0.0805	0.5892	1.0492	0.0014	0.0384	0.0353	139.2049	0.0427	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Splicing Van	0.0173	0.0785	0.0753	0.0001	0.0066	0.0061	7.7501	0.0024	0.0173	0.0785	0.0753	0.0001	0.0066	0.0061	7.7501	0.0024
Stake Truck																
Static Truck/ Tensioner	0.0939	0.6874	1.2241	0.0016	0.0448	0.0412	162.4058	0.0498	0.0389	0.8426	0.7519	0.0016	0.0285	0.0285	162.4058	0.0498
Survey Truck																
Test Truck																
Tool Trailer																
Track Type Dozer	0.1277	0.8742	1.6687	0.0016	0.0646	0.0594	166.7015	0.0511	0.0398	0.8627	0.7698	0.0016	0.0292	0.0292	166.7015	0.0511
Tracker	0.0490	0.3702	0.4707	0.0005	0.0354	0.0326	49.2162	0.0151	0.0117	0.3622	0.2211	0.0005	0.0110	0.0110	49.2162	0.0151
Tractor	0.0438	0.2088	0.1876	0.0002	0.0159	0.0146	20.0027	0.0061	0.0438	0.2088	0.1876	0.0002	0.0159	0.0146	20.0027	0.0061
Truck pulling Reel Dolly	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014
Truck, Semi																
Water Tower																
Water Truck																
Wire Truck/Trailer																
Work Truck with attached Auger	0.0392	0.2490	0.5698	0.0011	0.0164	0.0151	111.6622	0.0342	0.0271	0.5875	0.5243	0.0011	0.0199	0.0199	111.6623	0.0342
Worker Commute																

Vehicle Class	ROG	CO	NOX	SOX	PM10	PM25	CO2	CH4
passenger	0.00060109	0.00537891	0.00051297	1.07942E-05	9.4463E-05	6.19192E-05	1.10627489	5.30045E-05
delivery	0.00150242	0.00998101	0.01070034	2.72255E-05	0.000431309	0.000346051	2.84005015	6.66308E-05
hhdt	0.00145203	0.00650533	0.01690387	4.03342E-05	0.000848939	0.000697205	4.20820129	6.72237E-05

Scenario Year: **2017**

All model years in the range 1973 to 2017

Passenger Vehicles (pounds/mile)	
CO	0.00537891
NOx	0.00051297
ROG	0.00060109
SOx	0.00001079
PM10	0.00009446
PM2.5	0.00006192
CO2	1.10627489
CH4	0.00005300

Delivery Trucks (pounds/mile)	
CO	0.00998101
NOx	0.01070034
ROG	0.00150242
SOx	0.00002723
PM10	0.00043131
PM2.5	0.00034605
CO2	2.84005015
CH4	0.00006663

Scenario Year: **2017**

All model years in the range 1973 to 2017

HHDT-DSL (pounds/mile)	
CO	0.00650533
NOx	0.01690387
ROG	0.00145203
SOx	0.00004033
PM10	0.00084894
PM2.5	0.00069721
CO2	4.20820129
CH4	0.00006722

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00070873
PM2.5	0.00065111

	Uncontrolled Paved PM10 EF	Uncontrolled Paved PM2.5 EF	Controlled Paved PM10 EF	Controlled Paved PM2.5 EF	Uncontrolled Unpaved PM10 EF	Uncontrolled Unpaved PM2.5 EF	Controlled Unpaved PM10 EF	Controlled Unpaved PM2.5 EF
CalEEMod Factors/100 miles								
passenger	0.076	0.0201	0.076	0.0201	147.1887	14.6894	40.5613	4.0445
delivery	0.0909	0.0259	0.0909	0.0259	147.2036	14.6952	40.5762	4.0503
hhdt	0.0871	0.0239	0.0871	0.0239	147.1999	14.6931	40.5725	4.0482

CalEEMod Factors/mile	Uncontrolled Paved PM10 EF	Uncontrolled Paved PM2.5 EF	Controlled Paved PM10 EF	Controlled Paved PM2.5 EF	Uncontrolled Unpaved PM10 EF	Uncontrolled Unpaved PM2.5 EF	Controlled Unpaved PM10 EF	Controlled Unpaved PM2.5 EF
passenger	0.00076	0.000201	0.00076	0.000201	1.471887	0.146894	0.405613	0.040445
delivery	0.000909	0.000259	0.000909	0.000259	1.472036	0.146952	0.405762	0.040503
hhdt	0.000871	0.000239	0.000871	0.000239	1.471999	0.146931	0.405725	0.040482

HP	Equip Category	HP - Equip Category	Use Factor	Off_Unctrl_ROG	Off_Unctrl_CO	Off_Unctrl_NOX	Off_Unctrl_SOX	Off_Unctrl_PM10	Off_Unctrl_PM25	Off_Unctrl_CO2	Off_Unctrl_CH4	Off_Ctrl_ROG	Off_Ctrl_CO	Off_Ctrl_NOX	Off_Ctrl_SOX	Off_Ctrl_PM10	Off_Ctrl_PM25	Off_Ctrl_CO2	Off_Ctrl_CH4	Apply Tier 3?	tier3/uncontr	% reduction
50	Aerial Lifts	50 - Aerial Lifts	0.3082	0.007145	0.108294	0.118561	0.000185	0.002697	0.002482	18.039471	0.005803	0.007145	0.108294	0.118561	0.000185	0.002697	0.002482	18.039471	0.005803	No	1	0
350	Aerial Lifts	350 - Aerial Lifts	0.3082	0.058779	0.238537	1.11413	0.001166	0.025011	0.02301	119.1893	0.036519	0.028704	0.621924	0.554948	0.001166	0.02105	0.02105	119.1893	0.036519	Yes	0.914819644	0.085180356
120	Air Compressors	120 - Air Compressors	0.48	0.085208	0.478992	0.560263	0.000762	0.044445	0.044445	72.166166	0.007619	0.015238	0.469849	0.294608	0.000762	0.014223	0.014223	72.166166	0.007619	Yes	0.3200135	0.6799865
500	Bore/Drill Rigs	500 - Bore/Drill Rigs	0.5025	0.039205	0.249046	0.569792	0.001093	0.016379	0.015069	111.6622	0.034213	0.027117	0.587532	0.524259	0.001093	0.019886	0.019886	111.662278	0.034213	Yes	1.319662884	-0.319662884
235	Cranes	235 - Cranes	0.2881	0.084224	0.358263	0.999919	0.000733	0.044578	0.041012	75.02817	0.022989	0.018029	0.390637	0.348569	0.000733	0.013222	0.013222	75.02817	0.022989	Yes	0.322393446	0.677606554
300	Cranes	300 - Cranes	0.2881	0.078665	0.68041	1.003479	0.000935	0.040743	0.037484	95.601689	0.029292	0.023016	0.498686	0.444981	0.000935	0.016879	0.016879	95.601689	0.029292	Yes	0.450298794	0.549701206
350	Cranes	350 - Cranes	0.2881	0.091776	0.793812	1.170725	0.001091	0.047533	0.043731	111.535304	0.034174	0.026852	0.5818	0.519145	0.001091	0.019692	0.019692	111.535304	0.034174	Yes	0.450298415	0.549701585
350	Crawler Tractors	350 - Crawler Tractors	0.4288	0.127707	0.874248	1.668706	0.00163	0.064577	0.059411	166.701475	0.051077	0.039816	0.862669	0.769766	0.00163	0.029198	0.029198	166.701475	0.051077	Yes	0.491457811	0.508542189
152	Excavators	152 - Excavators	0.3819	0.041923	0.395955	0.464914	0.000613	0.022874	0.021044	62.646038	0.019195	0.01508	0.464955	0.291539	0.000613	0.014074	0.014074	62.646038	0.019195	Yes	0.668789204	0.331210796
100	Forklifts	100 - Forklifts	0.201	0.029626	0.175436	0.256518	0.000214	0.021163	0.01947	21.945894	0.006724	0.005291	0.163142	0.120813	0.000214	0.008466	0.008466	21.945894	0.006724	Yes	0.434822804	0.565177196
200	Forklifts	200 - Forklifts	0.201	0.043716	0.184509	0.507166	0.000431	0.022204	0.020428	44.05906	0.0135	0.010582	0.229281	0.204589	0.000431	0.00776	0.00776	44.05906	0.0135	Yes	0.379870766	0.620129234
15	Generator Sets	15 - Generator Sets	0.74	0.017105	0.088072	0.118612	0.000196	0.006118	0.006118	13.907022	0.001542	0.017105	0.088072	0.118612	0.000196	0.006118	0.006118	13.907022	0.001542	No	1	0
350	Graders	350 - Graders	0.4087	0.105723	0.540181	1.125332	0.001543	0.044075	0.040549	157.738649	0.048331	0.037964	0.822545	0.733963	0.001543	0.02784	0.02784	157.738649	0.048331	Yes	0.686576734	0.313423266
9	other construction equipment	9 - other construction equipment	0.4154	0.010368	0.047127	0.045173	0.0000453	0.003978	0.00366	4.650084	0.001425	0.010368	0.047127	0.045173	0.0000453	0.003978	0.00366	4.650084	0.001425	No	1	0
15	other construction equipment	15 - other construction equipment	0.4154	0.01728	0.07854	0.075288	0.0000755	0.00663	0.0061	7.75014	0.002375	0.01728	0.07854	0.075288	0.0000755	0.00663	0.0061	7.75014	0.002375	No	1	0
300	other construction equipment	300 - other construction equipment	0.4154	0.080505	0.589216	1.049202	0.001362	0.038395	0.035323	139.2049	0.042652	0.033334	0.722234	0.644455	0.001362	0.024445	0.024445	139.2049	0.042652	Yes	0.692042012	0.307957988
350	other construction equipment	350 - other construction equipment	0.4154	0.093922	0.687419	1.224068	0.001589	0.044794	0.041211	162.405807	0.049761	0.03889	0.842607	0.751865	0.001589	0.028519	0.028519	162.405807	0.049761	Yes	0.692023974	0.307976026
152	Pavers	152 - Pavers	0.4154	0.054735	0.431071	0.612672	0.000687	0.030149	0.027737	70.226164	0.021517	0.016889	0.52075	0.326524	0.000687	0.015763	0.015763	70.226164	0.021517	Yes	0.568302268	0.431697732
35	Paving Equipment	35 - Paving Equipment	0.3551	0.025726	0.13348	0.131323	0.000149	0.009978	0.00918	15.240482	0.00467	0.025726	0.13348	0.131323	0.000149	0.009978	0.00918	15.240482	0.00467	No	1	0
46	Rollers	46 - Rollers	0.3752	0.046155	0.198359	0.19645	0.000208	0.016789	0.015446	21.388694	0.006554	0.046155	0.198359	0.19645	0.000208	0.016789	0.015446	21.388694	0.006554	No	1	0
250	Rollers	250 - Rollers	0.3752	0.057436	0.294993	0.821205	0.001024	0.027105	0.024937	104.657183	0.032067	0.025133	0.544542	0.485899	0.001024	0.018431	0.018431	104.657183	0.032067	Yes	0.739102538	0.260897462
75	Skid Steer Loaders	75 - Skid Steer Loaders	0.3685	0.015616	0.203028	0.201043	0.000298	0.010805	0.009941	30.4867	0.009341	0.015616	0.203028	0.201043	0.000298	0.010805	0.009941	30.4867	0.009341	No	1	0
45	Tractors/Loaders/Backhoes	45 - Tractors/Loaders/Backhoes	0.3685	0.043832	0.208834	0.187557	0.000195	0.015898	0.014626	20.002676	0.006129	0.043832	0.208834	0.187557	0.000195	0.015898	0.014626	20.002676	0.006129	No	1	0
100	Tractors/Loaders/Backhoes	100 - Tractors/Loaders/Backhoes	0.3685	0.040824	0.308485	0.392251	0.000401	0.0295	0.02714	20.002676	0.012567	0.009789	0.301813	0.223505	0.000401	0.015662	0.015662	20.002676	0.012567	Yes	1	0
120	Tractors/Loaders/Backhoes	120 - Tractors/Loaders/Backhoes	0.3685	0.048988	0.370182	0.470701	0.000481	0.035399	0.032568	49.216228	0.01508	0.011746	0.362175	0.221094	0.000481	0.010963	0.010963	49.216228	0.01508	Yes	0.577081798	0.422918202
200	Tractors/Loaders/Backhoes	200 - Tractors/Loaders/Backhoes	0.3685	0.047516	0.212686	0.659195	0.000793	0.021508	0.019788	81.056305	0.024836	0.019577	0.424169	0.37849	0.000793	0.014357	0.014357	81.056305	0.024836	Yes	0.336618767	0.663381233
																					0.725540732	0.274459268
																					#VALUE!	
																					0	
																					0	
																					0	
																					0	
																					0	

Category	Uncontrolled PM10	Controlled PM10	Uncontrolled PM25	Controlled PM25
Soil Handling	0.00162	0.000891	0.000336	0.0001848
Grading	1.481	0.81455	0.308	0.1694

Component	Update Component
Substation	Circle City Substation
ML Sub	Mira Loma Substation
66 Subtrans Line	Source Line Routes 1 and 2
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line
Telecommunications	Telecommunication Facilities
ML Sub Linework	Mira Loma Substation

Number	Assumption Description
1	All on-road on-site vehicle travel will be unpaved
2	EMFAC factors were used for controlled and uncontrolled scenarios
3	Off-Road factors were taken from CalEEMod simulation
4	On-Road dust factors were taken from CalEEMod simulation - simulated at 100 miles, then divided by 100 to reach per mile factor
5	Uncontrolled soil handling EF = 0.00162 for PM10 and 0.000336 for PM2.5
6	Uncontrolled grading EF = 1.481 for PM10, 0.308 for PM2.5
7	Controlled earthwork EF = Uncontrolled earthwork EF * 0.55
8	LST emissions - Max for substations taken from Activity Emissions Group as all work will occur in same location, max for remaining taking from individual activities as they will occur in different locations
9	O&M on road travel will be uncontrolled
10	GHG Construction Emissions taken from uncontrolled emissions values

Equipment Type	Off Road Use?	Equipment Category	HP	ROG (lbs/hr)	CO (lbs/hr)	NOx (lbs/hr)	SOx (lbs/hr)	PM10 (lbs/hr)	PM2.5 (lbs/hr)	CO2 (lbs/hr)	CH4 (lbs/hr)
165 Ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
15-ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
17-ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
20-ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
3 Drum Sock Line Puller	off	other construction equipment	300	0.08051	0.58922	1.04920	0.00136	0.03840	0.03532	139.20490	0.04265
30 Ton Rough Terrain Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
40 Ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
50-ton Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
Asphalt Curb Machine	off	Paving Equipment	35	0.02573	0.13348	0.13132	0.00015	0.00998	0.00918	15.24048	0.00467
Asphalt Paver	off	Pavers	152	0.05474	0.43107	0.61267	0.00069	0.03015	0.02774	70.22616	0.02152
Backhoe/Front Loader	off	Tractors/Loaders/Backhoes	200	0.04752	0.21269	0.65920	0.00079	0.02151	0.01979	81.05631	0.02484
Bobcat	off	Skid Steer Loaders	75	0.01562	0.20303	0.20104	0.00030	0.01081	0.00994	30.48670	0.00934
Boom/Crane Truck	off	Cranes	235	0.08422	0.35826	0.99992	0.00073	0.04458	0.04101	75.02817	0.02299
Bucket Truck	off	Aerial Lifts	350	0.05878	0.23854	1.11413	0.00117	0.02501	0.02301	119.18930	0.03652
Bull Wheel Puller	off	other construction equipment	300	0.08051	0.58922	1.04920	0.00136	0.03840	0.03532	139.20490	0.04265
Cable-pulling Truck with single axle cable dolly	off	other construction equipment	9	0.01037	0.04713	0.04517	0.00005	0.00398	0.00366	4.65008	0.00143
Compressor Trailer	off	Air Compressors	120	0.08521	0.47899	0.56026	0.00076	0.04445	0.04445	72.16617	0.00762
Crane	off	Cranes	300	0.07867	0.68041	1.00348	0.00094	0.04074	0.03748	95.60169	0.02929
Drill Rig	off	Bore/Drill Rigs	500	0.03921	0.24905	0.56979	0.00109	0.01638	0.01507	111.66220	0.03421
Drum Type Compactor	off	Rollers	250	0.05744	0.29499	0.82121	0.00102	0.02711	0.02494	104.65718	0.03207
Earth Movers	off	Crawler Tractors	350	0.12771	0.87425	1.66871	0.00163	0.06458	0.05941	166.70148	0.05108
Excavator	off	Excavators	152	0.04192	0.39596	0.46491	0.00061	0.02287	0.02104	62.64604	0.01920
Forklift	off	Forklifts	100	0.02963	0.17544	0.25652	0.00021	0.02116	0.01947	21.94589	0.00672
Medium Duty Splicing Lab Truck	off	Generator Sets	15	0.01711	0.08807	0.11861	0.00020	0.00612	0.00612	13.90702	0.00154
Motor Grader	off	Graders	350	0.10572	0.54018	1.12533	0.00154	0.04408	0.04055	157.73865	0.04833
Paving Roller	off	Rollers	46	0.04616	0.19836	0.19645	0.00021	0.01679	0.01545	21.38869	0.00655
Puller	off	other construction equipment	300	0.08051	0.58922	1.04920	0.00136	0.03840	0.03532	139.20490	0.04265
Reach Manlift	off	Aerial Lifts	50	0.00715	0.10829	0.11856	0.00019	0.00270	0.00248	18.03947	0.00580
Road Grader	off	Graders	350	0.10572	0.54018	1.12533	0.00154	0.04408	0.04055	157.73865	0.04833
Rough Terrain Crane (M)	off	Cranes	350	0.09178	0.79381	1.17073	0.00109	0.04753	0.04373	111.53530	0.03417
Rough Terrain Forklift	off	Forklifts	200	0.04372	0.18451	0.50717	0.00043	0.02220	0.02043	44.05906	0.01350
Scissor Lift	off	Aerial Lifts	50	0.00715	0.10829	0.11856	0.00019	0.00270	0.00248	18.03947	0.00580
Skip Loader	off	Tractors/Loaders/Backhoes	100	0.04082	0.30849	0.39225	0.00040	0.02950	0.02714	20.00268	0.01257
Sock Line Puller	off	other construction equipment	300	0.08051	0.58922	1.04920	0.00136	0.03840	0.03532	139.20490	0.04265
Splicing Van	off	other construction equipment	15	0.01728	0.07854	0.07529	0.00008	0.00663	0.00610	7.75014	0.00238
Static Truck/ Tensioner	off	other construction equipment	350	0.09392	0.68742	1.22407	0.00159	0.04479	0.04121	162.40581	0.04976
Track Type Dozer	off	Crawler Tractors	350	0.12771	0.87425	1.66871	0.00163	0.06458	0.05941	166.70148	0.05108
Tracker	off	Tractors/Loaders/Backhoes	120	0.04899	0.37018	0.47070	0.00048	0.03540	0.03257	49.21623	0.01508
Tractor	off	Tractors/Loaders/Backhoes	45	0.04383	0.20883	0.18756	0.00020	0.01590	0.01463	20.00268	0.00613
Truck pulling Reel Dolly	off	other construction equipment	9	0.01037	0.04713	0.04517	0.00005	0.00398	0.00366	4.65008	0.00143
Work Truck with attached Auger	off	Bore/Drill Rigs	500	0.03921	0.24905	0.56979	0.00109	0.01638	0.01507	111.66220	0.03421

Equipment Type	Off Road Use?	Equipment Category	HP	ROG (lbs/hr)	CO (lbs/hr)	NOx (lbs/hr)	SOx (lbs/hr)	PM10 (lbs/hr)	PM2.5 (lbs/hr)	CO2 (lbs/hr)	CH4 (lbs/hr)
165 Ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
15-ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
17-ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
20-ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
3 Drum Sock Line Puller	off	other construction equipment	300	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
30 Ton Rough Terrain Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
40 Ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
50-ton Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
Asphalt Curb Machine	off	Paving Equipment	35	0.0257	0.1335	0.1313	0.0001	0.0100	0.0092	15.2405	0.0047
Asphalt Paver	off	Pavers	152	0.0169	0.5208	0.3265	0.0007	0.0158	0.0158	70.2262	0.0215
Backhoe/Front Loader	off	Tractors/Loaders/Backhoes	200	0.0196	0.4242	0.3785	0.0008	0.0144	0.0144	81.0563	0.0248
Bobcat	off	Skid Steer Loaders	75	0.0156	0.2030	0.2010	0.0003	0.0108	0.0099	30.4867	0.0093
Boom/Crane Truck	off	Cranes	235	0.0180	0.3906	0.3486	0.0007	0.0132	0.0132	75.0282	0.0230
Bucket Truck	off	Aerial Lifts	350	0.0287	0.6219	0.5549	0.0012	0.0211	0.0211	119.1893	0.0365
Bull Wheel Puller	off	other construction equipment	300	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Cable-pulling Truck with single axle cable dolly	off	other construction equipment	9	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014
Compressor Trailer	off	Air Compressors	120	0.0152	0.4698	0.2946	0.0008	0.0142	0.0142	72.1662	0.0076
Crane	off	Cranes	300	0.0230	0.4987	0.4450	0.0009	0.0169	0.0169	95.6017	0.0293
Drill Rig	off	Bore/Drill Rigs	500	0.0271	0.5875	0.5243	0.0011	0.0199	0.0199	111.6623	0.0342
Drum Type Compactor	off	Rollers	250	0.0251	0.5445	0.4859	0.0010	0.0184	0.0184	104.6572	0.0321
Earth Movers	off	Crawler Tractors	350	0.0398	0.8627	0.7698	0.0016	0.0292	0.0292	166.7015	0.0511
Excavator	off	Excavators	152	0.0151	0.4650	0.2915	0.0006	0.0141	0.0141	62.6460	0.0192
Forklift	off	Forklifts	100	0.0053	0.1631	0.1208	0.0002	0.0085	0.0085	21.9459	0.0067
Medium Duty Splicing Lab Truck	off	Generator Sets	15	0.0171	0.0881	0.1186	0.0002	0.0061	0.0061	13.9070	0.0015
Motor Grader	off	Graders	350	0.0380	0.8225	0.7340	0.0015	0.0278	0.0278	157.7386	0.0483
Paving Roller	off	Rollers	46	0.0462	0.1984	0.1965	0.0002	0.0168	0.0154	21.3887	0.0066
Puller	off	other construction equipment	300	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Reach Manlift	off	Aerial Lifts	50	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058
Road Grader	off	Graders	350	0.0380	0.8225	0.7340	0.0015	0.0278	0.0278	157.7386	0.0483
Rough Terrain Crane (M)	off	Cranes	350	0.0269	0.5818	0.5191	0.0011	0.0197	0.0197	111.5353	0.0342
Rough Terrain Forklift	off	Forklifts	200	0.0106	0.2293	0.2046	0.0004	0.0078	0.0078	44.0591	0.0135
Scissor Lift	off	Aerial Lifts	50	0.0071	0.1083	0.1186	0.0002	0.0027	0.0025	18.0395	0.0058
Skip Loader	off	Tractors/Loaders/Backhoes	100	0.0098	0.3018	0.2235	0.0004	0.0157	0.0157	20.0027	0.0126
Sock Line Puller	off	other construction equipment	300	0.0333	0.7222	0.6445	0.0014	0.0244	0.0244	139.2049	0.0427
Splicing Van	off	other construction equipment	15	0.0173	0.0785	0.0753	0.0001	0.0066	0.0061	7.7501	0.0024
Static Truck/ Tensioner	off	other construction equipment	350	0.0389	0.8426	0.7519	0.0016	0.0285	0.0285	162.4058	0.0498
Track Type Dozer	off	Crawler Tractors	350	0.0398	0.8627	0.7698	0.0016	0.0292	0.0292	166.7015	0.0511
Tracker	off	Tractors/Loaders/Backhoes	120	0.0117	0.3622	0.2211	0.0005	0.0110	0.0110	49.2162	0.0151
Tractor	off	Tractors/Loaders/Backhoes	45	0.0438	0.2088	0.1876	0.0002	0.0159	0.0146	20.0027	0.0061
Truck pulling Reel Dolly	off	other construction equipment	9	0.0104	0.0471	0.0452	0.0000	0.0040	0.0037	4.6501	0.0014
Work Truck with attached Auger	off	Bore/Drill Rigs	500	0.0271	0.5875	0.5243	0.0011	0.0199	0.0199	111.6623	0.0342

Equipment Type	On Road Use?	On Road Type	ROG (lbs/mi)	CO (lbs/mi)	NOx (lbs/mi)	SOx (lbs/mi)	PM10 (lbs/mi)	PM2.5 (lbs/mi)	CO2 (lbs/mi)	CH4 (lbs/mi)
1 Ton Crew Cab, 4x4	on	delivery	0.00150	0.00998	0.01070	0.00003	0.00043	0.00035	2.84005	0.00007
15-ton Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
17-ton Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
20-ton Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
3 Drum Sock Line Puller	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
3/4 Ton Truck, 4x4	on	delivery	0.00150	0.00998	0.01070	0.00003	0.00043	0.00035	2.84005	0.00007
30 Ton Rough Terrain Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
40 Ton Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
50-ton Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Auger Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Boom/Crane Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Bucket Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Bull Wheel Puller	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Cable Chopping Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Cable-pulling Truck with single axle cable dolly	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Carry all Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Commander Truck	on	delivery	0.00150	0.00998	0.01070	0.00003	0.00043	0.00035	2.84005	0.00007
Concrete Mixer Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Concrete Pump Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Crane	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Drill Rig	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Dump Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Extendable Flat Bed Pole Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Flat Bed Pole Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Flat Bed Truck/Trailer	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Lowboy Truck/Trailer	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Maintenance Truck	on	passenger	0.00060	0.00538	0.00051	0.00001	0.00009	0.00006	1.10627	0.00005
Medium Duty Splicing Lab Truck	on	delivery	0.00150	0.00998	0.01070	0.00003	0.00043	0.00035	2.84005	0.00007
Pipe Truck/Trailer	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Puller	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Single axle Trailer	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Sock Line Puller	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Splicing Van	on	delivery	0.00150	0.00998	0.01070	0.00003	0.00043	0.00035	2.84005	0.00007
Stake Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Survey Truck	on	passenger	0.00060	0.00538	0.00051	0.00001	0.00009	0.00006	1.10627	0.00005
Test Truck	on	passenger	0.00060	0.00538	0.00051	0.00001	0.00009	0.00006	1.10627	0.00005
Tool Trailer	on	passenger	0.00060	0.00538	0.00051	0.00001	0.00009	0.00006	1.10627	0.00005
Truck pulling Reel Dolly	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Truck, Semi	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Water Truck	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Wire Truck/Trailer	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Work Truck with attached Auger	on	hhdt	0.00145	0.00651	0.01690	0.00004	0.00085	0.00070	4.20820	0.00007
Worker Commute	on	passenger	0.00060	0.00538	0.00051	0.00001	0.00009	0.00006	1.10627	0.00005

Component	Component	Activity	Equipment Type	Off Road Use	Equipment Quantity	Duration of Use (hours/day)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)
Substation	Circle City Substation	Grading	Earth Movers	off	2	8	2.043	13.988	26.699	0.026	1.033	0.951	2667.224	0.817
Substation	Circle City Substation	Grading	Tracker	off	1	8	0.392	2.961	3.766	0.004	0.283	0.261	393.730	0.121
Substation	Circle City Substation	Fencing	Bobcat	off	1	8	0.125	1.624	1.608	0.002	0.086	0.080	243.894	0.075
Substation	Circle City Substation	Temporary Power-Pole Installation	Work Truck with attached Auger	off	1	8	0.314	1.992	4.558	0.009	0.131	0.121	893.298	0.274
Substation	Circle City Substation	Civil	Drill Rig	off	2	8	0.627	3.985	9.117	0.017	0.262	0.241	1786.595	0.547
Substation	Circle City Substation	Civil	Bobcat	off	3	8	0.375	4.873	4.825	0.007	0.259	0.239	731.681	0.224
Substation	Circle City Substation	Civil	Backhoe/Front Loader	off	2	8	0.760	3.403	10.547	0.013	0.344	0.317	1296.901	0.397
Substation	Circle City Substation	Civil	Excavator	off	1	8	0.335	3.168	3.719	0.005	0.183	0.168	501.168	0.154
Substation	Circle City Substation	Civil	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
Substation	Circle City Substation	Civil	Forklift	off	2	6	0.356	2.105	3.078	0.003	0.254	0.234	263.351	0.081
Substation	Circle City Substation	Civil	Crane	off	2	4	0.629	5.443	8.028	0.007	0.326	0.300	764.814	0.234
Substation	Circle City Substation	Electrical	Forklift	off	2	8	0.474	2.807	4.104	0.003	0.339	0.312	351.134	0.108
Substation	Circle City Substation	Electrical	Scissor Lift	off	2	8	0.114	1.733	1.897	0.003	0.043	0.040	288.632	0.093
Substation	Circle City Substation	Electrical	Crane	off	2	8	1.259	10.887	16.056	0.015	0.652	0.600	1529.627	0.469
Substation	Circle City Substation	Electrical	Crane	off	1	6	0.472	4.082	6.021	0.006	0.244	0.225	573.610	0.176
Substation	Circle City Substation	Electrical	Crane	off	1	6	0.472	4.082	6.021	0.006	0.244	0.225	573.610	0.176
Substation	Circle City Substation	Electrical	Bucket Truck	off	3	8	1.411	5.725	26.739	0.028	0.600	0.552	2860.543	0.876
Substation	Circle City Substation	Wiring	Bucket Truck	off	2	4	0.470	1.908	8.913	0.009	0.200	0.184	953.514	0.292
Substation	Circle City Substation	Transformers	Crane	off	1	4	0.315	2.722	4.014	0.004	0.163	0.150	382.407	0.117
Substation	Circle City Substation	Transformers	Forklift	off	1	6	0.178	1.053	1.539	0.001	0.127	0.117	131.675	0.040
Substation	Circle City Substation	Transformers	Crane	off	2	4	0.629	5.443	8.028	0.007	0.326	0.300	764.814	0.234
Substation	Circle City Substation	Transformers	Bucket Truck	off	2	6	0.705	2.862	13.370	0.014	0.300	0.276	1430.272	0.438
Substation	Circle City Substation	Asphalting	Paving Roller	off	1	8	0.369	1.587	1.572	0.002	0.134	0.124	171.110	0.052
Substation	Circle City Substation	Asphalting	Asphalt Paver	off	1	8	0.438	3.449	4.901	0.005	0.241	0.222	561.809	0.172
Substation	Circle City Substation	Asphalting	Asphalt Curb Machine	off	1	8	0.206	1.068	1.051	0.001	0.080	0.073	121.924	0.037
Substation	Circle City Substation	Asphalting	Tractor	off	1	8	0.351	1.671	1.500	0.002	0.127	0.117	160.021	0.049
ML Sub	Mira Loma Substation	Civil	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML Sub	Mira Loma Substation	Civil	Bobcat	off	1	8	0.125	1.624	1.608	0.002	0.086	0.080	243.894	0.075
ML Sub	Mira Loma Substation	Civil	Drill Rig	off	1	4	0.157	0.996	2.279	0.004	0.066	0.060	446.649	0.137
ML Sub	Mira Loma Substation	Electrical	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
ML Sub	Mira Loma Substation	Electrical	Bucket Truck	off	2	6	0.705	2.862	13.370	0.014	0.300	0.276	1430.272	0.438
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Boom/Crane Truck	off	1	2	0.168	0.717	2.000	0.001	0.089	0.082	150.056	0.046
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Rough Terrain Forklift	off	1	6	0.262	1.107	3.043	0.003	0.133	0.123	264.354	0.081
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Road Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Backhoe/Front Loader	off	1	4	0.190	0.851	2.637	0.003	0.086	0.079	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Track Type Dozer	off	1	6	0.766	5.245	10.012	0.010	0.387	0.356	1000.209	0.306
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Road Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Backhoe/Front Loader	off	1	4	0.190	0.851	2.637	0.003	0.086	0.079	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Drum Type Compactor	off	1	4	0.230	1.180	3.285	0.004	0.108	0.100	418.629	0.128
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Track Type Dozer	off	1	4	0.511	3.497	6.675	0.007	0.258	0.238	666.806	0.204
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Excavator	off	1	4	0.168	1.584	1.860	0.002	0.091	0.084	250.584	0.077
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Bucket Truck	off	1	4	0.235	0.954	4.457	0.005	0.100	0.092	476.757	0.146
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Bucket Truck	off	1	6	0.353	1.431	6.685	0.007	0.150	0.138	715.136	0.219
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Boom/Crane Truck	off	1	4	0.337	1.433	4.000	0.003	0.178	0.164	300.113	0.092
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Backhoe/Front Loader	off	1	4	0.190	0.851	2.637	0.003	0.086	0.079	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	30 Ton Rough Terrain Crane	off	1	6	0.472	4.082	6.021	0.006	0.244	0.225	573.610	0.176
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Bucket Truck	off	1	6	0.353	1.431	6.685	0.007	0.150	0.138	715.136	0.219
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bucket Truck	off	4	8	1.881	7.633	35.652	0.037	0.800	0.736	3814.058	1.169
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	3 Drum Sock Line Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bull Wheel Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Static Truck/ Tensioner	off	1	6	0.564	4.125	7.344	0.010	0.269	0.247	974.435	0.299
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Backhoe/Front Loader	off	1	2	0.095	0.425	1.318	0.002	0.043	0.040	162.113	0.050
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Bucket Truck	off	1	4	0.235	0.954	4.457	0.005	0.100	0.092	476.757	0.146
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Road Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Backhoe/Front Loader	off	1	2	0.095	0.425	1.318	0.002	0.043	0.040	162.113	0.050
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Drum Type Compactor	off	1	4	0.230	1.180	3.285	0.004	0.108	0.100	418.629	0.128
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Excavator	off	1	6	0.252	2.376	2.789	0.004	0.137	0.126	375.876	0.115
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	165 Ton Crane	off	1	6	0.472	4.082	6.021	0.006	0.244	0.225	573.610	0.176
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Boom/Crane Truck	off	1	2	0.168	0.717	2.000	0.001	0.089	0.082	150.056	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Rough Terrain Forklift	off	1	6	0.262	1.107	3.043	0.003	0.133	0.123	264.354	0.081
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Track Type Dozer	off	1	6	0.766	5.245	10.012	0.010	0.387	0.356	1000.209	0.306
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Motor Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Backhoe/Front Loader	off	1	4	0.190	0.851	2.637	0.003	0.086	0.079	324.225	0.099
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Track Type Dozer	off	1	4	0.511	3.497	6.675	0.007	0.258	0.238	666.806	0.204
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Motor Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Drum Type Compactor	off	1	6	0.345	1.770	4.927	0.006	0.163	0.150	627.943	0.192
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Excavator	off	1	4	0.168	1.584	1.860	0.002	0.091	0.084	250.584	0.077
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Bucket Truck	off	1	4	0.235	0.954	4.457	0.005	0.100	0.092	476.757	0.146
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Boom/Crane Truck	off	2	8	1.348	5.732	15.999	0.012	0.713	0.656	1200.451	0.368
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bull Wheel Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Sock Line Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Static Truck/ Tensioner	off	1	6	0.564	4.125	7.344	0.010	0.269	0.247	974.435	0.299
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Bucket Truck	off	1	6	0.353	1.431	6.685	0.007	0.150	0.138	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Compressor Trailer	off	1	8	0.682	3.832	4.482	0.006	0.356	0.356	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Rough Terrain Crane (M)	off	1	6	0.551	4.763	7.024	0.007	0.285	0.262	669.212	0.205
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Compressor Trailer	off	1	8	0.682	3.832	4.482	0.006	0.356	0.356	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Rough Terrain Crane (M)	off	1	6	0.551	4.763	7.024	0.007	0.285	0.262	669.212	0.205
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Compressor Trailer	off	1	8	0.682	3.832	4.482	0.006	0.356	0.356	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Excavator	off	1	4	0.168	1.584	1.860	0.002	0.091	0.084	250.584	0.077
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Boom/Crane Truck	off	1	4	0.337	1.433	4.000	0.003	0.178	0.164	300.113	0.092
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Compressor Trailer	off	1	6	0.511	2.874	3.362	0.005	0.267	0.267	432.997	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Compressor Trailer	off	1	6	0.511	2.874	3.362	0.005	0.267	0.267	432.997	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Bucket Truck	off	1	6	0.353	1.431	6.685	0.007	0.150	0.138	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bucket Truck	off	4	8	1.881	7.633	35.652	0.037	0.800	0.736	3814.058	1.169
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Boom/Crane Truck	off	1	8	0.674	2.866	7.999	0.006	0.357	0.328	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Sock Line Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bull Wheel Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Static Truck/ Tensioner	off	1	6	0.564	4.125	7.344	0.010	0.269	0.247	974.435	0.299
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Backhoe/Front Loader	off	1	2	0.095	0.425	1.318	0.002	0.043	0.040	162.113	0.050
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Bucket Truck	off	1	4	0.235	0.954	4.457	0.005	0.100	0.092	476.757	0.146
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Motor Grader	off	1	6	0.634	3.241	6.752	0.009	0.264	0.243	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Drum Type Compactor	off	1	4	0.230	1.180	3.285	0.004	0.108	0.100	418.629	0.128
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Excavator	off	1	6	0.252	2.376	2.789	0.004	0.137	0.126	375.876	0.115
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Crane	off	1	6	0.472	4.082	6.021	0.006	0.244	0.225	573.610	0.176
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Compressor Trailer	off	1	4	0.341	1.916	2.241	0.003	0.178	0.178	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Backhoe/Front Loader	off	1	6	0.285	1.276	3.955	0.005	0.129	0.119	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Bucket Truck	off	1	6	0.353	1.431	6.685	0.007	0.150	0.138	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Boom/Crane Truck	off	1	6	0.505	2.150	6.000	0.004	0.267	0.246	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Puller	off	1	6	0.483	3.535	6.295	0.008	0.230	0.212	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Static Truck/ Tensioner	off	1	6	0.564	4.125	7.344	0.010	0.269	0.247	974.435	0.299
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Medium Duty Splicing Lab Truck	off	2	8	0.274	1.409	1.898	0.003	0.098	0.098	222.512	0.025
Telecommunications	Telecommunication Facilities	Underground Conduit	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
Substation	Circle City Substation	Vault Installation	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
Substation	Circle City Substation	Vault Installation	40 Ton Crane	off	1	8	0.629	5.443	8.028	0.007	0.326	0.300	764.814	0.234
Substation	Circle City Substation	Trench/Duct Installation	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	40 Ton Crane	off	1	8	0.629	5.443	8.028	0.007	0.326	0.300	764.814	0.234
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	off	2	8	0.940	3.817	17.826	0.019	0.400	0.368	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Splicing Van	off	1	8	0.138	0.628	0.602	0.001	0.053	0.049	62.001	0.019
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable-pulling Truck with single axle cable dolly	off	2	8	0.166	0.754	0.723	0.001	0.064	0.059	74.401	0.023
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Backhoe/Front Loader	off	1	8	0.380	1.701	5.274	0.006	0.172	0.158	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	40 Ton Crane	off	1	8	0.629	5.443	8.028	0.007	0.326	0.300	764.814	0.234

Component	Component	Activity	Equipment Type	Off Road Use	Equipment Quantity	Duration of Use (hours/day)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)
Substation	Circle City Substation	Grading	Earth Movers	off	2	8	0.637	13.803	12.316	0.026	0.467	0.467	2667.224	0.817
Substation	Circle City Substation	Grading	Tracker	off	1	8	0.094	2.897	1.769	0.004	0.088	0.088	393.730	0.121
Substation	Circle City Substation	Fencing	Bobcat	off	1	8	0.125	1.624	1.608	0.002	0.086	0.080	243.894	0.075
Substation	Circle City Substation	Temporary Power-Pole Installation	Work Truck with attached Auger	off	1	8	0.217	4.700	4.194	0.009	0.159	0.159	893.298	0.274
Substation	Circle City Substation	Civil	Drill Rig	off	2	8	0.434	9.401	8.388	0.017	0.318	0.318	1786.596	0.547
Substation	Circle City Substation	Civil	Bobcat	off	3	8	0.375	4.873	4.825	0.007	0.259	0.239	731.681	0.224
Substation	Circle City Substation	Civil	Backhoe/Front Loader	off	2	8	0.313	6.787	6.056	0.013	0.230	0.230	1296.901	0.397
Substation	Circle City Substation	Civil	Excavator	off	1	8	0.121	3.720	2.332	0.005	0.113	0.113	501.168	0.154
Substation	Circle City Substation	Civil	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
Substation	Circle City Substation	Civil	Forklift	off	2	6	0.063	1.958	1.450	0.003	0.102	0.102	263.351	0.081
Substation	Circle City Substation	Civil	Crane	off	2	4	0.184	3.989	3.560	0.007	0.135	0.135	764.814	0.234
Substation	Circle City Substation	Electrical	Forklift	off	2	8	0.085	2.610	1.933	0.003	0.135	0.135	351.134	0.108
Substation	Circle City Substation	Electrical	Scissor Lift	off	2	8	0.114	1.733	1.897	0.003	0.043	0.040	288.632	0.093
Substation	Circle City Substation	Electrical	Crane	off	2	8	0.368	7.979	7.120	0.015	0.270	0.270	1529.627	0.469
Substation	Circle City Substation	Electrical	Crane	off	1	6	0.138	2.992	2.670	0.006	0.101	0.101	573.610	0.176
Substation	Circle City Substation	Electrical	Crane	off	1	6	0.138	2.992	2.670	0.006	0.101	0.101	573.610	0.176
Substation	Circle City Substation	Electrical	Bucket Truck	off	3	8	0.689	14.926	13.319	0.028	0.505	0.505	2860.543	0.876
Substation	Circle City Substation	Wiring	Bucket Truck	off	2	4	0.230	4.975	4.440	0.009	0.168	0.168	953.514	0.292
Substation	Circle City Substation	Transformers	Crane	off	1	4	0.092	1.995	1.780	0.004	0.068	0.068	382.407	0.117
Substation	Circle City Substation	Transformers	Forklift	off	1	6	0.032	0.979	0.725	0.001	0.051	0.051	131.675	0.040
Substation	Circle City Substation	Transformers	Crane	off	2	4	0.184	3.989	3.560	0.007	0.135	0.135	764.814	0.234
Substation	Circle City Substation	Transformers	Bucket Truck	off	2	6	0.344	7.463	6.659	0.014	0.253	0.253	1430.272	0.438
Substation	Circle City Substation	Asphalting	Paving Roller	off	1	8	0.369	1.587	1.572	0.002	0.134	0.124	171.110	0.052
Substation	Circle City Substation	Asphalting	Asphalt Paver	off	1	8	0.135	4.166	2.612	0.005	0.126	0.126	561.809	0.172
Substation	Circle City Substation	Asphalting	Asphalt Curb Machine	off	1	8	0.206	1.068	1.051	0.001	0.080	0.073	121.924	0.037
Substation	Circle City Substation	Asphalting	Tractor	off	1	8	0.351	1.671	1.500	0.002	0.127	0.117	160.021	0.049
ML Sub	Mira Loma Substation	Civil	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML Sub	Mira Loma Substation	Civil	Bobcat	off	1	8	0.125	1.624	1.608	0.002	0.086	0.080	243.894	0.075
ML Sub	Mira Loma Substation	Civil	Drill Rig	off	1	4	0.108	2.350	2.097	0.004	0.080	0.080	446.649	0.137
ML Sub	Mira Loma Substation	Electrical	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
ML Sub	Mira Loma Substation	Electrical	Bucket Truck	off	2	6	0.344	7.463	6.659	0.014	0.253	0.253	1430.272	0.438
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Boom/Crane Truck	off	1	2	0.036	0.781	0.697	0.001	0.026	0.026	150.056	0.046
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Rough Terrain Forklift	off	1	6	0.063	1.376	1.228	0.003	0.047	0.047	264.354	0.081
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Road Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Backhoe/Front Loader	off	1	4	0.078	1.697	1.514	0.003	0.057	0.057	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Track Type Dozer	off	1	6	0.239	5.176	4.619	0.010	0.175	0.175	1000.209	0.306
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Road Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Backhoe/Front Loader	off	1	4	0.078	1.697	1.514	0.003	0.057	0.057	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Drum Type Compactor	off	1	4	0.101	2.178	1.944	0.004	0.074	0.074	418.629	0.128
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Track Type Dozer	off	1	4	0.159	3.451	3.079	0.007	0.117	0.117	666.806	0.204
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Excavator	off	1	4	0.060	1.860	1.166	0.002	0.056	0.056	250.584	0.077
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Bucket Truck	off	1	4	0.115	2.488	2.220	0.005	0.084	0.084	476.757	0.146
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Bucket Truck	off	1	6	0.172	3.732	3.330	0.007	0.126	0.126	715.136	0.219
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Boom/Crane Truck	off	1	4	0.072	1.563	1.394	0.003	0.053	0.053	300.113	0.092
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Backhoe/Front Loader	off	1	4	0.078	1.697	1.514	0.003	0.057	0.057	324.225	0.099
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	30 Ton Rough Terrain Crane	off	1	6	0.138	2.992	2.670	0.006	0.101	0.101	573.610	0.176
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Bucket Truck	off	1	6	0.172	3.732	3.330	0.007	0.126	0.126	715.136	0.219
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bucket Truck	off	4	8	0.919	19.902	17.758	0.037	0.674	0.674	3814.058	1.169
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	3 Drum Sock Line Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bull Wheel Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Static Truck/ Tensioner	off	1	6	0.233	5.056	4.511	0.010	0.171	0.171	974.435	0.299
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Backhoe/Front Loader	off	1	2	0.039	0.848	0.757	0.002	0.029	0.029	162.113	0.050
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Bucket Truck	off	1	4	0.115	2.488	2.220	0.005	0.084	0.084	476.757	0.146
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Road Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Backhoe/Front Loader	off	1	2	0.039	0.848	0.757	0.002	0.029	0.029	162.113	0.050
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Drum Type Compactor	off	1	4	0.101	2.178	1.944	0.004	0.074	0.074	418.629	0.128
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Excavator	off	1	6	0.090	2.790	1.749	0.004	0.084	0.084	375.876	0.115
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	165 Ton Crane	off	1	6	0.138	2.992	2.670	0.006	0.101	0.101	573.610	0.176
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Boom/Crane Truck	off	1	2	0.036	0.781	0.697	0.001	0.026	0.026	150.056	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Rough Terrain Forklift	off	1	6	0.063	1.376	1.228	0.003	0.047	0.047	264.354	0.081
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Track Type Dozer	off	1	6	0.239	5.176	4.619	0.010	0.175	0.175	1000.209	0.306
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Motor Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Backhoe/Front Loader	off	1	4	0.078	1.697	1.514	0.003	0.057	0.057	324.225	0.099
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Track Type Dozer	off	1	4	0.159	3.451	3.079	0.007	0.117	0.117	666.806	0.204
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Motor Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Drum Type Compactor	off	1	6	0.151	3.267	2.915	0.006	0.111	0.111	627.943	0.192
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Excavator	off	1	4	0.060	1.860	1.166	0.002	0.056	0.056	250.584	0.077
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Bucket Truck	off	1	4	0.115	2.488	2.220	0.005	0.084	0.084	476.757	0.146
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Boom/Crane Truck	off	2	8	0.288	6.250	5.577	0.012	0.212	0.212	1200.451	0.368
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bull Wheel Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Sock Line Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Static Truck/ Tensioner	off	1	6	0.233	5.056	4.511	0.010	0.171	0.171	974.435	0.299
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Bucket Truck	off	1	6	0.172	3.732	3.330	0.007	0.126	0.126	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Compressor Trailer	off	1	8	0.122	3.759	2.357	0.006	0.114	0.114	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Rough Terrain Crane (M)	off	1	6	0.161	3.491	3.115	0.007	0.118	0.118	669.212	0.205
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Compressor Trailer	off	1	8	0.122	3.759	2.357	0.006	0.114	0.114	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Rough Terrain Crane (M)	off	1	6	0.161	3.491	3.115	0.007	0.118	0.118	669.212	0.205
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Compressor Trailer	off	1	8	0.122	3.759	2.357	0.006	0.114	0.114	577.329	0.061
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Excavator	off	1	4	0.060	1.860	1.166	0.002	0.056	0.056	250.584	0.077
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Boom/Crane Truck	off	1	4	0.072	1.563	1.394	0.003	0.053	0.053	300.113	0.092
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Compressor Trailer	off	1	6	0.091	2.819	1.768	0.005	0.085	0.085	432.997	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Compressor Trailer	off	1	6	0.091	2.819	1.768	0.005	0.085	0.085	432.997	0.046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Bucket Truck	off	1	6	0.172	3.732	3.330	0.007	0.126	0.126	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bucket Truck	off	4	8	0.919	19.902	17.758	0.037	0.674	0.674	3814.058	1.169
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Boom/Crane Truck	off	1	8	0.144	3.125	2.789	0.006	0.106	0.106	600.225	0.184
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Sock Line Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bull Wheel Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Static Truck/ Tensioner	off	1	6	0.233	5.056	4.511	0.010	0.171	0.171	974.435	0.299
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Backhoe/Front Loader	off	1	2	0.039	0.848	0.757	0.002	0.029	0.029	162.113	0.050
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Bucket Truck	off	1	4	0.115	2.488	2.220	0.005	0.084	0.084	476.757	0.146
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Motor Grader	off	1	6	0.228	4.935	4.404	0.009	0.167	0.167	946.432	0.290
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Drum Type Compactor	off	1	4	0.101	2.178	1.944	0.004	0.074	0.074	418.629	0.128
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Excavator	off	1	6	0.090	2.790	1.749	0.004	0.084	0.084	375.876	0.115
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Crane	off	1	6	0.138	2.992	2.670	0.006	0.101	0.101	573.610	0.176
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Compressor Trailer	off	1	4	0.061	1.879	1.178	0.003	0.057	0.057	288.665	0.030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Backhoe/Front Loader	off	1	6	0.117	2.545	2.271	0.005	0.086	0.086	486.338	0.149
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Bucket Truck	off	1	6	0.172	3.732	3.330	0.007	0.126	0.126	715.136	0.219
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Boom/Crane Truck	off	1	6	0.108	2.344	2.091	0.004	0.079	0.079	450.169	0.138
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Puller	off	1	6	0.200	4.333	3.867	0.008	0.147	0.147	835.229	0.256
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Static Truck/ Tensioner	off	1	6	0.233	5.056	4.511	0.010	0.171	0.171	974.435	0.299
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Medium Duty Splicing Lab Truck	off	2	8	0.274	1.409	1.898	0.003	0.098	0.098	222.512	0.025
Telecommunications	Telecommunication Facilities	Underground Conduit	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
Substation	Circle City Substation	Vault Installation	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
Substation	Circle City Substation	Vault Installation	40 Ton Crane	off	1	8	0.184	3.989	3.560	0.007	0.135	0.135	764.814	0.234
Substation	Circle City Substation	Trench/Duct Installation	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Truck pulling reel dolly	off	1	8	0.083	0.377	0.361	0.000	0.032	0.029	37.201	0.011
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	40 Ton Crane	off	1	8	0.184	3.989	3.560	0.007	0.135	0.135	764.814	0.234
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	off	2	8	0.459	9.951	8.879	0.019	0.337	0.337	1907.029	0.584
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Splicing Van	off	1	8	0.138	0.628	0.602	0.001	0.053	0.049	62.001	0.019
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable-pulling Truck with single axle cable dolly	off	2	8	0.166	0.754	0.723	0.001	0.064	0.059	74.401	0.023
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Backhoe/Front Loader	off	1	8	0.157	3.393	3.028	0.006	0.115	0.115	648.450	0.199
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	40 Ton Crane	off	1	8	0.184	3.989	3.560	0.007	0.135	0.135	764.814	0.234

Component	Component	Activity	Equipment Type	On Road Use?	Equipment Quantity	Number of Trips per Day	On Site Distance (miles)	Off Site Paved Distance (miles)	Off Site Unpaved Distance (miles)	Off Site Distance Total (miles)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)
Substation	Circle City Substation	Survey	Survey Truck	on	1	1	1	20	0	20	0.0126	0.1130	0.0108	0.0002	0.0020	0.0013	23.2318	0.0011
Substation	Circle City Substation	Survey	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Substation	Circle City Substation	Grading	Water Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Grading	Dump Truck	on	2	29	0	20	0	20	1.6844	7.5462	19.6085	0.0468	0.9848	0.8088	4881.5135	0.0780
Substation	Circle City Substation	Grading	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Substation	Circle City Substation	Soil Import / Export	Dump Truck	on	10	19	0	20	0	20	5.5177	24.7203	64.2347	0.1533	3.2260	2.6494	15991.1649	0.2554
Substation	Circle City Substation	Soil Import / Export	Worker Commute	on	10	1	0	60	0	60	0.3607	3.2273	0.3078	0.0065	0.0567	0.0372	663.7649	0.0318
Substation	Circle City Substation	Fencing	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Fencing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Fencing	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Temporary Power-Pole Installation	Work Truck with attached Auger	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Temporary Power-Pole Installation	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Substation	Circle City Substation	Civil	Drill Rig	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Tool Trailer	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Civil	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Civil	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Civil	Water Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Worker Commute	on	30	1	0	60	0	60	1.0820	9.6820	0.9233	0.0194	0.1700	0.1115	1991.2948	0.0954
Substation	Circle City Substation	Civil	Dump Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	Civil	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Concrete Mixer Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	MEER	Carry all Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	MEER	Stake Truck	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	MEER	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Electrical	Tool Trailer	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
Substation	Circle City Substation	Electrical	Commander Truck	on	1	1	1	0	0	0	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001
Substation	Circle City Substation	Electrical	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Electrical	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Electrical	Worker Commute	on	25	1	0	60	0	60	0.9016	8.0684	0.7695	0.0162	0.1417	0.0929	1659.4123	0.0795
Substation	Circle City Substation	Electrical	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Electrical	Flat Bed Truck/Trailer	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	Wiring	Bucket Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Wiring	Tool Trailer	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Wiring	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Transformers	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Transformers	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Transformers	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Transformers	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Transformers	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Maintenance Crew Equipment Check	Maintenance Truck	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Maintenance Crew Equipment Check	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Testing	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Testing	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Asphalting	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Asphalting	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Asphalting	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
ML Sub	Mira Loma Substation	Civil	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Civil	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Civil	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
ML Sub	Mira Loma Substation	Civil	Drill Rig	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
ML Sub	Mira Loma Substation	Electrical	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Electrical	Boom/Crane Truck	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
ML Sub	Mira Loma Substation	Electrical	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
ML Sub	Mira Loma Substation	Maintenance Commission	Maintenance Truck	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
ML Sub	Mira Loma Substation	Maintenance Commission	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
ML Sub	Mira Loma Substation	Test	Test Truck	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
ML Sub	Mira Loma Substation	Test	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
66 Subtrans Line	Source Line Routes 1 and 2	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Survey	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Truck, Semi	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Dump Truck	on	1	5	0	20	0	20	0.1452	0.6505	1.6904	0.0040	0.0849	0.0697	420.8201	0.0067
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	30 Ton Rough Terrain Crane	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	0	20	0.0947	0.6288	0.6741	0.0017	0.0272	0.0218	178.9232	0.0042
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bucket Truck	on	4	1	2	20	0	20	0.1278	0.5725	1.4875	0.0035	0.0747	0.0614	370.3217	0.0059
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Wire Truck/Trailer	on	2	1	1	20	0	20	0.0610	0.2732	0.7100	0.0017	0.0357	0.0293	176.7445	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	3 Drum Sock Line Puller	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bull Wheel Puller	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Worker Commute	on	20	1	0	60	0	60	0.7213	6.4547	0.6156	0.0130	0.1134	0.0743	1327.5299	0.0636
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Truck, Semi	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Worker Commute	on	5	1	0	60	2	62	0.1863	1.6675	0.1590	0.0033	0.0293	0.0192	342.9452	0.0164
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Worker Commute	on	5	1	0	60	2	62	0.1863	1.6675	0.1590	0.0033	0.0293	0.0192	342.9452	0.0164

ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bucket Truck	on	2	1	2	20	2	22	0.0697	0.3123	0.8114	0.0019	0.0407	0.0335	201.9937	0.0032
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Boom/Crane Truck	on	2	1	2	20	2	22	0.0697	0.3123	0.8114	0.0019	0.0407	0.0335	201.9937	0.0032
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bull Wheel Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Sock Line Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Lowboy Truck/Trailer	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Worker Commute	on	14	1	0	60	2	62	0.5217	4.6689	0.4453	0.0094	0.0820	0.0537	960.2466	0.0460
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Dump Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Dump Truck	on	1	6	0	20	2	22	0.1917	0.8587	2.2313	0.0053	0.1121	0.0920	555.4826	0.0089
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	2	22	0.1037	0.6887	0.7383	0.0019	0.0298	0.0239	195.9635	0.0046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bucket Truck	on	4	1	2	20	2	22	0.1394	0.6245	1.6228	0.0039	0.0815	0.0669	403.9873	0.0065
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Dump Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Wire Truck/Trailer	on	2	1	1	20	2	22	0.0668	0.2992	0.7776	0.0019	0.0391	0.0321	193.5773	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Sock Line Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bull Wheel Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Worker Commute	on	20	1	0	60	2	62	0.7454	6.6699	0.6361	0.0134	0.1171	0.0768	1371.7809	0.0657
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Worker Commute	on	7	1	0	60	2	62	0.2609	2.3344	0.2226	0.0047	0.0410	0.0269	480.1233	0.0230
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Dump Truck	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Crane	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Dump Truck	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Wire Truck/Trailer	on	2	1	1	20	2	22	0.0668	0.2992	0.7776	0.0019	0.0391	0.0321	193.5773	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Bucket Truck	on	2	1	2	20	0	20	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Medium Duty Splicing Lab Truck	on	2	1	2	20	0	20	0.0661	0.4392	0.4708	0.0012	0.0190	0.0152	124.9622	0.0029
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Telecommunications	Telecommunication Facilities	Underground Conduit	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Telecommunications	Telecommunication Facilities	Underground Conduit	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
Telecommunications	Telecommunication Facilities	Underground Conduit	Concrete Mixer Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
Substation	Circle City Substation	Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Vault Installation	Water Truck	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Vault Installation	40 Ton Crane	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Substation	Circle City Substation	Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Trench/Duct Installation	Water Truck	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Trench/Duct Installation	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014

ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	40 Ton Crane	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Worker Commute	on	4	1	1	60	0	60	0.1467	1.3125	0.1252	0.0026	0.0230	0.0151	269.9311	0.0129
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Splicing Van	on	1	1	1	0	0	0	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable-pulling Truck with single axle cable dolly	on	2	1	2	20	0	20	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable Chopping Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	0	20	0	20	0.0300	0.1996	0.2140	0.0005	0.0086	0.0069	56.8010	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	40 Ton Crane	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223

Component	Component	Activity	Equipment Type	On Road Use?	Equipment Quantity	Number of Trips per Day	On Site Distance (miles)	Off Site Paved Distance (miles)	Off Site Unpaved Distance (miles)	Off Site Distance Total (miles)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)
Substation	Circle City Substation	Survey	Survey Truck	on	1	1	1	20	0	20	0.0126	0.1130	0.0108	0.0002	0.0020	0.0013	23.2318	0.0011
Substation	Circle City Substation	Survey	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Substation	Circle City Substation	Grading	Water Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Grading	Dump Truck	on	2	29	0	20	0	20	1.6844	7.5462	19.6085	0.0468	0.9848	0.8088	4881.5135	0.0780
Substation	Circle City Substation	Grading	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Substation	Circle City Substation	Soil Import / Export	Dump Truck	on	10	19	0	20	0	20	5.5177	24.7203	64.2347	0.1533	3.2260	2.6494	15991.1649	0.2554
Substation	Circle City Substation	Soil Import / Export	Worker Commute	on	10	1	0	60	0	60	0.3607	3.2273	0.3078	0.0065	0.0567	0.0372	663.7649	0.0318
Substation	Circle City Substation	Fencing	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Fencing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Fencing	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Temporary Power-Pole Installation	Work Truck with attached Auger	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Temporary Power-Pole Installation	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Substation	Circle City Substation	Civil	Drill Rig	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Tool Trailer	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Civil	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Civil	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Civil	Water Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Worker Commute	on	30	1	0	60	0	60	1.0820	9.6820	0.9233	0.0194	0.1700	0.1115	1991.2948	0.0954
Substation	Circle City Substation	Civil	Dump Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	Civil	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Civil	Concrete Mixer Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	MEER	Carry all Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	MEER	Stake Truck	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	MEER	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Electrical	Tool Trailer	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
Substation	Circle City Substation	Electrical	Commander Truck	on	1	1	1	0	0	0	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001
Substation	Circle City Substation	Electrical	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Electrical	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Electrical	Worker Commute	on	25	1	0	60	0	60	0.9016	8.0684	0.7695	0.0162	0.1417	0.0929	1659.4123	0.0795
Substation	Circle City Substation	Electrical	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Electrical	Flat Bed Truck/Trailer	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
Substation	Circle City Substation	Wiring	Bucket Truck	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Wiring	Tool Trailer	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Wiring	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
Substation	Circle City Substation	Transformers	Crane	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
Substation	Circle City Substation	Transformers	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Transformers	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Transformers	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Transformers	Crane	on	2	1	1	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Maintenance Crew Equipment Check	Maintenance Truck	on	2	1	1	0	0	0	0.0012	0.0108	0.0010	0.0000	0.0002	0.0001	2.2125	0.0001
Substation	Circle City Substation	Maintenance Crew Equipment Check	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Testing	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Substation	Circle City Substation	Testing	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
Substation	Circle City Substation	Asphalting	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Asphalting	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Asphalting	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
ML Sub	Mira Loma Substation	Civil	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Civil	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Civil	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
ML Sub	Mira Loma Substation	Civil	Drill Rig	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
ML Sub	Mira Loma Substation	Electrical	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub	Mira Loma Substation	Electrical	Boom/Crane Truck	on	1	1	1	0	0	0	0.0015	0.0065	0.0169	0.0000	0.0008	0.0007	4.2082	0.0001
ML Sub	Mira Loma Substation	Electrical	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
ML Sub	Mira Loma Substation	Maintenance Commission	Maintenance Truck	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
ML Sub	Mira Loma Substation	Maintenance Commission	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
ML Sub	Mira Loma Substation	Test	Test Truck	on	1	1	1	0	0	0	0.0006	0.0054	0.0005	0.0000	0.0001	0.0001	1.1063	0.0001
ML Sub	Mira Loma Substation	Test	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
66 Subtrans Line	Source Line Routes 1 and 2	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Survey	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Truck, Semi	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Dump Truck	on	1	5	0	20	0	20	0.1452	0.6505	1.6904	0.0040	0.0849	0.0697	420.8201	0.0067
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	30 Ton Rough Terrain Crane	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	Worker Commute	on	8	1	0	60	0	60	0.2885	2.5819	0.2462	0.0052	0.0453	0.0297	531.0119	0.0254
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Auger Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	0	20	0.0947	0.6288	0.6741	0.0017	0.0272	0.0218	178.9232	0.0042
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bucket Truck	on	4	1	2	20	0	20	0.1278	0.5725	1.4875	0.0035	0.0747	0.0614	370.3217	0.0059
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Wire Truck/Trailer	on	2	1	1	20	0	20	0.0610	0.2732	0.7100	0.0017	0.0357	0.0293	176.7445	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	3 Drum Sock Line Puller	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bull Wheel Puller	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Worker Commute	on	20	1	0	60	0	60	0.7213	6.4547	0.6156	0.0130	0.1134	0.0743	1327.5299	0.0636
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Bucket Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Dump Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0871	0.3903	1.0142	0.0024	0.0509	0.0418	252.4921	0.0040
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Worker Commute	on	6	1	0	60	0	60	0.2164	1.9364	0.1847	0.0039	0.0340	0.0223	398.2590	0.0191
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Truck, Semi	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Worker Commute	on	5	1	0	60	2	62	0.1863	1.6675	0.1590	0.0033	0.0293	0.0192	342.9452	0.0164
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Worker Commute	on	5	1	0	60	2	62	0.1863	1.6675	0.1590	0.0033	0.0293	0.0192	342.9452	0.0164

ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bucket Truck	on	2	1	2	20	2	22	0.0697	0.3123	0.8114	0.0019	0.0407	0.0335	201.9937	0.0032
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Boom/Crane Truck	on	2	1	2	20	2	22	0.0697	0.3123	0.8114	0.0019	0.0407	0.0335	201.9937	0.0032
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bull Wheel Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Sock Line Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Lowboy Truck/Trailer	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Worker Commute	on	14	1	0	60	2	62	0.5217	4.6689	0.4453	0.0094	0.0820	0.0537	960.2466	0.0460
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Dump Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Dump Truck	on	1	6	0	20	2	22	0.1917	0.8587	2.2313	0.0053	0.1121	0.0920	555.4826	0.0089
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Worker Commute	on	4	1	0	60	2	62	0.1491	1.3340	0.1272	0.0027	0.0234	0.0154	274.3562	0.0131
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Auger Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	2	22	0.1037	0.6887	0.7383	0.0019	0.0298	0.0239	195.9635	0.0046
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bucket Truck	on	4	1	2	20	2	22	0.1394	0.6245	1.6228	0.0039	0.0815	0.0669	403.9873	0.0065
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Dump Truck	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Wire Truck/Trailer	on	2	1	1	20	2	22	0.0668	0.2992	0.7776	0.0019	0.0391	0.0321	193.5773	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Sock Line Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bull Wheel Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Worker Commute	on	20	1	0	60	2	62	0.7454	6.6699	0.6361	0.0134	0.1171	0.0768	1371.7809	0.0657
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	0.0346	0.2296	0.2461	0.0006	0.0099	0.0080	65.3212	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Worker Commute	on	7	1	0	60	2	62	0.2609	2.3344	0.2226	0.0047	0.0410	0.0269	480.1233	0.0230
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Dump Truck	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Crane	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Dump Truck	on	2	1	0	20	2	22	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	2	22	0.0334	0.1496	0.3888	0.0009	0.0195	0.0160	96.7886	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Water Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	0.0958	0.4294	1.1157	0.0027	0.0560	0.0460	277.7413	0.0044
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Worker Commute	on	6	1	0	60	2	62	0.2236	2.0010	0.1908	0.0040	0.0351	0.0230	411.5343	0.0197
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	0.0691	0.4591	0.4922	0.0013	0.0198	0.0159	130.6423	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Bucket Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Boom/Crane Truck	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Wire Truck/Trailer	on	2	1	1	20	2	22	0.0668	0.2992	0.7776	0.0019	0.0391	0.0321	193.5773	0.0031
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Puller	on	1	1	2	20	2	22	0.0348	0.1561	0.4057	0.0010	0.0204	0.0167	100.9968	0.0016
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Worker Commute	on	8	1	0	60	2	62	0.2981	2.6679	0.2544	0.0054	0.0469	0.0307	548.7123	0.0263
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Bucket Truck	on	2	1	2	20	0	20	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Medium Duty Splicing Lab Truck	on	2	1	2	20	0	20	0.0661	0.4392	0.4708	0.0012	0.0190	0.0152	124.9622	0.0029
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Worker Commute	on	2	1	0	60	0	60	0.0721	0.6455	0.0616	0.0013	0.0113	0.0074	132.7530	0.0064
Telecommunications	Telecommunication Facilities	Underground Conduit	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Telecommunications	Telecommunication Facilities	Underground Conduit	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
Telecommunications	Telecommunication Facilities	Underground Conduit	Concrete Mixer Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Telecommunications	Telecommunication Facilities	Underground Conduit	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
Substation	Circle City Substation	Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Vault Installation	Water Truck	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Vault Installation	40 Ton Crane	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
Substation	Circle City Substation	Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
Substation	Circle City Substation	Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
Substation	Circle City Substation	Trench/Duct Installation	Water Truck	on	1	1	2	0	0	0	0.0029	0.0130	0.0338	0.0001	0.0017	0.0014	8.4164	0.0001
Substation	Circle City Substation	Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
Substation	Circle City Substation	Trench/Duct Installation	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014

ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1443	1.2909	0.1231	0.0026	0.0227	0.0149	265.5060	0.0127
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	40 Ton Crane	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Worker Commute	on	4	1	1	60	0	60	0.1467	1.3125	0.1252	0.0026	0.0230	0.0151	269.9311	0.0129
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	0.0631	0.4192	0.4494	0.0011	0.0181	0.0145	119.2821	0.0028
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	9	1	0	60	0	60	0.3246	2.9046	0.2770	0.0058	0.0510	0.0334	597.3884	0.0286
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Single axle Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	0.0058	0.0260	0.0676	0.0002	0.0034	0.0028	16.8328	0.0003
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	0.0316	0.2096	0.2247	0.0006	0.0091	0.0073	59.6411	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Splicing Van	on	1	1	1	0	0	0	0.0015	0.0100	0.0107	0.0000	0.0004	0.0003	2.8401	0.0001
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable-pulling Truck with single axle cable dolly	on	2	1	2	20	0	20	0.0639	0.2862	0.7438	0.0018	0.0374	0.0307	185.1609	0.0030
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable Chopping Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	5	1	0	60	0	60	0.1803	1.6137	0.1539	0.0032	0.0283	0.0186	331.8825	0.0159
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Dump Truck	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	0	20	0	20	0.0300	0.1996	0.2140	0.0005	0.0086	0.0069	56.8010	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Water Truck	on	1	1	2	20	0	20	0.0319	0.1431	0.3719	0.0009	0.0187	0.0153	92.5804	0.0015
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0581	0.2602	0.6762	0.0016	0.0340	0.0279	168.3281	0.0027
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	40 Ton Crane	on	1	1	1	20	0	20	0.0305	0.1366	0.3550	0.0008	0.0178	0.0146	88.3722	0.0014
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0290	0.1301	0.3381	0.0008	0.0170	0.0139	84.1640	0.0013
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	7	1	0	60	0	60	0.2525	2.2591	0.2154	0.0045	0.0397	0.0260	464.6355	0.0223

Component	Component	Activity	Earthwork?	Soil Handling	Grading	Uncontrolled PM10 (lbs/day)	Uncontrolled PM2.5 (lbs/day)	Controlled PM10 (lbs/day)	Controlled PM2.5 (lbs/day)
Substation	Circle City Substation	Grading	yes	0.0	8.0	11.85	2.46	6.52	1.36
Substation	Circle City Substation	Grading	yes	572.3	0.0	0.93	0.19	0.51	0.11
Substation	Circle City Substation	Soil Import / Export	yes	572.3	0.0	0.93	0.19	0.51	0.11
Substation	Circle City Substation	Civil	yes	4.2	0.0	0.01	0.00	0.00	0.00
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	yes	4.0	0.0	0.01	0.00	0.00	0.00
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	yes	55.9	0.0	0.09	0.02	0.05	0.01
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	yes	2.9	0.0	0.00	0.00	0.00	0.00
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	yes	3.5	0.0	0.01	0.00	0.00	0.00
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	yes	0.0	6.0	8.89	1.85	4.89	1.02
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	yes	53.0	0.0	0.09	0.02	0.05	0.01
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	yes	172.2	0.0	0.28	0.06	0.15	0.03
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	yes	0.0	6.0	8.89	1.85	4.89	1.02
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	yes	0.0	6.0	8.89	1.85	4.89	1.02
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	yes	4.3	0.0	0.01	0.00	0.00	0.00
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	yes	55.9	0.0	0.09	0.02	0.05	0.01
							8.51	22.52	4.68

Component	Component	Activity	Equipment Type	On Road Use?	Equipment Quantity	Number of Trips per Day	On Site Distance (miles)	Off Site Paved Distance (miles)	Off Site Unpaved Distance (miles)	Off Site Distance Total (miles)	Uncontrolled PM10 (lbs/day)	Uncontrolled PM2.5 (lbs/day)	Controlled PM10 (lbs/day)	Controlled PM2.5 (lbs/day)
Substation	Circle City Substation	Survey	Survey Truck	on	1	1	1	20	0	20	1.4871	0.1509	0.4208	0.0445
Substation	Circle City Substation	Survey	Worker Commute	on	2	1	0	60	0	60	0.0912	0.0241	0.0912	0.0241
Substation	Circle City Substation	Grading	Water Truck	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Grading	Dump Truck	on	2	29	0	20	0	20	1.0104	0.2772	1.0104	0.2772
Substation	Circle City Substation	Grading	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
Substation	Circle City Substation	Soil Import / Export	Dump Truck	on	10	19	0	20	0	20	3.3098	0.9082	3.3098	0.9082
Substation	Circle City Substation	Soil Import / Export	Worker Commute	on	10	1	0	60	0	60	0.4560	0.1206	0.4560	0.1206
Substation	Circle City Substation	Fencing	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Substation	Circle City Substation	Fencing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Substation	Circle City Substation	Fencing	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
Substation	Circle City Substation	Temporary Power-Pole Installation	Work Truck with attached Auger	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
Substation	Circle City Substation	Temporary Power-Pole Installation	Worker Commute	on	2	1	0	60	0	60	0.0912	0.0241	0.0912	0.0241
Substation	Circle City Substation	Civil	Drill Rig	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Civil	Tool Trailer	on	2	1	1	0	0	0	2.9438	0.2938	0.8112	0.0809
Substation	Circle City Substation	Civil	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Civil	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Civil	Water Truck	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Civil	Worker Commute	on	30	1	0	60	0	60	1.3680	0.3618	1.3680	0.3618
Substation	Circle City Substation	Civil	Dump Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
Substation	Circle City Substation	Civil	Crane	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Civil	Concrete Mixer Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
Substation	Circle City Substation	MEER	Carry all Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
Substation	Circle City Substation	MEER	Stake Truck	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
Substation	Circle City Substation	MEER	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
Substation	Circle City Substation	Electrical	Tool Trailer	on	1	1	1	0	0	0	1.4719	0.1469	0.4056	0.0404
Substation	Circle City Substation	Electrical	Commander Truck	on	1	1	1	0	0	0	1.4720	0.1470	0.4058	0.0405
Substation	Circle City Substation	Electrical	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Electrical	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Electrical	Worker Commute	on	25	1	0	60	0	60	1.1400	0.3015	1.1400	0.3015
Substation	Circle City Substation	Electrical	Crane	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
Substation	Circle City Substation	Electrical	Crane	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
Substation	Circle City Substation	Electrical	Flat Bed Truck/Trailer	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
Substation	Circle City Substation	Wiring	Bucket Truck	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Wiring	Tool Trailer	on	2	1	1	0	0	0	2.9438	0.2938	0.8112	0.0809
Substation	Circle City Substation	Wiring	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
Substation	Circle City Substation	Transformers	Crane	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
Substation	Circle City Substation	Transformers	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Transformers	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Substation	Circle City Substation	Transformers	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
Substation	Circle City Substation	Transformers	Crane	on	2	1	1	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Maintenance Crew Equipment Check	Maintenance Truck	on	2	1	1	0	0	0	2.9438	0.2938	0.8112	0.0809
Substation	Circle City Substation	Maintenance Crew Equipment Check	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
Substation	Circle City Substation	Testing	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Substation	Circle City Substation	Testing	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
Substation	Circle City Substation	Asphalting	Dump Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
Substation	Circle City Substation	Asphalting	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Substation	Circle City Substation	Asphalting	Worker Commute	on	8	1	0	60	0	60	0.3648	0.0965	0.3648	0.0965
ML Sub	Mira Loma Substation	Civil	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub	Mira Loma Substation	Civil	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub	Mira Loma Substation	Civil	Worker Commute	on	8	1	0	60	0	60	0.3648	0.0965	0.3648	0.0965
ML Sub	Mira Loma Substation	Civil	Drill Rig	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
ML Sub	Mira Loma Substation	Electrical	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub	Mira Loma Substation	Electrical	Boom/Crane Truck	on	1	1	1	0	0	0	1.4720	0.1469	0.4057	0.0405
ML Sub	Mira Loma Substation	Electrical	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
ML Sub	Mira Loma Substation	Maintenance Commission	Maintenance Truck	on	1	1	1	0	0	0	1.4719	0.1469	0.4056	0.0404
ML Sub	Mira Loma Substation	Maintenance Commission	Worker Commute	on	2	1	0	60	0	60	0.0912	0.0241	0.0912	0.0241
ML Sub	Mira Loma Substation	Test	Test Truck	on	1	1	1	0	0	0	1.4719	0.1469	0.4056	0.0404
ML Sub	Mira Loma Substation	Test	Worker Commute	on	2	1	0	60	0	60	0.0912	0.0241	0.0912	0.0241
66 Subtrans Line	Source Line Routes 1 and 2	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	Survey	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Truck, Semi	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Marshaling Yard	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	ROW Clearing	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Road Work	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Bucket Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Auger Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Installation	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Auger Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Dump Truck	on	1	5	0	20	0	20	0.0871	0.0239	0.0871	0.0239
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0523	0.0143	0.0523	0.0143
66 Subtrans Line	Source Line Routes 1 and 2	Install TSP Foundation	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Flat Bed Pole Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	TSP Haul	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	TSP Assembly	Worker Commute	on	8	1	0	60	0	60	0.3648	0.0965	0.3648	0.0965
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	30 Ton Rough Terrain Crane	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	TSP Erection	Worker Commute	on	8	1	0	60	0	60	0.3648	0.0965	0.3648	0.0965
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Bucket Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Auger Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Install Wood/LWS Pole	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	0	20	4.4706	0.4564	1.2718	0.1370
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bucket Truck	on	4	1	2	20	0	20	11.8457	1.1946	3.3155	0.3430
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Wire Truck/Trailer	on	2	1	1	20	0	20	2.9788	0.3034	0.8463	0.0905
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	3 Drum Sock Line Puller	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Bull Wheel Puller	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
66 Subtrans Line	Source Line Routes 1 and 2	Install Conductor	Worker Commute	on	20	1	0	60	0	60	0.9120	0.2412	0.9120	0.2412
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Bucket Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Guard Structure Removal	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Restoration	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Dump Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0523	0.0143	0.0523	0.0143
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	0	20	0.0523	0.0143	0.0523	0.0143
66 Subtrans Line	Source Line Routes 1 and 2	Vault Installation	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Dump Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	0	20	0.0523	0.0143	0.0523	0.0143
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Duct Bank Installation	Worker Commute	on	6	1	0	60	0	60	0.2736	0.0724	0.2736	0.0724
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Survey	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Truck, Semi	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Marshaling Yard	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Lowboy Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	ROW Clearing	Worker Commute	on	5	1	0	60	2	62	14.9469	1.5292	4.2841	0.4648
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Lowboy Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Road Work	Worker Commute	on	5	1	0	60	2	62	14.9469	1.5292	4.2841	0.4648
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Bucket Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Auger Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	4.4334	0.4456	1.2346	0.1262
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Installation	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bucket Truck	on	2	1	2	20	2	22	11.8108	1.1850	3.2806	0.3334
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Boom/Crane Truck	on	2	1	2	20	2	22	11.8108	1.1850	3.2806	0.3334
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Bull Wheel Puller	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Sock Line Puller	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Lowboy Truck/Trailer	on	2	1	0	20	2	22	5.9228	0.5973	1.6577	0.1715
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Remove Exiting Conductor & GW	Worker Commute	on	14	1	0	60	2	62	41.8512	4.2819	11.9956	1.3013
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Bucket Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Flat Bed Pole Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/H-Frame/LWS Pole Removal	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	H-Frame Hybrid Pole Structure Removal	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Flat Bed Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Removal	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Dump Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Foundation Removal	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Auger Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Dump Truck	on	1	6	0	20	2	22	17.7685	1.7919	4.9732	0.5145
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Concrete Mixer Truck	on	3	1	0	20	2	22	8.8843	0.8959	2.4866	0.2572
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install TSP Foundations	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Haul	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Assembly	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	TSP Erection	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Haul	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	3/4 Ton Truck, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Wood/LWS Pole Assembly	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Flat Bed Pole Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Hybrid Pole Haul	Worker Commute	on	4	1	0	60	2	62	11.9575	1.2234	3.4273	0.3718
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Bucket Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Auger Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	4.4334	0.4456	1.2346	0.1262
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install H-frame Hybrid Pole Structure	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	1 Ton Crew Cab, 4x4	on	3	1	1	20	2	22	13.3029	1.3381	3.7064	0.3801
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bucket Truck	on	4	1	2	20	2	22	23.6217	2.3700	6.5613	0.6668
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Dump Truck	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857

ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Wire Truck/Trailer	on	2	1	1	20	2	22	8.8668	0.8911	2.4692	0.2525
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Sock Line Puller	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Bull Wheel Puller	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Lowboy Truck/Trailer	on	2	1	0	20	2	22	5.9228	0.5973	1.6577	0.1715
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Transfer & Install Conductor	Worker Commute	on	20	1	0	60	2	62	59.7875	6.1170	17.1365	1.8590
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	3/4 Ton Truck, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	1 Ton Crew Cab, 4x4	on	1	1	1	20	2	22	4.4343	0.4460	1.2355	0.1267
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Bucket Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Extendable Flat Bed Pole Truck	on	1	1	1	20	2	22	4.4334	0.4456	1.2346	0.1262
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Guard Structure Removal	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Lowboy Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Restoration	Worker Commute	on	7	1	0	60	2	62	20.9256	2.1409	5.9978	0.6507
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Dump Truck	on	2	1	0	20	2	22	5.9228	0.5973	1.6577	0.1715
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Crane	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	8.8843	0.8959	2.4866	0.2572
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Flat Bed Truck/Trailer	on	3	1	0	20	2	22	8.8843	0.8959	2.4866	0.2572
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Vault Installation	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Dump Truck	on	2	1	0	20	2	22	5.9228	0.5973	1.6577	0.1715
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Pipe Truck/Trailer	on	1	1	1	20	2	22	4.4334	0.4456	1.2346	0.1262
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Water Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Concrete Mixer Truck	on	3	1	0	20	2	22	8.8843	0.8959	2.4866	0.2572
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Lowboy Truck/Trailer	on	1	1	0	20	2	22	2.9614	0.2986	0.8289	0.0857
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Duct Bank Installation	Worker Commute	on	6	1	0	60	2	62	17.9362	1.8351	5.1410	0.5577
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	1 Ton Crew Cab, 4x4	on	2	1	1	20	2	22	8.8686	0.8921	2.4709	0.2534
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Bucket Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Boom/Crane Truck	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Wire Truck/Trailer	on	2	1	1	20	2	22	8.8668	0.8911	2.4692	0.2525
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Puller	on	1	1	2	20	2	22	5.9054	0.5925	1.6403	0.1667
ML-J Line	Mira Loma-Jefferson 66kV Subtransmission Line	Install Underground Cable	Worker Commute	on	8	1	0	60	2	62	23.9150	2.4468	6.8546	0.7436
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Bucket Truck	on	2	1	2	20	0	20	5.9228	0.5973	1.6577	0.1715
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Installation	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Medium Duty Splicing Lab Truck	on	2	1	2	20	0	20	5.9245	0.5982	1.6594	0.1724
Telecommunications	Telecommunication Facilities	Fiber Optic Cable Splicing	Worker Commute	on	2	1	0	60	0	60	0.0912	0.0241	0.0912	0.0241
Telecommunications	Telecommunication Facilities	Underground Conduit	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Telecommunications	Telecommunication Facilities	Underground Conduit	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Telecommunications	Telecommunication Facilities	Underground Conduit	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Telecommunications	Telecommunication Facilities	Underground Conduit	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
Telecommunications	Telecommunication Facilities	Underground Conduit	Concrete Mixer Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Telecommunications	Telecommunication Facilities	Underground Conduit	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
Substation	Circle City Substation	Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Substation	Circle City Substation	Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Substation	Circle City Substation	Vault Installation	Water Truck	on	1	1	2	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
Substation	Circle City Substation	Vault Installation	40 Ton Crane	on	1	1	2	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Substation	Circle City Substation	Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
Substation	Circle City Substation	Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
Substation	Circle City Substation	Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
Substation	Circle City Substation	Trench/Duct Installation	Water Truck	on	1	1	2	0	0	0	2.9440	0.2939	0.8115	0.0810
Substation	Circle City Substation	Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
Substation	Circle City Substation	Trench/Duct Installation	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 1 - Construction Line	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 1 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 2 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.4104	0.1085	0.4104	0.1085
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 2- Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 3 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.4104	0.1085	0.4104	0.1085
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 3 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 4 - Construction Line	Worker Commute	on	9	1	0	60	0	60	0.4104	0.1085	0.4104	0.1085
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Cable-pulling Truck with single axle cable dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Truck pulling reel dolly	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 4 - Stringing Crew	Worker Commute	on	4	1	0	60	0	60	0.1824	0.0482	0.1824	0.0482
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	40 Ton Crane	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 5 -Vault Installation	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
ML Sub Linework	Mira Loma Substation	Location 5 -Trench/Duct Installation	Worker Commute	on	4	1	1	60	0	60	6.0699	0.6358	1.8049	0.2100
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	1 Ton Crew Cab, 4x4	on	2	1	1	20	0	20	2.9804	0.3043	0.8479	0.0914
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	3/4 Ton Truck, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	9	1	0	60	0	60	0.4104	0.1085	0.4104	0.1085
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Single axle Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	1	20	0	20	1.4902	0.1521	0.4239	0.0457
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Bucket Truck	on	2	1	2	0	0	0	5.8880	0.5877	1.6229	0.1619
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Splicing Van	on	1	1	1	0	0	0	1.4720	0.1470	0.4058	0.0405
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable-pulling Truck with single axle cable dolly	on	2	1	2	20	0	20	5.9228	0.5973	1.6577	0.1715
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Cable Chopping Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Location 1	Worker Commute	on	5	1	0	60	0	60	0.2280	0.0603	0.2280	0.0603
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Dump Truck	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	1 Ton Crew Cab, 4x4	on	1	1	0	20	0	20	0.0182	0.0052	0.0182	0.0052
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Water Truck	on	1	1	2	20	0	20	2.9614	0.2986	0.8289	0.0857
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Concrete Mixer Truck	on	2	1	0	20	0	20	0.0348	0.0096	0.0348	0.0096
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	40 Ton Crane	on	1	1	1	20	0	20	1.4894	0.1517	0.4231	0.0453
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Flat Bed Truck/Trailer	on	1	1	0	20	0	20	0.0174	0.0048	0.0174	0.0048
66 Subtrans Line	Source Line Routes 1 and 2	Location 2	Worker Commute	on	7	1	0	60	0	60	0.3192	0.0844	0.3192	0.0844

Equipment Type	On Road Use?	On Road Type	Trips Per Year	Paved Distance (miles)	Unpaved Distance (miles)	Total Distance (miles)	ROG (lbs/year)	CO (lbs/year)	NOx (lbs/year)	SOx (lbs/year)	PM10 (lbs/year)	PM2.5 (lbs/year)	CO2 (lbs/year)	CH4 (lbs/year)
Source Line and Telecommunications Inspection	on	passenger	1	20	0	20	0.01	0.11	0.01	0.00	0.02	0.01	22.13	0.00
Mira Loma-Jefferson Inspection	on	passenger	1	40	10	50	0.03	0.27	0.03	0.00	14.75	1.48	55.31	0.00
Substation Site Visit	on	passenger	52	60	0	60	1.88	16.78	1.60	0.03	2.67	0.82	3451.58	0.17
Total	--	--	--	--	--	--	**1.92**	**17.16**	**1.64**	**0.03**	**17.44**	**2.31**	**3529.02**	**0.17**

LST Analysis	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Substation	66.74	130.67	19.85	5.94
Distance (m)	100	100	100	100
Size	5	5	5	5
Threshold	**3964**	**378**	**58**	**18**
Exceeded?	**No**	**No**	**No**	**No**
ML Sub	5.76	21.40	2.28	0.77
Distance (m)	500	500	500	500
Size	5	5	5	5
Threshold	**22490**	**778**	**228**	**113**
Exceeded?	**No**	**No**	**No**	**No**
66 Subtrans Line	22.24	65.17	8.84	2.47
Distance (m)	25	25	25	25
Size	1	1	1	1
Threshold	**674**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**
ML-J Line	22.25	65.21	9.65	2.56
Distance (m)	25	25	25	25
Size	1	1	1	1
Threshold	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**
Telecommunications	3.86	17.92	2.84	0.61
Distance	25	25	25	25
Size	1	1	1	1
Threshold	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**No**	**No**

LST Analysis	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Substation	84.73	75.17	18.08	4.53
Distance (m)	100	100	100	100
Size	5	5	5	5
Threshold	**3964**	**378**	**58**	**18**
Exceeded?	**No**	**No**	**No**	**No**
ML Sub	10.62	9.48	1.98	0.52
Distance (m)	500	500	500	500
Size	5	5	5	5
Threshold	**22490**	**778**	**228**	**113**
Exceeded?	**No**	**No**	**No**	**No**
66 Subtrans Line	37.72	33.82	8.63	1.97
Distance (m)	25	25	25	25
Size	1	1	1	1
Threshold	**674**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**
ML-J Line	37.73	33.85	9.00	2.05
Distance (m)	25	25	25	25
Size	1	1	1	1
Threshold	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**Yes**	**No**
Telecommunications	10.00	8.97	2.78	0.58
Distance	25	25	25	25
Size	1	1	1	1
Threshold	**647**	**118**	**4**	**3**
Exceeded?	**No**	**No**	**No**	**No**

	Emissions (pounds)			Emissions (metric tons)		
Construction	**CO2**	**CH4**	**CO2e**	**CO2**	**CH4**	**CO2e**
Construction Equipment Use	3,333,993.49	1,002.67	3,355,049.49	1,512.27	0.45	1,521.82
Motor Vehicle Use	2,493,290.07	77.21	2,494,911.42	1,130.94	0.04	1,131.67
Total	**5,827,283.56**	**1,079.87**	**5,849,960.91**	**2,643.21**	**0.49**	**2,653.50**

	Emissions (pounds)				Emissions (metric tons)			
Operation	**CO2**	**CH4**	**SF6**	**CO2e**	**CO2**	**CH4**	**SF6**	**CO2e**
On-Road	3,529.02	0.17	-	3,532.57	1.60	0.00	0.00	1.60
SF6	-	-	2.20	52,580.00	0.00	0.00	0.0010	23.85
Construction	194,242.79	36.00	-	194,998.70	88.11	0.02	0.00	88.45
Total	**197,771.80**	**36.16**	**2.20**	**251,111.26**	**89.71**	**0.02**	**0.00**	**113.90**

APPENDIX D.2
Health Risk Assessment

80 South Lake Avenue
Suite 570
Pasadena, CA 91101
626.204.6170 phone
626.204.6171 fax

www.esassoc.com

Construction Health Risk Assessment

date June 13, 2017

to Matthew Fagundes, ESA

from Heidi Rous, ESA
Everest Yan, ESA

subject Circle City Substation and Subtransmission Line Project– Construction Period Health Risk Assessment (HRA)

Summary

Southern California Edison (SCE), in its California Public Utilities Commission (CPUC) application (A.15-12-007), filed on December 4, 2015 (SCE, 2015) requested a Permit to Construct (PTC) a new substation and 66 kilovolt (kV) subtransmission lines and related distribution components in Riverside County and San Bernardino County known as the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (Project).

Construction of the Project would generate diesel particulate matter (DPM) emissions from operation of equipment and heavy duty trucks. Diesel particulate matter is recognized as a carcinogen by the Office of Environmental Health and Hazard Assessment (OEHHA) and based on Proposition 65. Proposition 65, also known as the Safe Drinking Water and Toxic Enforcement Act of 1986, requires California to maintain and update a list of chemicals known to cause cancer. In March 2015, OEHHA has revised health risk assessment guidelines to consider short-term emissions such as construction activities, while clarifying that, "[t]here is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime." The South Coast Air Quality Management District (SCAQMD) has not expressed support for or opposition to consideration of the OEHHA 2015 manual in evaluating construction impacts in environmental documents prepared pursuant to the California Environmental Quality Act (CEQA). Regardless of the above preface, ESA has prepared a construction period health risk assessment (HRA) for the Project based on the revised OEHHA guidelines.

The table below summarizes the incremental increase in lifetime cancer risk for the maximally exposed residential receptor that would be caused by the Project as proposed, and by the Project with incorporation of mitigation. As shown in the table, the Project would result in a significant risk for residential land uses in the vicinity of the substation site, however, with mitigation; the risk for residential land uses would be below the SCAQMD-recommended project threshold of 10 in one million.

SUMMARY TABLE
MAXIMUM INCREASE IN CARCINOGENIC RISK FOR OFF-SITE SENSITIVE RECEPTORS

Sensitive Receptor	Maximum Cancer Risk (# in one million)	
	Unmitigated	Mitigated
Residential	12.0	7.1
Maximum Individual Cancer Risk Threshold	10	10
Exceeds Threshold?	Yes	No

INTRODUCTION

SCE proposes to construct a new substation and 66 kilovolt (kV) subtransmission lines and related distribution components in Riverside County and San Bernardino County known as the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project (Project). Construction of the Project would result in emissions of DPM resulting from operation of equipment and heavy duty trucks. Diesel exhaust is a complex mixture of pollutants, including more than 40 cancer-causing substances in addition to very small carbon particles, or "soot" coated with numerous organic compounds. In 1998, California identified DPM as a toxic air contaminant (TAC) based on its potential to cause cancer. Other agencies, such as the National Toxicology Program, the U.S. Environmental Protection Agency, and the National Institute of Occupational Safety and Health, concluded that exposure to diesel exhaust likely causes cancer. The most recent assessment (2012) came from the World Health Organization's International Agency for Research on Cancer (IARC). IARC's extensive literature review led to the conclusion that diesel engine exhaust is "carcinogenic to humans," thereby substantiating and further strengthening California's earlier TAC determination.[1]

In March 2015, the OEHHA adopted a revised guidance manual for use in the Air Toxics Hot Spots Program or for the permitting of existing, new, or modified stationary sources, the *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* (March 2015). Unlike previous iterations of this manual, the revised manual provides considerations for short-term temporary exposure for durations as short as two months, such as during construction activities, while noting that there is "considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime." The revised OEHHA's guidance also considers more conservative assumptions and updated scientific research. Health risk impacts calculated in accordance with the OEHHA's revised manual are approximately two to ten times higher than those calculated in accordance with the previous methodology. The SCAQMD has not expressed support for or opposition to consideration of the OEHHA 2015 manual in evaluating construction impacts in CEQA documents. Rather, SCAQMD's guidelines call for consideration of localized construction impacts in accordance with their Localized Significance Thresholds (LST) Manual.

A HRA was conducted to estimate the health risk impact associated with construction of the project. The methodology used to evaluate the health risks from on-site construction activities is summarized below, along with the results of the HRA.

METHODOLOGY

The methodologies and assumptions used in this HRA are consistent with the guidance recommended by OEHHA Air Toxic Hot Spots Program Risk Assessment Guidelines (2015). The OEHHA methodology used in this assessment uses a dose-response assessment to characterize risk from cancer due to inhaled TACs.

Based on the OEHHA guidance, the evaluation of potential health risks uses the following standard four-step risk assessment process:

1. Hazard Identification
2. Exposure Assessment
3. Dose-Response Assessment

[1] California Environmental Protection Agency. https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm, Accessed May 1, 2017.

4. Risk Characterization

Each step is described in detail below.

Hazard Identification

The hazard identification process is undertaken to determine what TACs would potentially be present in the assessment area, and if present, identifies what the pollutants of concern are along with their potential adverse health effects. In this HRA, the primary hazard is DPM emissions from operation of construction equipment and heavy duty trucks.

DPM historically has been used as a surrogate measure of exposure for whole diesel exhaust emissions. Diesel exhaust is a complex mixture of thousands of gases and fine particles (commonly known as soot). Diesel exhaust particles and gases are suspended in the air due to thermal buoyancy and the small size of the particles. The composition of diesel exhaust varies depending on engine type, operating conditions, fuel composition, lubricating oil, and presence of an emission control system. One of the main characteristics of diesel exhaust is the release of particles at a relative rate approximately 20 times greater than from gasoline exhaust, on an equivalent fuel basis. Diesel particulates are mainly aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small carbon (elemental carbon) particles ranging from 0.01 to 0.08 micron in diameter. The organic fraction consists of soluble organic compounds.[2]

Exposure Assessment

The degree of the residences exposure to DPM from Project construction activities was evaluated under the exposure assessment portion of the HRA. This assessment involves the quantification of DPM emissions and dispersion modeling. The amount of DPM emissions generated by construction activities was determined using PM_{10} from diesel exhaust as a surrogate.

The greatest potential for Toxic Air Contaminant (TAC) emissions would be related to DPM emissions associated with heavy equipment operations during demolition, grading and excavation, and construction activities The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for DPM are not known for these pathways.[3] OEHHA developed necessary data to evaluate carcinogenicity of DPM through the inhalation pathway only. Once determined, the dose is multiplied by the compound-specific inhalation cancer potency factor to derive the cancer risk estimate. The dose takes into account the concentration at a sensitive receptor. The cancer potency factor is compound-specific.

Emissions Inventory

Emissions analyzed in the HRA were based on the air quality emissions estimates prepared for the Draft Environmental Impact Report (DEIR) prepared for the project. The construction emissions were estimated using the SCAQMD approved California Emissions Estimator Model (CalEEMod) model. The air quality analysis prepared for the DEIR estimated maximum daily emissions for each construction phase. The construction

[2] California Air Resources Board, Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Part A Exposure *Assessment*, Approved by the Scientific Review Panel, (1998).

[3] Ibid.

emissions utilized for this HRA assumed the same construction schedule and equipment types as the analysis prepared for the DEIR.

The emissions estimates represent the maximum daily emissions from each phase that would be expected from construction of the Project utilizing maximum daily heavy-duty construction equipment activity levels. For the purposes of this quantitative construction HRA, the use of maximum daily emissions to estimate health risks would result in a gross over approximation of impacts because construction-related health risks are calculated based on long-term emissions and not short-term maximum daily emissions. As a result, it is more appropriate and accurate to use average emissions that would be expected throughout construction associated with the Project.

The US Environmental Protection Agency (USEPA) sets emissions standards for off-road (construction) equipment ranging from Tier 0 through Tier 4. Tier 4 emissions compliant equipment is the most stringent standard and is required for model years 2015 and newer. The Project evaluated impacts under an unmitigated scenario where emissions were uncontrolled and a mitigated scenario where construction equipment would be compliant with Tier 3 emissions standards.

Dispersion Modeling

Dispersion modeling predicts the air pollutant concentrations due to emissions from a source at defined receptor point locations. Dispersion modeling was performed using the USEPA approved AERSCREEN model with meteorological parameters obtained from the SCAQMD monitoring station located in Riverside, California. A single volume source was used to represent the emission sources on the Project site. Construction activities at the substation site were modeled as a single volume source occupying 5-acres. Construction of the transmission lines were modeled with a single volume source occupying 1-acre. Sensitive receptors were assumed to be located 800 feet from the Circle City substation. During construction of the transmission lines, sensitive receptors may be located within 100 feet of construction activities. Receptor heights were set at 0.0 meters to represent ground-level concentrations, consistent with SCAQMD modeling guidance.[4]

Dose-Response Assessment

The dose-response assessment is the process of characterizing the relationship between exposure to diesel exhaust and the incidence of an adverse health effect in exposed populations.

The estimation of potential inhalation cancer risk posed by exposure to DPM requires a cancer potency factor. Cancer potency factors are expressed as the upper bound probability of developing cancer assuming continuous lifetime exposure to diesel exhaust at a dose of one milligram per kilogram of body weight, and are expressed in units of inverse dose as a potency slope (i.e., $[mg/kg/day]^{-1}$). A cancer potency factor when multiplied by the dose of a carcinogen gives the associated lifetime cancer risk. OEHHA's recommended cancer potency factor for DPM is 1.1 $(mg/kg/day)^{-1}$. The estimation of potential inhalation chronic non-cancer effects posed by exposure to DPM requires a chronic reference exposure level (REL). A chronic REL is a concentration level (that is expressed in units of micrograms per cubic meter [$\mu g/m^3$] for inhalation exposures), at or below which no adverse health effects are anticipated following long-term exposure. OEEHA's recommended chronic REL for DPM is 5 $\mu g/m^3$. The chronic hazard index target organ for DPM is the respiratory system.

[4] http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance

Risk Characterization

Risk characterization combines the maximum annual average ground-level DPM concentration from the exposure assessment and the cancer potency factor and chronic REL from the dose-response analysis to estimate the potential inhalation cancer risk from exposure to DPM emissions.

In performing health risk calculations, carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Any exposure, therefore, will have some associated risk. Incremental health risks associated with exposure to carcinogenic compounds is defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). The URF for DPM recommended by the Scientific Review Panel[5] is 3.0 x 10-4 microgram per cubic meter ($\mu g/m^3$). This value corresponds to a Cancer Potency Factor (CPF) of 1.1 per milligram/kilogram (body weight) per day (mg/kg(bw)-day). The URF for DPM means that for receptors with an annual average concentration of 1 $\mu g/m^3$ in the ambient air, the probability of contracting cancer over a 70-year lifetime of exposure is 300 in 1 million. The URF also assumes that a person is exposed continuously for a 70-year lifetime. This approach for calculating cancer risk is intended to result in conservative (i.e., health protective) estimates of health impacts and is used for assessing risks to sensitive receptors. The estimation of cancer risk generally uses the following algorithms:

$$\text{Risk} = \text{Dose inhalation} \times \text{Inhalation CPF} \times \text{ASF} \qquad \text{(Equation 1)}$$

Where:

$$\text{Dose inhalation} = C_{AIR} \times DBR \times A \times EF \times ED \times FAH / AT \qquad \text{(Equation 2)}$$

Inhalation CPF = inhalation cancer potency factor

ASF = age sensitivity factor

Where:

C_{AIR} = concentration of compound in air in micrograms per cubic meter ($\mu g/m^3$)

DBR = breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for DPM)

EF = exposure frequency in days per year (day/year)

ED = exposure duration in years (year)

FAH = fraction of time at home

[5] The Scientific Review Panel is charged with evaluating the risk assessments of substances proposed for identification as toxic air contaminants by CARB, OEHHA, and the Department of Pesticide Regulation (DPR), and the review of guidelines prepared by OEHHA.

AT = averaging time period over which exposure is averaged in days (day)

The OEHHA recommended values for the parameters listed above were used in the HRA analysis. The daily breathing rate (DBR) used in the analysis was based on OEHHA recommendations, which vary depending on age, as shown in **Table 1**. The recommended exposure frequency (EF) is 350 days per year, which is equivalent to 0.96 (350 days / 365 days a year). The inhalation absorption factor (A) is assumed to be 1 for inhalation based risk assessment. As indicated in Equation 1 above, each age group has different exposure parameters that require cancer risk to be calculated separately for each age group. Values for fraction of time at home (FAH) also vary depending on age, as shown in **Table 1**. Once dose is calculated, cancer risk is calculated by accounting for cancer potency of the specific pollutant, and the age sensitivity factor (ASF), which also varies by age as shown in **Table 1**.

TABLE 1
DAILY BREATHING RATE, FRACTION OF TIME AT HOME, AND AGE SENSITIVITY FACTORS

Parameter	3rd Trimester	Age 0 < 2	Age 2 < 16	Age 16 < 30	Age 30 to 70
Daily Breathing Rate (DBR) [a] (L/kg-body weight/day)	361	1,090	861	335	290
Fraction of Time at Home (FAH)	1	0.85	0.72	0.73	0.73
Age Sensitivity Factor (ASF)	10	10	3	1	1

NOTES:
[a] Daily breathing rate is based on the OEHHA 95th percentile values.

SOURCE: OEHHA, Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments, (March 2015).

HEALTH RISK CALCULATIONS

The resulting health risk calculations were performed using a spreadsheet tool consistent with the OEHHA guidance. The spreadsheet tool incorporates the algorithms, equations, and the variables described above as well as in the OEHHA guidance, and incorporates the results of the AERSCREEN dispersion model. **Table 2** summarizes the carcinogenic risk for the maximum impacted sensitive receptors for unmitigated and mitigated scenarios.

For carcinogenic exposures, the cancer risk from DPM emissions for the unmitigated construction scenario is estimated to result in a maximum carcinogenic risk of approximately 12.0 per one million. Under the mitigated construction scenario, the Project is estimated to result in a maximum incremental increase in carcinogenic risk of 7.1 per one million. The maximum impact would occur at the residential land uses directly east of the site. As discussed previously, the lifetime exposure under OEHHA guidelines takes into account early life (infant and children) exposure. It should be noted that the calculated cancer risk assumes sensitive receptors (residential uses) would not have any emission controls such as mechanical filtration and exposure would occur with windows open. This HRA focuses on residential impacts and does not include impacts for off-site workers. Although off-site workers may be in close proximity to the Project Site, their intermittent exposure duration would be less than that of a residence (8 hours compared to 24 hours) and adult breathing rates compared to children are lower as well. Therefore, worker impacts would be less than that of a residence.

TABLE 2
MAXIMUM INCREASE IN CARCINOGENIC RISK FOR OFF-SITE SENSITIVE RECEPTORS

Sensitive Receptor	Maximum Cancer Risk (# in one million)	
	Unmitigated	Mitigated
Residential	12.0	7.1
Maximum Individual Cancer Risk Threshold	10	10
Exceeds Threshold?	Yes	No

Health risk calculations are provided in Appendix A

The process of assessing health risks and impacts includes a degree of uncertainty. The level of uncertainty is dependent on the availability of data and the extent to which assumptions are relied upon in cases where the data are incomplete or unknown. All HRAs rely upon scientific studies in order to reduce the level of uncertainty; however, it is not possible to completely eliminate uncertainty from the analysis. Where assumptions are used to substitute for incomplete or unknown data, it is standard practice in performing HRAs to err on the side of health protection in order to avoid underestimating or underreporting the risk to the public by assessing risk on the most sensitive populations, such as children and the elderly.

CPUC Circle City
Health Risk Assessment
Appendix A

A.1 Unmitigated Cancer Risk Emissions and Calculations
A.2 Mitigated Cancer Risk Emissions and Calculations
A.3 AERSCREEN Output Files

- 1-acre
- 5-acre

A.1 Unmitigated Cancer Risk Emissions and Calculations

	Age	
Parameter	**3rd Trimester**	**0 < 2**
Breathing Rate	361	1090
Exposure Frequency (EF)	350	350
Exposure Duration (ED) (years)	0.25	0.75
Averaging Time (AT)	25550	25550
Age Sensitvity Factor (ASF)	10	10
Fraction of Time at Home (FAH)	1	0.85
Carcinogen Potency (CPF) (mg/kg-d)$^{-1}$	1.1	

	Annual Concentration	**3rd Trimester**		**0 < 2**		Cancer Risk per	Above	Duration
		Dose	Cancer Risk	Dose	Cancer Risk	million	Threshold?	(Years)
Source Line Routes 1 and 2	0.226	7.83E-05	3.08E-06	-	-	3.1	No	**0.25**
Mira Loma Substation	0.004	1.40E-06	5.49E-08	4.22E-06	4.23E-07	0.5	No	**1**
Mira Loma Substation Linework	0.218	7.56E-05	2.97E-06	-	-	3.0	No	**0.25**
Mira Loma-Jefferson 66kV Subtransmission Line	0.400	1.38E-04	5.44E-06	-	-	5.4	No	**0.25**
Circle City Substation	0.102	3.51E-05	1.38E-06	1.06E-04	1.06E-05	12.0	Yes	**1**
Telecommunication Facilities	0.062	2.14E-05	8.41E-07	-	-	0.8	No	**0.25**

Component	Component2	Component Totals (lbs)	Duration (months)	Workdays - Period	Total Period Emission Rate (g/s)
66 Subtrans Line	**Source Line Routes 1 and 2**	148.9	18	540	0.0043
ML Sub	**Mira Loma Substation**	19.6	12	360	0.0009
ML Sub Linework	**Mira Loma Substation**	143.7	18	540	0.0042
ML-J Line	**Mira Loma-Jefferson 66kV Subtransmission Line**	263.1	18	540	0.0077
Substation	**Circle City Substation**	493.5	12	360	0.0216
Telecommunications	**Telecommunication Facilities**	13.6	6	180	0.0012

Days per Month **30**

Component	Component2	Activity	Max of Workdays	Min of Workdays	Sum of PM10	Total (lbs)	Component Totals (lbs)	Duration (months)
66 Subtrans Line	**Source Line Routes 1 and 2**	Duct Bank Installation	19	19	0.306828	5.8	**148.9**	18
		Guard Structure Installation	6	6	0.545292	3.3		
		Guard Structure Removal	8	8	0.545292	4.4		
		Install Conductor	11	11	1.929496	21.2		
		Install TSP Foundation	60	60	0.264344	15.9		
		Install Wood/LWS Pole	16	16	0.589598	9.4		
		Location 1	45	10	1.089104	10.9		
		Location 2	34	3	0.898184	2.7		
		Marshaling Yard	140	140	0.22238	31.1		
		Restoration	5	5	0.415886	2.1		
		Road Work	1	1	0.808706	0.8		
		ROW Clearing	1	1	0.737944	0.7		
		TSP Assembly	30	30	0.445248	13.4		
		TSP Erection	30	30	0.422238	12.7		
		TSP Haul	8	8	0.267468	2.1		
		Vault Installation	22	22	0.51075	11.2		
		Wood/H-Frame/LWS Pole Removal	2	2	0.595314	1.2		
ML Sub	**Mira Loma Substation**	Civil	20	20	0.32402	6.5	**19.6**	12
		Electrical	20	20	0.656756	13.1		
ML Sub Linework	**Mira Loma Substation**	Location 1 - Construction Line	11	11	0.400176	4.4	**143.7**	18
		Location 1 - Stringing Crew	4	4	0.063648	0.3		
		Location 2 - Construction Line	57	57	0.400176	22.8		
		Location 2- Stringing Crew	10	10	0.063648	0.6		
		Location 3 - Construction Line	13	13	0.400176	5.2		
		Location 3 - Stringing Crew	5	5	0.063648	0.3		
		Location 4 - Construction Line	83	83	0.400176	33.2		
		Location 4 - Stringing Crew	11	11	0.063648	0.7		
		Location 5 -Trench/Duct Installation	165	165	0.172064	28.4		
		Location 5 -Vault Installation	96	96	0.498008	47.8		

Component	Component2	Activity	Max of Workdays	Min of Workdays	Sum of PM10	Total (lbs)	Component Totals (lbs)	Duration (months)
ML-J Line	**Mira Loma-Jefferson 66kV Subtransmission Line**	Duct Bank Installation	2	2	0.306828	0.6	**263.1**	18
		Guard Structure Installation	12	12	0.545292	6.5		
		Guard Structure Removal	9	9	0.545292	4.9		
		H-Frame Hybrid Pole Structure Removal	8	8	0.908226	7.3		
		Hybrid Pole Haul	4	4	0.267468	1.1		
		Install H-frame Hybrid Pole Structure	16	16	0.589598	9.4		
		Install TSP Foundations	40	40	0.30736	12.3		
		Install Underground Cable	2	2	0.916668	1.8		
		Marshaling Yard	140	140	0.22238	31.1		
		Remove Exiting Conductor & GW	1	1	1.842928	1.8		
		Restoration	11	11	0.544934	6.0		
		Road Work	6	6	0.862916	5.2		
		ROW Clearing	21	21	0.78096	16.4		
		Transfer & Install Conductor	33	33	1.929496	63.7		
		TSP Assembly	18	18	0.623294	11.2		
		TSP Erection	18	18	0.534404	9.6		
		TSP Foundation Removal	14	14	0.576104	8.1		
		TSP Haul	4	4	0.267468	1.1		
		TSP Removal	4	4	0.908226	3.6		
		Vault Installation	3	3	0.553766	1.7		
		Wood/H-Frame/LWS Pole Removal	25	25	0.595314	14.9		
		Wood/LWS Pole Assembly	56	56	0.623294	34.9		
		Wood/LWS Pole Haul	37	37	0.267468	9.9		
Substation	**Circle City Substation**	Asphalting	15	15	0.582512	8.7	493.5	12
		Civil	95	95	1.800468	171.0		
		Electrical	80	80	2.122828	169.8		
		Fencing	20	20	0.08644	1.7		
		Grading	60	60	1.316424	79.0		
		Temporary Power-Pole Installation	3	3	0.131032	0.4		
		Transformers	30	30	0.916026	27.5		
		Trench/Duct Installation	20	20	0.172064	3.4		
		Vault Installation	48	48	0.498008	23.9		
		Wiring	40	40	0.200088	8.0		
Telecommunications	**Telecommunication Facilities**	Fiber Optic Cable Installation	25	25	0.400176	10.0	13.6	6
		Fiber Optic Cable Splicing	10	10	0.097888	1.0		
		Underground Conduit	15	15	0.172064	2.6		

Off Road Use	off

Row Labels	Max of Number of Work Days	Min of Number of Work Days	Sum of Off_Unctrl_PM10
66 Subtrans Line	**140**	**1**	**10.594072**
Duct Bank Installation	19	19	0.306828
Guard Structure Installation	6	6	0.545292
Guard Structure Removal	8	8	0.545292
Install Conductor	11	11	1.929496
Install TSP Foundation	60	60	0.264344
Install Wood/LWS Pole	16	16	0.589598
Location 1	45	10	1.089104
Location 2	34	3	0.898184
Marshaling Yard	140	140	0.22238
Restoration	5	5	0.415886
Road Work	1	1	0.808706
ROW Clearing	1	1	0.737944
TSP Assembly	30	30	0.445248
TSP Erection	30	30	0.422238
TSP Haul	8	8	0.267468
Vault Installation	22	22	0.51075
Wood/H-Frame/LWS Pole Removal	2	2	0.595314
ML Sub	**20**	**20**	**0.980776**
Civil	20	20	0.32402
Electrical	20	20	0.656756
ML Sub Linework	**165**	**4**	**2.525368**
Location 1 - Construction Line	11	11	0.400176
Location 1 - Stringing Crew	4	4	0.063648
Location 2 - Construction Line	57	57	0.400176
Location 2- Stringing Crew	10	10	0.063648
Location 3 - Construction Line	13	13	0.400176
Location 3 - Stringing Crew	5	5	0.063648
Location 4 - Construction Line	83	83	0.400176
Location 4 - Stringing Crew	11	11	0.063648
Location 5 -Trench/Duct Installation	165	165	0.172064
Location 5 -Vault Installation	96	96	0.498008

ML-J Line	**140**	**1**	**15.519684**
Duct Bank Installation	2	2	0.306828
Guard Structure Installation	12	12	0.545292
Guard Structure Removal	9	9	0.545292
H-Frame Hybrid Pole Structure Removal	8	8	0.908226
Hybrid Pole Haul	4	4	0.267468
Install H-frame Hybrid Pole Structure	16	16	0.589598
Install TSP Foundations	40	40	0.30736
Install Underground Cable	2	2	0.916668
Marshaling Yard	140	140	0.22238
Remove Exiting Conductor & GW	1	1	1.842928
Restoration	11	11	0.544934
Road Work	6	6	0.862916
ROW Clearing	21	21	0.78096
Transfer & Install Conductor	33	33	1.929496
TSP Assembly	18	18	0.623294
TSP Erection	18	18	0.534404
TSP Foundation Removal	14	14	0.576104
TSP Haul	4	4	0.267468
TSP Removal	4	4	0.908226
Vault Installation	3	3	0.553766
Wood/H-Frame/LWS Pole Removal	25	25	0.595314
Wood/LWS Pole Assembly	56	56	0.623294
Wood/LWS Pole Haul	37	37	0.267468
Substation	**95**	**3**	**7.82589**
Asphalting	15	15	0.582512
Civil	95	95	1.800468
Electrical	80	80	2.122828
Fencing	20	20	0.08644
Grading	60	60	1.316424
Temporary Power-Pole Installation	3	3	0.131032
Transformers	30	30	0.916026
Trench/Duct Installation	20	20	0.172064
Vault Installation	48	48	0.498008
Wiring	40	40	0.200088
Telecommunications	**25**	**10**	**0.670128**
Fiber Optic Cable Installation	25	25	0.400176
Fiber Optic Cable Splicing	10	10	0.097888
Underground Conduit	15	15	0.172064
Grand Total	**165**	**1**	**38.115918**

Project Activity	Approximate Start Date	Approximate Duration (Months)
Final Engineering	Q1, 2018	12 months
ROW/Property Acquisition	Q2. 2018	17 months
Acquisition of Required Permits	Q3, 2018	18 months
Substation Construction	Q3, 2019	12 months
Subtransmission Line Construction	Q3, 2020	18 months
Telecommunications Construction	Q4, 2020	6 months
Distribution Construction	Q3, 2019	11 months
Project Operational	Q2, 2021	

AERSCREEN RESULTS

VOLUME SOURCE PARAMETERES		
	5-acre	1-acre
SIDE LENGTH (m)	142.24	63.6
SOURCE EMISSION RATE (g/s)	1	1
VOLUME HEIGHT (m)	4.572	4.572
INITIAL LATERAL DIMENSION (m)	33.1	14.8
INITIAL VERTICAL DIMENSION (m)	2.13	2.13
RURAL OR URBAN	URBAN	URBAN
POPULATION	2,100,516	2,100,516
PROBE DISTANCE (m)	1000	500
DISCRETE RECEPTORS	YES	YES
RECEPTOR DISTANCES FROM SOURCE(m)	110	5
	120	10
	130	15
	140	20
	160	30
	170	35
	180	40
	190	45
	210	60
	240	70
FLAGPOLE RECPTOR HEIGHT (m)	0	0
MAKEMET METOEROLOGY PARAMETERS		
MINIMUM TEMPERATURE (K)	283.1	283.1
MAXIMUM TEMPERATURE (K)	299.3	299.3
ALBEDO	0.19	0.19
BOWEN RATIO	1	1
SURFACE ROUGHNESS (m)	0.314	0.314
MAXIMUM ANNUAL IMPACT (ug/m³)	**35.59**	**130.1**
DISTANCE FROM SOURCE (m)	**72.17**	**32.82**

AERSCREEN RESULTS

5-acre					
Distance From Center of Source (m)	Distance from Source Boundary (m)	Specified Receptors	Maximum 1-hr Concentration (ug/m³)	Annual Concentration (ug/m³)	
72.17	0		355.9	35.59	
75	2.83		335	33.5	
100	27.83		227.2	22.72	
125	52.83		164.6	16.46	
150	77.83		128.7	12.87	
175	102.83		104.6	10.46	
182.17	110	110	99.07	9.907	
192.17	120	120	92.12	9.212	
200	127.83		87.24	8.724	
202.17	130	130	85.96	8.596	
212.17	140	140	80.45	8.045	
225	152.83		74.21	7.421	
232.17	160	160	71.06	7.106	
242.17	170	170	67.03	6.703	
250	177.83		64.14	6.414	
252.17	180	180	63.37	6.337	
262.17	190	190	60.04	6.004	
275	202.83		56.17	5.617	
282.17	210	210	54.19	5.419	
300	227.83		49.73	4.973	
312.17	240	240	47.03	4.703	<--Approximately 800 feet
325	252.83		44.45	4.445	
350	277.83		40.04	4.004	
375	302.83		36.32	3.632	
400	327.83		33.15	3.315	
425	352.83		30.42	3.042	
450	377.83		28.05	2.805	
475	402.83		25.97	2.597	
500	427.83		24.14	2.414	
525	452.83		22.52	2.252	
550	477.83		21.07	2.107	
575	502.83		19.78	1.978	
600	527.83		18.61	1.861	
625	552.83		17.55	1.755	
650	577.83		16.59	1.659	
675	602.83		15.72	1.572	
700	627.83		14.92	1.492	
725	652.83		14.19	1.419	
750	677.83		13.52	1.352	
775	702.83		12.9	1.29	
800	727.83		12.32	1.232	
825	752.83		11.79	1.179	
850	777.83		11.3	1.13	
875	802.83		10.83	1.083	
900	827.83		10.4	1.04	
925	852.83		10	1	
950	877.83		9.627	0.9627	
975	902.83		9.274	0.9274	
1000	927.83		8.942	0.8942	

AERSCREEN RESULTS

1-acre					
Distance From Center of Source (m)	Distance from Source Boundary (m)	Specified Receptors	Maximum 1-hr Concentration (ug/m³)	Annual Concentration (ug/m³)	
32.82	0		1301	130.1	
37.82	5	5	1037	103.7	
42.82	10	10	856.4	85.64	
47.82	15	15	748.1	74.81	
50	17.18		707	70.7	
52.82	20	20	658.5	65.85	
62.82	30	30	520.9	52.09	<-- approx 100 feet
67.82	35	35	467.8	46.78	
72.82	40	40	422.4	42.24	
75	42.18		404.7	40.47	
77.82	45	45	383.5	38.35	
92.82	60	60	294.8	29.48	
100	67.18		263.2	26.32	
102.82	70	70	252.2	25.22	
125	92.18		186.2	18.62	
150	117.18		140.9	14.09	
175	142.18		113.1	11.31	
200	167.18		93.31	9.331	
225	192.18		78.71	7.871	
250	217.18		67.58	6.758	
275	242.18		58.86	5.886	
300	267.18		51.87	5.187	
325	292.18		46.18	4.618	
350	317.18		41.46	4.146	
375	342.18		37.51	3.751	
400	367.18		34.15	3.415	
425	392.18		31.27	3.127	
450	417.18		28.77	2.877	
475	442.18		26.6	2.66	
500	467.18		24.69	2.469	

A.2 Mitigated Cancer Risk Emissions and Calculations

	Age	
Parameter	**3rd Trimester**	**0 < 2**
Breathing Rate	361	1090
Exposure Frequency (EF)	350	350
Exposure Duration (ED) (years)	0.25	0.75
Averaging Time (AT)	25550	25550
Age Sensitvity Factor (ASF)	10	10
Fraction of Time at Home (FAH)	1	0.85
Carcinogen Potency (CPF) $(mg/kg\text{-}d)^{-1}$	1.1	

	Annual Concentration	**3rd Trimester**		**0 < 2**		Cancer Risk per	Above	Duration
		Dose	Cancer Risk	Dose	Cancer Risk	million	Threshold?	(Years)
Source Line Routes 1 and 2	0.108	3.72E-05	1.46E-06	-	-	1.5	No	**0.25**
Mira Loma Substation	0.003	9.10E-07	3.58E-08	2.75E-06	2.75E-07	0.3	No	**1**
Mira Loma Substation Linework	0.152	5.26E-05	2.07E-06	-	-	2.1	No	**0.25**
Mira Loma-Jefferson 66kV Subtransmission Line	0.184	6.38E-05	2.51E-06	-	-	2.5	No	**0.25**
Circle City Substation	0.060	2.08E-05	8.17E-07	6.28E-05	6.29E-06	7.1	No	**1**
Telecommunication Facilities	0.051	1.75E-05	6.89E-07	-	-	0.7	No	**0.25**

Component	Component2	Component Totals (lbs)	Duration (months)	Workdays - Period	Total Period Emission Rate (g/s)
66 Subtrans Line	**Source Line Routes 1 and 2**	70.8	18	540	0.0021
ML Sub	**Mira Loma Substation**	12.8	12	360	0.0006
ML Sub Linework	**Mira Loma Substation**	100.1	18	540	0.0029
ML-J Line	**Mira Loma-Jefferson 66kV Subtransmission Line**	121.3	18	540	0.0035
Substation	**Circle City Substation**	292.0	12	360	0.0128
Telecommunications	**Telecommunication Facilities**	11.1	6	180	0.0010

Days per Month **30**

Component	Component2	Activity	Max of Workdays	Min of Workdays	Sum of PM10	Total (lbs)	Component Totals (lbs)	Duration (months)
66 Subtrans Line	**Source Line Routes 1 and 2**	Duct Bank Installation	19	19	0.143034	2.7	70.8	18
		Guard Structure Installation	6	6	0.220424	1.3		
		Guard Structure Removal	8	8	0.220424	1.8		
		Install Conductor	11	11	1.272544	14.0		
		Install TSP Foundation	60	60	0.110316	6.6		
		Install Wood/LWS Pole	16	16	0.320488	5.1		
		Location 1	45	10	0.905144	9.1		
		Location 2	34	3	0.586688	1.8		
		Marshaling Yard	140	140	0.073004	10.2		
		Restoration	5	5	0.269478	1.3		
		Road Work	1	1	0.47128	0.5		
		ROW Clearing	1	1	0.399656	0.4		
		TSP Assembly	30	30	0.136224	4.1		
		TSP Erection	30	30	0.158166	4.7		
		TSP Haul	8	8	0.079332	0.6		
		Vault Installation	22	22	0.27186	6.0		
		Wood/H-Frame/LWS Pole Removal	2	2	0.262524	0.5		
ML Sub	**Mira Loma Substation**	Civil	20	20	0.28084	5.6	12.8	12
		Electrical	20	20	0.358376	7.2		
ML Sub Linework	**Mira Loma Substation**	Location 1 - Construction Line	11	11	0.3368	3.7	100.1	18
		Location 1 - Stringing Crew	4	4	0.063648	0.3		
		Location 2 - Construction Line	57	57	0.3368	19.2		
		Location 2- Stringing Crew	10	10	0.063648	0.6		
		Location 3 - Construction Line	13	13	0.3368	4.4		
		Location 3 - Stringing Crew	5	5	0.063648	0.3		
		Location 4 - Construction Line	83	83	0.3368	28.0		
		Location 4 - Stringing Crew	11	11	0.063648	0.7		
		Location 5 -Trench/Duct Installation	165	165	0.114856	19.0		
		Location 5 -Vault Installation	96	96	0.249888	24.0		
ML-J Line	**Mira Loma-Jefferson 66kV**	Duct Bank Installation	2	2	0.143034	0.3	121.3	18
		Guard Structure Installation	12	12	0.220424	2.6		
		Guard Structure Removal	9	9	0.220424	2.0		
		H-Frame Hybrid Pole Structure Removal	8	8	0.311268	2.5		
		Hybrid Pole Haul	4	4	0.079332	0.3		
		Install H-frame Hybrid Pole Structure	16	16	0.320488	5.1		
		Install TSP Foundations	40	40	0.13903	5.6		
		Install Underground Cable	2	2	0.523416	1.0		
		Marshaling Yard	140	140	0.073004	10.2		
		Remove Exiting Conductor & GW	1	1	1.012806	1.0		
		Restoration	11	11	0.35562	3.9		
		Road Work	6	6	0.508142	3.0		
		ROW Clearing	21	21	0.42837	9.0		
		Transfer & Install Conductor	33	33	1.272544	42.0		
		TSP Assembly	18	18	0.191114	3.4		
		TSP Erection	18	18	0.162668	2.9		
		TSP Foundation Removal	14	14	0.256222	3.6		
		TSP Haul	4	4	0.079332	0.3		

Component	Component2	Activity	Max of Workdays	Min of Workdays	Sum of PM10	Total (lbs)	Component Totals (lbs)	Duration (months)
		TSP Removal	4	4	0.311268	1.2		
		Vault Installation	3	3	0.300574	0.9		
		Wood/H-Frame/LWS Pole Removal	25	25	0.262524	6.6		
		Wood/LWS Pole Assembly	56	56	0.191114	10.7		
		Wood/LWS Pole Haul	37	37	0.079332	2.9		
Substation	**Circle City Substation**	Asphalting	15	15	0.467424	7.0	292.0	12
		Civil	95	95	1.27128	120.8		
		Electrical	80	80	1.15642	92.5		
		Fencing	20	20	0.08644	1.7		
		Grading	60	60	0.554872	33.3		
		Temporary Power-Pole Installation	3	3	0.159088	0.5		
		Transformers	30	30	0.505944	15.2		
		Trench/Duct Installation	20	20	0.114856	2.3		
		Vault Installation	48	48	0.249888	12.0		
		Wiring	40	40	0.1684	6.7		
Telecommunications	**Telecommunication Facilities**	Fiber Optic Cable Installation	25	25	0.3368	8.4	11.1	6
		Fiber Optic Cable Splicing	10	10	0.097888	1.0		
		Underground Conduit	15	15	0.114856	1.7		

Off Road Use	off

Component	Component2	Activity	Values Max of Workdays	Min of Workdays	Sum of PM10
66 Subtrans Line	**Source Line Route**	Duct Bank Installation	19	19	0.143034
		Guard Structure Installation	6	6	0.220424
		Guard Structure Removal	8	8	0.220424
		Install Conductor	11	11	1.272544
		Install TSP Foundation	60	60	0.110316
		Install Wood/LWS Pole	16	16	0.320488
		Location 1	45	10	0.905144
		Location 2	34	3	0.586688
		Marshaling Yard	140	140	0.073004
		Restoration	5	5	0.269478
		Road Work	1	1	0.47128
		ROW Clearing	1	1	0.399656
		TSP Assembly	30	30	0.136224
		TSP Erection	30	30	0.158166
		TSP Haul	8	8	0.079332
		Vault Installation	22	22	0.27186
		Wood/H-Frame/LWS Pole Removal	2	2	0.262524
ML Sub	**Mira Loma Substa**	Civil	20	20	0.28084
		Electrical	20	20	0.358376
ML Sub Linework	**Mira Loma Substa**	Location 1 - Construction Line	11	11	0.3368
		Location 1 - Stringing Crew	4	4	0.063648
		Location 2 - Construction Line	57	57	0.3368
		Location 2- Stringing Crew	10	10	0.063648
		Location 3 - Construction Line	13	13	0.3368
		Location 3 - Stringing Crew	5	5	0.063648
		Location 4 - Construction Line	83	83	0.3368
		Location 4 - Stringing Crew	11	11	0.063648
		Location 5 -Trench/Duct Installation	165	165	0.114856
		Location 5 -Vault Installation	96	96	0.249888
ML-J Line	**Mira Loma-Jeffers**	Duct Bank Installation	2	2	0.143034
		Guard Structure Installation	12	12	0.220424
		Guard Structure Removal	9	9	0.220424
		H-Frame Hybrid Pole Structure Removal	8	8	0.311268
		Hybrid Pole Haul	4	4	0.079332
		Install H-frame Hybrid Pole Structure	16	16	0.320488
		Install TSP Foundations	40	40	0.13903
		Install Underground Cable	2	2	0.523416
		Marshaling Yard	140	140	0.073004
		Remove Exiting Conductor & GW	1	1	1.012806
		Restoration	11	11	0.35562

Component	Component2	Activity	Max of Workdays	Min of Workdays	Sum of PM10
ML-J Line	**Mira Loma-Jeffers**	Road Work	6	6	0.508142
		ROW Clearing	21	21	0.42837
		Transfer & Install Conductor	33	33	1.272544
		TSP Assembly	18	18	0.191114
		TSP Erection	18	18	0.162668
		TSP Foundation Removal	14	14	0.256222
		TSP Haul	4	4	0.079332
		TSP Removal	4	4	0.311268
		Vault Installation	3	3	0.300574
		Wood/H-Frame/LWS Pole Removal	25	25	0.262524
		Wood/LWS Pole Assembly	56	56	0.191114
		Wood/LWS Pole Haul	37	37	0.079332
Substation	**Circle City Substat**	Asphalting	15	15	0.467424
		Civil	95	95	1.27128
		Electrical	80	80	1.15642
		Fencing	20	20	0.08644
		Grading	60	60	0.554872
		Temporary Power-Pole Installation	3	3	0.159088
		Transformers	30	30	0.505944
		Trench/Duct Installation	20	20	0.114856
		Vault Installation	48	48	0.249888
		Wiring	40	40	0.1684
Telecommunications	**Telecommunicati**	Fiber Optic Cable Installation	25	25	0.3368
		Fiber Optic Cable Splicing	10	10	0.097888
		Underground Conduit	15	15	0.114856
Grand Total			**165**	**1**	**21.232544**

Project Activity	Approximate Start Date	Approximate Duration (Months)
Final Engineering	Q1, 2018	12 months
ROW/Property Acquisition	Q2. 2018	17 months
Acquisition of Required Permits	Q3, 2018	18 months
Substation Construction	Q3, 2019	12 months
Subtransmission Line Construction	Q3, 2020	18 months
Telecommunications Construction	Q4, 2020	6 months
Distribution Construction	Q3, 2019	11 months
Project Operational	Q2, 2021	

AERSCREEN RESULTS

VOLUME SOURCE PARAMETERES		
	5-acre	1-acre
SIDE LENGTH (m)	142.24	63.6
SOURCE EMISSION RATE (g/s)	1	1
VOLUME HEIGHT (m)	4.572	4.572
INITIAL LATERAL DIMENSION (m)	33.1	14.8
INITIAL VERTICAL DIMENSION (m)	2.13	2.13
RURAL OR URBAN	URBAN	URBAN
POPULATION	2,100,516	2,100,516
PROBE DISTANCE (m)	1000	500
DISCRETE RECEPTORS	YES	YES
RECEPTOR DISTANCES FROM SOURCE(m)	110	5
	120	10
	130	15
	140	20
	160	30
	170	35
	180	40
	190	45
	210	60
	240	70
FLAGPOLE RECPTOR HEIGHT (m)	0	0
MAKEMET METOEROLOGY PARAMETERS		
MINIMUM TEMPERATURE (K)	283.1	283.1
MAXIMUM TEMPERATURE (K)	299.3	299.3
ALBEDO	0.19	0.19
BOWEN RATIO	1	1
SURFACE ROUGHNESS (m)	0.314	0.314
MAXIMUM ANNUAL IMPACT (ug/m³)	**35.59**	**130.1**
DISTANCE FROM SOURCE (m)	**72.17**	**32.82**

AERSCREEN RESULTS

5-acre					
Distance From Center of Source (m)	Distance from Source Boundary (m)	Specified Receptors	Maximum 1-hr Concentration (ug/m³)	Annual Concentration (ug/m³)	
72.17	0		355.9	35.59	
75	2.83		335	33.5	
100	27.83		227.2	22.72	
125	52.83		164.6	16.46	
150	77.83		128.7	12.87	
175	102.83		104.6	10.46	
182.17	110	110	99.07	9.907	
192.17	120	120	92.12	9.212	
200	127.83		87.24	8.724	
202.17	130	130	85.96	8.596	
212.17	140	140	80.45	8.045	
225	152.83		74.21	7.421	
232.17	160	160	71.06	7.106	
242.17	170	170	67.03	6.703	
250	177.83		64.14	6.414	
252.17	180	180	63.37	6.337	
262.17	190	190	60.04	6.004	
275	202.83		56.17	5.617	
282.17	210	210	54.19	5.419	
300	227.83		49.73	4.973	
312.17	240	240	47.03	4.703	<--Approximately 800 feet
325	252.83		44.45	4.445	
350	277.83		40.04	4.004	
375	302.83		36.32	3.632	
400	327.83		33.15	3.315	
425	352.83		30.42	3.042	
450	377.83		28.05	2.805	
475	402.83		25.97	2.597	
500	427.83		24.14	2.414	
525	452.83		22.52	2.252	
550	477.83		21.07	2.107	
575	502.83		19.78	1.978	
600	527.83		18.61	1.861	
625	552.83		17.55	1.755	
650	577.83		16.59	1.659	
675	602.83		15.72	1.572	
700	627.83		14.92	1.492	
725	652.83		14.19	1.419	
750	677.83		13.52	1.352	
775	702.83		12.9	1.29	
800	727.83		12.32	1.232	
825	752.83		11.79	1.179	
850	777.83		11.3	1.13	
875	802.83		10.83	1.083	
900	827.83		10.4	1.04	
925	852.83		10	1	
950	877.83		9.627	0.9627	
975	902.83		9.274	0.9274	
1000	927.83		8.942	0.8942	

AERSCREEN RESULTS

1-acre					
Distance From Center of Source (m)	Distance from Source Boundary (m)	Specified Receptors	Maximum 1-hr Concentration (ug/m³)	Annual Concentration (ug/m³)	
32.82	0		1301	130.1	
37.82	5	5	1037	103.7	
42.82	10	10	856.4	85.64	
47.82	15	15	748.1	74.81	
50	17.18		707	70.7	
52.82	20	20	658.5	65.85	
62.82	30	30	520.9	52.09	<-- approx 100 feet
67.82	35	35	467.8	46.78	
72.82	40	40	422.4	42.24	
75	42.18		404.7	40.47	
77.82	45	45	383.5	38.35	
92.82	60	60	294.8	29.48	
100	67.18		263.2	26.32	
102.82	70	70	252.2	25.22	
125	92.18		186.2	18.62	
150	117.18		140.9	14.09	
175	142.18		113.1	11.31	
200	167.18		93.31	9.331	
225	192.18		78.71	7.871	
250	217.18		67.58	6.758	
275	242.18		58.86	5.886	
300	267.18		51.87	5.187	
325	292.18		46.18	4.618	
350	317.18		41.46	4.146	
375	342.18		37.51	3.751	
400	367.18		34.15	3.415	
425	392.18		31.27	3.127	
450	417.18		28.77	2.877	
475	442.18		26.6	2.66	
500	467.18		24.69	2.469	

A.3 AERSCREEN Output Files

- 1-acre
- 5-acre

AERSCREEN 16216 / AERMOD 16216r 04/07/17
17:01:03

TITLE: 1 acre updated receptors

********** VOLUME PARAMETERS **********

SOURCE EMISSION RATE: 1.0000 g/s 7.937 lb/hr
VOLUME HEIGHT: 4.57 meters 15.00 feet
INITIAL LATERAL DIMENSION: 14.80 meters 48.56 feet
INITIAL VERTICAL DIMENSION: 2.13 meters 6.99 feet
RURAL OR URBAN: URBAN
POPULATION: 2100516

FLAGPOLE RECEPTOR HEIGHT: 0.00 meters 0.00 feet

INITIAL PROBE DISTANCE = 500. meters 1640. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** PROBE ANALYSIS **********
25 meter receptor spacing: 33. meters - 500. meters

Zo SECTOR	ROUGHNESS LENGTH	1-HR CONC (ug/m3)	DIST (m)	TEMPORAL PERIOD
1*	0.314	1301.	32.8	ANN

* = worst case flow sector

```
--------------------------------------------------------------------------------
********************  MAKEMET METEOROLOGY PARAMETERS  ********************
--------------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    283.1 / 299.3 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO:                0.19
BOWEN RATIO:           1.00
ROUGHNESS LENGTH:      0.314 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


     METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
     ------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 31  31 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.45  0.029 -9.000  0.020 -999.   11.      4.9 0.314   1.00   0.19    0.50

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   299.3    2.0


     METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT
     ------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 31  31 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.45  0.029 -9.000  0.020 -999.   11.      4.9 0.314   1.00   0.19    0.50

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   299.3    2.0
```

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
32.82	1301.	150.00	140.9
37.82	1037.	175.00	113.1
42.82	856.4	200.00	93.31
47.82	748.1	225.00	78.71
50.00	707.0	250.00	67.58
52.82	658.5	275.00	58.86
62.82	520.9	300.00	51.87
67.82	467.8	325.00	46.18
72.82	422.4	350.00	41.46
75.00	404.7	375.00	37.51
77.82	383.5	400.00	34.15
92.82	294.8	425.00	31.27
100.00	263.2	450.00	28.77
102.82	252.2	475.00	26.60
125.00	186.2	500.00	24.69

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	1301.	1301.	1171.	780.6	130.1

DISTANCE FROM SOURCE 32.82 meters

IMPACT AT THE
AMBIENT BOUNDARY 1301. 1301. 1171. 780.6 130.1

DISTANCE FROM SOURCE 32.82 meters

AERSCREEN 16216 / AERMOD 16216r 04/07/17
17:14:56

TITLE: CC_volume 5 acre updated boundary

********** VOLUME PARAMETERS **********

SOURCE EMISSION RATE: 1.0000 g/s 7.937 lb/hr
VOLUME HEIGHT: 4.57 meters 15.00 feet
INITIAL LATERAL DIMENSION: 33.10 meters 108.60 feet
INITIAL VERTICAL DIMENSION: 2.13 meters 6.99 feet
RURAL OR URBAN: URBAN
POPULATION: 2100516

FLAGPOLE RECEPTOR HEIGHT: 0.00 meters 0.00 feet

INITIAL PROBE DISTANCE = 1000. meters 3281. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** PROBE ANALYSIS **********
25 meter receptor spacing: 72. meters - 1000. meters

Zo SECTOR	ROUGHNESS LENGTH	1-HR CONC (ug/m3)	DIST (m)	TEMPORAL PERIOD
1*	0.314	355.9	72.2	ANN

* = worst case flow sector

```
--------------------------------------------------------------------------------
********************** MAKEMET METEOROLOGY PARAMETERS **********************
--------------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    283.1 / 299.3 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO:                 0.19
BOWEN RATIO:            1.00
ROUGHNESS LENGTH:       0.314 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


      METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
      ---------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 31  31 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.45  0.029 -9.000  0.020 -999.   11.      4.9 0.314   1.00   0.19    0.50

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   299.3    2.0


      METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT
      ---------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 31  31 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.45  0.029 -9.000  0.020 -999.   11.      4.9 0.314   1.00   0.19    0.50

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   299.3    2.0
```

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
72.17	355.9	425.00	30.42
75.00	335.0	450.00	28.05
100.00	227.2	475.00	25.97
125.00	164.6	500.00	24.14
150.00	128.7	525.00	22.52
175.00	104.6	550.00	21.07
182.17	99.07	575.00	19.78
192.17	92.12	600.00	18.61
200.00	87.24	625.00	17.55
202.17	85.96	650.00	16.59
212.17	80.45	675.00	15.72
225.00	74.21	700.00	14.92
232.17	71.06	725.00	14.19
242.17	67.03	750.00	13.52
250.00	64.14	775.00	12.90
252.17	63.37	800.00	12.32
262.17	60.04	825.00	11.79
275.00	56.17	850.00	11.30
282.17	54.19	875.00	10.83
300.00	49.73	900.00	10.40
312.17	47.03	925.00	10.00
325.00	44.45	950.00	9.627
350.00	40.04	975.00	9.274
375.00	36.32	1000.00	8.942
400.00	33.15		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	355.9	355.9	320.3	213.5	35.59

DISTANCE FROM SOURCE 72.17 meters

IMPACT AT THE AMBIENT BOUNDARY	355.9	355.9	320.3	213.5	35.59

DISTANCE FROM SOURCE 72.17 meters

APPENDIX D.3
Fuel Use Estimates

CalendarYear	AirBasin	Equipment Class	uipmentTyp	Equipment Type	orsepowerB	BaseBSFC	ScenBSFC	BaseActivity	ScenActivity	Population
2018	SC	Construction and Mining	11	Bore/Drill Rigs	50	120907.401	120668.1394	14742.82211	14742.82211	43.51118253
2018	SC	Construction and Mining	11	Bore/Drill Rigs	120	750252.8698	751997.3497	50637.65405	50637.65405	133.2816223
2018	SC	Construction and Mining	11	Bore/Drill Rigs	175	870614.3928	871234.5701	31506.16609	31506.16609	104.4268381
2018	SC	Construction and Mining	11	Bore/Drill Rigs	250	1230919.2	1230382.385	32501.49091	32501.49091	103.9688256
2018	SC	Construction and Mining	11	Bore/Drill Rigs	500	1391406.657	1393026.468	21842.76605	21842.76605	72.82397918
2018	SC	Construction and Mining	11	Bore/Drill Rigs	750	1862568.38	1862670.559	16527.7574	16527.7574	36.18298337
2018	SC	Construction and Mining	12	Cranes	50	39839.74124	39839.74124	8451.937274	8451.937274	20.15456147
2018	SC	Construction and Mining	12	Cranes	120	950508.1134	950740.4737	101570.0993	101570.0993	243.0064269
2018	SC	Construction and Mining	12	Cranes	175	2508009.352	2507892.374	159533.1856	159533.1856	364.5096403
2018	SC	Construction and Mining	12	Cranes	250	4237579.925	4237108.785	184297.983	184297.983	409.4255201
2018	SC	Construction and Mining	12	Cranes	500	6498786.711	6497129.22	182646.1948	182646.1948	392.7260264
2018	SC	Construction and Mining	12	Cranes	750	1709430.616	1709301.225	28581.53358	28581.53358	57.58446134
2018	SC	Construction and Mining	13	Crawler Tractors	50	121488.2664	121488.2664	16611.34113	16611.34113	51.10920065
2018	SC	Construction and Mining	13	Crawler Tractors	120	5382678.089	5374915.153	389646.1717	389646.1717	879.5893433
2018	SC	Construction and Mining	13	Crawler Tractors	175	5856055.353	5851640.842	248860.9811	248860.9811	575.4895994
2018	SC	Construction and Mining	13	Crawler Tractors	250	5903700.73	5904262.437	184511.3585	184511.3585	420.6287214
2018	SC	Construction and Mining	13	Crawler Tractors	500	15829714	15813307.62	293092.3284	293092.3284	676.1747246
2018	SC	Construction and Mining	13	Crawler Tractors	750	6163060.418	6157913.396	68516.53193	68516.53193	138.5059338
2018	SC	Construction and Mining	14	Excavators	50	4854358.811	4855153.547	871656.1638	871656.1638	1251.783634
2018	SC	Construction and Mining	14	Excavators	120	6322131.629	6323193.052	556627.1282	556627.1282	905.4038808
2018	SC	Construction and Mining	14	Excavators	175	13300297.8	13299210.88	649393.0205	649393.0205	1150.329209
2018	SC	Construction and Mining	14	Excavators	250	16889553.63	16890977	551798.7971	551798.7971	988.9244425
2018	SC	Construction and Mining	14	Excavators	500	28065603.91	28073084.76	611099.93	611099.93	1005.833513
2018	SC	Construction and Mining	14	Excavators	750	2545092.833	2548088.994	31634.91509	31634.91509	51.23960842
2018	SC	Construction and Mining	15	Graders	50	32118.9634	32118.9634	5238.436538	5238.436538	15.96520848
2018	SC	Construction and Mining	15	Graders	120	866148.7469	864299.2069	63676.15765	63676.15765	169.9522193
2018	SC	Construction and Mining	15	Graders	175	8013488.802	7995705.436	355268.0098	355268.0098	795.1703837
2018	SC	Construction and Mining	15	Graders	250	13980956.98	13976057.24	451347.121	451347.121	631.3982451
2018	SC	Construction and Mining	15	Graders	500	3985217.741	3984221.148	90574.90998	90574.90998	117.9365401
2018	SC	Construction and Mining	16	Off-Highway Tractors	50	2011687.956	2013663.978	300898.2161	300898.2161	479.4858673
2018	SC	Construction and Mining	16	Off-Highway Tractors	120	2561542.969	2561019.485	213924.9982	213924.9982	348.6251301
2018	SC	Construction and Mining	16	Off-Highway Tractors	175	2188267.387	2188744.708	86472.34184	86472.34184	132.3764987
2018	SC	Construction and Mining	16	Off-Highway Tractors	250	1834131.132	1834943.408	53878.44233	53878.44233	86.3984018
2018	SC	Construction and Mining	16	Off-Highway Tractors	500	5162533.72	5160217.679	97003.38705	97003.38705	148.5446206
2018	SC	Construction and Mining	16	Off-Highway Tractors	750	1301050.404	1300843.78	14197.6066	14197.6066	21.7259139
2018	SC	Construction and Mining	17	Off-Highway Trucks	50	193161.0231	194700.7219	43713.64549	43713.64549	28.53607973
2018	SC	Construction and Mining	17	Off-Highway Trucks	120	235978.3206	235851.8822	19619.90168	19619.90168	16.02025529
2018	SC	Construction and Mining	17	Off-Highway Trucks	175	4561904.39	4564441.964	205959.0243	205959.0243	153.1936912
2018	SC	Construction and Mining	17	Off-Highway Trucks	250	9370992.394	9375211.315	318799.4955	318799.4955	262.3316804
2018	SC	Construction and Mining	17	Off-Highway Trucks	500	39779030.76	39736550.84	756507.5101	756507.5101	582.7367861
2018	SC	Construction and Mining	17	Off-Highway Trucks	750	14193065.64	14194283.79	153866.6939	153866.6939	133.1683721
2018	SC	Construction and Mining	18	Other Construction Equipment	50	1088351.197	1087645.544	167699.4622	167699.4622	370.2788092
2018	SC	Construction and Mining	18	Other Construction Equipment	120	3412675.622	3409220.607	274399.3216	274399.3216	653.3452475
2018	SC	Construction and Mining	18	Other Construction Equipment	175	1854016.144	1854037.035	80148.97493	80148.97493	203.3294134
2018	SC	Construction and Mining	18	Other Construction Equipment	250	2379471.265	2379138.579	71477.8966	71477.8966	182.3984444
2018	SC	Construction and Mining	18	Other Construction Equipment	500	8117000.003	8111477.512	148205.4755	148205.4755	354.3314042
2018	SC	Construction and Mining	18	Other Construction Equipment	750	3166224.02	3170135.516	34700.02446	34700.02446	73.25839159
2018	SC	Construction and Mining	19	Pavers	50	133211.0452	133193.3323	20276.50339	20276.50339	60.01610489
2018	SC	Construction and Mining	19	Pavers	120	1289929.069	1290460.455	106849.1412	106849.1412	291.5782429
2018	SC	Construction and Mining	19	Pavers	175	1754116.982	1754570.709	72645.1594	72645.1594	197.0528777
2018	SC	Construction and Mining	19	Pavers	250	1180499.63	1181181.13	36255.38593	36255.38593	85.02281526
2018	SC	Construction and Mining	19	Pavers	500	444771.8434	444771.8434	9024.401536	9024.401536	21.00563671
2018	SC	Construction and Mining	19	Pavers	750	51543.55058	51543.55058	450.7964754	450.7964754	1.000268415
2018	SC	Construction and Mining	20	Paving Equipment	50	165798.9106	165835.2654	33154.13572	33154.13572	73.90082722
2018	SC	Construction and Mining	20	Paving Equipment	120	754177.9276	753927.1924	65068.95474	65068.95474	150.7976339
2018	SC	Construction and Mining	20	Paving Equipment	175	710460.1091	710306.022	36817.11871	36817.11871	82.38943575
2018	SC	Construction and Mining	20	Paving Equipment	250	372268.8074	372397.0944	13242.39334	13242.39334	29.95979482
2018	SC	Construction and Mining	20	Paving Equipment	500	524816.377	524760.3563	11971.28474	11971.28474	26.96381534
2018	SC	Construction and Mining	20	Paving Equipment	750	249020.2343	249020.2343	3157.135169	3157.135169	6.491288877
2018	SC	Construction and Mining	21	Rollers	50	2734546.175	2735184.016	499789.285	499789.285	1516.256743
2018	SC	Construction and Mining	21	Rollers	120	4272923.215	4273173.086	355960.5924	355960.5924	1130.76774
2018	SC	Construction and Mining	21	Rollers	175	4418404.777	4418371.651	223276.4126	223276.4126	653.7893481
2018	SC	Construction and Mining	21	Rollers	250	697931.9093	697783.0921	23702.55422	23702.55422	80.18171251
2018	SC	Construction and Mining	21	Rollers	500	441663.007	441663.007	9432.23512	9432.23512	32.89506154
2018	SC	Construction and Mining	21	Rollers	750	21473.65244	21473.65244	299.1611106	299.1611106	1.027970673
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	50	139309.7152	139310.5907	17940.97157	17940.97157	68.86768545
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	120	11213670.22	11213911.71	787786.8977	787786.8977	2950.624109
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	175	2061540.714	2061540.714	107919.9864	107919.9864	394.8018174
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	250	169487.4786	169398.1493	5504.309313	5504.309313	23.1537908
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	500	71607.02733	71874.09964	1314.932765	1314.932765	5.343182491
2018	SC	Construction and Mining	22	Rough Terrain Forklifts	750	11240.21985	11240.21985	121.8997096	121.8997096	0.593686943
2018	SC	Construction and Mining	23	Rubber Tired Dozers	50	119921.6824	121351.8447	18145.87746	18145.87746	20.06747017
2018	SC	Construction and Mining	23	Rubber Tired Dozers	120	572742.4373	574821.337	47951.1254	47951.1254	59.71296001
2018	SC	Construction and Mining	23	Rubber Tired Dozers	175	479279.8471	478876.7181	22004.14086	22004.14086	30.83538099
2018	SC	Construction and Mining	23	Rubber Tired Dozers	250	500107.4198	500107.4198	16232.53911	16232.53911	23.9830741
2018	SC	Construction and Mining	23	Rubber Tired Dozers	500	5735357.46	5728453.163	109786.0124	109786.0124	160.0503108
2018	SC	Construction and Mining	23	Rubber Tired Dozers	750	673385.8352	673385.8352	7929.500918	7929.500918	9.789009837
2018	SC	Construction and Mining	26	Skid Steer Loaders	50	2067581.178	2067471.169	314983.4239	314983.4239	1050.433677
2018	SC	Construction and Mining	26	Skid Steer Loaders	120	10978565.8	10975470.71	1151316.588	1151316.588	3389.822907
2018	SC	Construction and Mining	26	Skid Steer Loaders	175	74230.81936	74038.26828	3618.449102	3618.449102	14.06133331
2018	SC	Construction and Mining	26	Skid Steer Loaders	250	57034.32699	56652.83806	2139.270497	2139.270497	7.811851837
2018	SC	Construction and Mining	26	Skid Steer Loaders	500	15680.30579	15680.30579	430.3488755	430.3488755	1.562370367
2018	SC	Construction and Mining	26	Skid Steer Loaders	750	16540.65608	16540.65608	230.7667883	230.7667883	0.520790122
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	50	4095567.881	4097313.29	723508.6541	723508.6541	1470.002474
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	120	65869149.58	65802979.27	5842812.443	5842812.443	9981.163139
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	175	11382737.28	11378471.57	590121.6377	590121.6377	1116.587245
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	250	6622603.283	6626569.873	240402.4661	240402.4661	446.634898
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	500	8825554.74	8827579.967	205617.891	205617.891	403.0982393
2018	SC	Construction and Mining	28	Tractors/Loaders/Backhoes	750	1260121.485	1260055.194	16395.22387	16395.22387	28.17077912
2018	SC	Industrial	30	Aerial Lifts	50	2807822.029	2807822.029	483992.5157	483992.5157	1680.148287
2018	SC	Industrial	30	Aerial Lifts	120	4899317.332	4899317.332	585110.9868	585110.9868	2035.366046
2018	SC	Industrial	30	Aerial Lifts	175	299426.5759	299426.5759	20290.98335	20290.98335	70.56781384
2018	SC	Industrial	30	Aerial Lifts	250	10891.43313	10891.43313	458.5292405	458.5292405	1.585793569
2018	SC	Industrial	30	Aerial Lifts	500	19708.30756	19708.30756	458.5292405	458.5292405	1.585793569
2018	SC	Industrial	31	Forklifts	50	1889777.013	1889777.013	542643.0361	542643.0361	778.7380832
2018	SC	Industrial	31	Forklifts	120	22766873.17	22766873.17	3751161.268	3751161.268	5199.524772
2018	SC	Industrial	31	Forklifts	175	7188863.917	7188863.917	689694.9072	689694.9072	964.7342039
2018	SC	Industrial	31	Forklifts	250	1518801.854	1518801.854	98647.84439	98647.84439	138.3708164
2018	SC	Industrial	31	Forklifts	500	444057.5674	444057.5674	17455.87359	17455.87359	25.09982252

Fuel Use Estimates for the Circle City Project

Total Fuel Use During Contruction

Fuel Type	Fuel Consumed		Gallons sold in County in 2015		% Proj. gal. comp. to Co. gal.	
	(gal/proj)	(av. gal/yr)	Riverside County	San Bernardino Co.	Riverside County	San Bernardino Co.
Gasoline	46,067	30,712	1,039,000,000	909,000,000	0.003%	0.003%
Diesel	223,811	149,208	146,000,000	241,000,000	0.102%	0.062%

Offroad Equipment Diesel Fuel Use

Equipment Type - horsepower	Total Hours	Diesel Fuel Consumed		
		Gallons/hour	(gal/proj)	(max gal/yr)
Crane - 300 hp	5,114	5.01	25,613	17,075
Drum Sock Line Puller - other 300 hp	66	7.71	509	339
Asphalt Curb Machine - paving eq. 25 hp	120	0.70	85	56
Asphalt Paver - 152 hp	120	3.40	408	272
Tractors/loaders/backhoes - 200 hp	6,990	3.88	27,128	18,085
Bobcat - skid Steer Loaders 75 hp	2,600	1.34	3,490	2,326
Boom/Crane Truck - Crane 235 hp	3,370	3.24	10,909	7,272
Bucket Truck Aerial Lifts 350 hp	8,722	6.05	52,782	35,188
Bull Wheel Puller - other const. eq. 300 hp	270	7.71	2,081	1,387
Cable pulling truck - other const. eq. 9 hp	400	0.91	365	244
Compressor Trailer - air compressor 120 hp	1,296	1.75	2,267	1,511
Drill Rig - Bore/drill rigs 500 hp	1,600	8.98	14,367	9,578
Drum Type Compactor - Rollers 250 hp	104	4.14	431	287
Earth Movers - crawler tractor 350 hp	960	7.60	7,293	4,862
Excavator - 152 hp	994	2.88	2,866	1,911
Forklift 100 hp	2,600	2.00	5,211	3,474
Medium Duty Splicing Lab Truck - Gen.15 hp	160	0.91	146	97
Motor Grader - 350 hp	228	6.19	1,412	941
Paving Roller - 150 hp	120	2.79	334	223
Puller - other const. eq. 300 hp	12	7.71	92	62
Road Grader - 350 hp	42	6.47	272	181
Rough Terrain Crane (crane 350 hp)	72	5.01	361	240
Rough Terrain Forklift - 200 hp	1,680	4.33	7,280	4,853
Scissor Lift- Aerial Lift 50 hp	1,280	0.82	1,046	697
Sock Line Puller - other const. eq. - 300 hp	204	7.71	1,572	1,048
Splicing Van - other 15 hp	80	0.91	73	49
Static Truck/ Tensioner - other 350 hp	282	7.71	2,173	1,449
Track Type Dozer- crawler tractor 350 hp	160	7.60	1,215	810
Truck pulling reel dolly - other 9 hp	240	0.91	219	146
Work Truck with attached Auger - drill 500 hp	24	8.98	216	144
Total eq. hours /av. gallons/hr./ total gallons	39,910	4.51	172,214	114,810

Notes: Total equipment hours obained from Appendix D, Air Quality and Greenhouse Gas Emissions
fuel use rates obtained from the Off-road 2011 model (see table below).

Off-road 2011 Model Construction Equipment Fuel Consumption Output

Equipment Type	HP Bin	BSFC (lbs/yr)	Activity (hrs/yr)	BSFC (gal/hr)*
Bore/Drill Rigs	50	120668	14743	1.15
Bore/Drill Rigs	120	751997	50638	2.09
Bore/Drill Rigs	175	871235	31506	3.89
Bore/Drill Rigs	250	1230382	32501	5.33
Bore/Drill Rigs	500	1393026	21843	8.98
Bore/Drill Rigs	750	1862671	16528	15.87
Cranes	50	39840	8452	0.66
Cranes	120	950740	101570	1.32
Cranes	175	2507892	159533	2.21
Cranes	250	4237109	184298	3.24
Cranes	500	6497129	182646	5.01
Cranes	750	1709301	28582	8.42
Crawler Tractors	50	121488	16611	1.03
Crawler Tractors	120	5374915	389646	1.94
Crawler Tractors	175	5851641	248861	3.31
Crawler Tractors	250	5904262	184511	4.51
Crawler Tractors	500	15813308	293092	7.60
Crawler Tractors	750	6157913	68517	12.65
Excavators	50	4855154	871656	0.78
Excavators	120	6323193	556627	1.60
Excavators	175	13299211	649393	2.88
Excavators	250	16890977	551799	4.31
Excavators	500	28073085	611100	6.47
Excavators	750	2548089	31635	11.34
Graders	50	32119	5238	0.86
Graders	120	864299	63676	1.91
Graders	175	7995705	355268	3.17
Graders	250	13976057	451347	4.36
Graders	500	3984221	90575	6.19
Other Construction Equipment	50	1087646	167699	0.91
Other Construction Equipment	120	3409221	274399	1.75
Other Construction Equipment	175	1854037	80149	3.26
Other Construction Equipment	250	2379139	71478	4.69
Other Construction Equipment	500	8111478	148205	7.71
Other Construction Equipment	750	3170136	34700	12.86
Pavers	50	133193	20277	0.92
Pavers	120	1290460	106849	1.70
Pavers	175	1754571	72645	3.40
Pavers	250	1181181	36255	4.59
Pavers	500	444772	9024	6.94
Pavers	750	51544	451	16.10
Paving Equipment	50	165835	33154	0.70
Paving Equipment	120	753927	65069	1.63
Paving Equipment	175	710306	36817	2.72
Paving Equipment	250	372397	13242	3.96
Paving Equipment	500	524760	11971	6.17
Paving Equipment	750	249020	3157	11.11
Rollers	50	2735184	499789	0.77
Rollers	120	4273173	355961	1.69
Rollers	175	4418372	223276	2.79
Rollers	250	697783	23703	4.14
Rollers	500	441663	9432	6.59
Rollers	750	21474	299	10.11
Rough Terrain Forklifts	50	139311	17941	1.09
Rough Terrain Forklifts	120	11213912	787787	2.00
Rough Terrain Forklifts	175	2061541	107920	2.69
Rough Terrain Forklifts	250	169398	5504	4.33
Rough Terrain Forklifts	500	71874	1315	7.70
Rough Terrain Forklifts	750	11240	122	12.98
Skid Steer Loaders	120	10975471	1151317	1.34
Skid Steer Loaders	175	74038	3618	2.88
Skid Steer Loaders	250	56653	2139	3.73
Skid Steer Loaders	500	15680	430	5.13
Skid Steer Loaders	750	16541	231	10.09
Tractors/Loaders/Backhoes	50	4097313	723509	0.80
Tractors/Loaders/Backhoes	120	65802979	5842812	1.59
Tractors/Loaders/Backhoes	175	11378472	590122	2.71
Tractors/Loaders/Backhoes	250	6626570	240402	3.88
Tractors/Loaders/Backhoes	500	8827580	205618	6.04
Tractors/Loaders/Backhoes	750	1260055	16395	10.82
Aerial Lifts	50	2807822	483993	0.82
Aerial Lifts	120	4899317	585111	1.18
Aerial Lifts	175	299427	20291	2.08
Aerial Lifts	250	10891	459	3.34
Aerial Lifts	500	19708	459	6.05
Forklifts	50	1889777	542643	0.49
Forklifts	120	22766873	3751161	0.85
Forklifts	175	7188864	689695	1.47
Forklifts	250	1518802	98648	2.17
Forklifts	500	444058	17456	3.58

*There is 1.874 pounds/liter of diesel, and 3.79 liters/gallon.
Fuel use factors for South Coast Air Basin; BSFC = brake specific fuel consumption; calendar year 2018..

Onroad Vehicle Fuel Use

Vehicle Type	Total Miles	Vehicle Type	miles/gallon	Gal./project	Max Gal. Year
Diesel Fueled Vehicle Trips					
1 Ton Crew Cab, 4x4	50,286	HDT	6	8,381	5,587
3/4 Ton Truck, 4x4	17,828	HDT	6	2,971	1,981
Auger Truck	3,136	HDT	6	523	348
Cable Chopping Truck	200	HDT	6	33	22
Carry all Truck	600	HDT	6	100	67
Concrete Mixer Truck	25,750	HDT	6	4,292	2,861
Dump Truck	170,254	HDT	6	28,376	18,917
Flat Bed Truck	11,296	HDT	6	1,883	1,255
Lowboy Truck/Trailer	4,442	HDT	6	740	494
Pipe Truck/Trailer	424	HDT	6	71	47
Single axle Trailer	4,240	HDT	6	707	471
Truck, Semi	5,880	HDT	6	980	653
Water Truck	13,266	HDT	6	2,211	1,474
Wire Truck/Trailer	1,980	HDT	6	330	220
Total	309,582			51,597	34,398
Gasoline Fueled Vehicle Trips					
Worker Commute	1,012,580	auto and LDT	22	46,026	30,684
Survey Truck	900	auto and LDT	22	41	27
Total	1,013,480			46,067	30,712

HDT: heavy-duty diesel truck; auto and LDT (light-duty trucks) are gasoline fueled.
Fuel economy sources: 24/7 Wall Street, 2017; Union of Concerned Scientists, 2017.

Appendix E

Cultural Resources Technical Report

ESA

APPENDIX E
Cultural Resources Technical Reports

Qualified individuals can request a copy of the following reports from CPUC via the project email address (CircleCityEIR@esassoc.com).

E1. Hoffman, Robin, Timothy Yates, and Karen Crawford, 2012. Cultural Resources Inventory Report for the Proposed Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500436812), prepared by ICF, prepared for Southern California Edison, 2012.

E2. ICF, 2015a. Addendum 1 Cultural Resources Inventory Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500436812), prepared for Southern California Edison, 2015.

E3. ICF, 2015b. Addendum 2 Cultural Resources Inventory Report for the Circle City Substation and Mira Loma-Jefferson Subtransmission Line Project, Riverside and San Bernardino Counties, California (PO# 4500700244), prepared for Southern California Edison, 2015.

E4. Williams, Brian, 2015. Cultural Resources Supplemental Record Search Review of the Southern California Edison Company's Circle City Substation and Mira Loma-Jefferson Subtransmission Project, Riverside and San Bernardino Counties, California, prepared by ASM Affiliates, prepared for Southern California Edison, 2015.

E5. 2018 Supplemental CHRIS Records Search, ESA, April 2018.

This page intentionally left blank

Appendix F
Tribal Consultation Record

ESA

APPENDIX F
Tribal Consultation Record

Qualified individuals can request a copy of the following record from CPUC via the project email address (CircleCityEIR@esassoc.com).

This page intentionally left blank

Appendix G

Circle City and Mira Loma-Jefferson 66 kV Subtransmission Line Project Noise Supplement

ESA

Circle City Substation Construction

Construction Activity	Distance of 85 dBA Leq Exposure (feet)	Source dBA at 50 feet	dBA at distance from source
Grading	48	84.7	85.05457534
Civil	70	88	85.07743929
Asphalting	39	82.8	84.95810795

Source, Acentech, 2017.

Revised Distance for 80 dBA Leq Limit	Distance of 80 dBA Leq Exposure (feet)	Source dBA at 50 feet	dBA at distance from source
Grading	85	84.7	80.09102157
Civil	125	88	80.04119983
Asphalting	69	82.8	80.00241827

dBA Leq at Sensitive Receptor location	Distance from Recepter (feet)	Source dBA at 50 feet	dBA at distance from source
Grading	720	84.7	61.53275016
Civil	720	88	64.83275016
Asphalting	720	82.8	59.63275016

Source Lines and Mira Loma-Jefferson Lines Construction

PEA Distance for 80 dBA Leq Limit	Distance of 80 dBA Leq Exposure (feet)	Source dBA at 50 feet	dBA at distance from source
Marshaling Yard Use	64	82.1	79.95580061
Road Work	91	85.2	79.99857224
Remove Existing Conductor and Ground Wire	47	79.5	80.03744293
Light-Weight Steel (LWS) Pole Removal	42	78.5	80.01441428
Install TSP Foundation	54	80.7	80.03152489
TSP Assembly	47	79.5	80.03744293
TSP Erection	47	79.5	80.03744293
Wood LWS Pole Assembly	47	79.5	80.03744293
Transfer and Install Conductor	67	82.6	80.05790403
Vault Installation	75	83.5	79.97817482
Duct Bank Installation	84	84.5	79.99381437
Underground Cable Installation	57	81.1	79.96190297

Source, Acentech, 2017.

PEA Distance for 80 dBA Leq Limit	Distance from Receptor (feet)	Source dBA at 50 feet	dBA at distance from source
Mira Loma-Jefferson Line			
Marshaling Yard Use	300	82.1	66.53697499
Road Work	40	85.2	87.13820026

Remove Existing Conductor and Ground Wire	30	79.5	83.93697499
Light-Weight Steel (LWS) Pole Removal	30	78.5	82.93697499
Install TSP Foundation	50	80.7	80.7
TSP Assembly	50	79.5	79.5
TSP Erection	50	79.5	79.5
Wood LWS Pole Assembly	30	79.5	83.93697499
Transfer and Install Conductor	30	82.6	87.03697499
Vault Installation	60	83.5	81.91637508
Duct Bank Installation	60	84.5	82.91637508
Underground Cable Installation	60	81.1	79.51637508

PEA Distance for 80 dBA Leq Limit	Distance of 80 dBA Leq Exposure (feet)	Source dBA at 50 feet	dBA at distance from source
Pedley Source Lines			
Marshaling Yard Use	64	82.1	79.95580061
Road Work	91	85.2	79.99857224
Install TSP Foundation	54	80.7	80.03152489
TSP Assembly	47	79.5	80.03744293
TSP Erection	47	79.5	80.03744293
LWS Pole Assembly	47	79.5	80.03744293
Install Conductor	67	82.6	80.05790403
Vault Installation	75	83.5	79.97817482
Duct Bank Installation	84	84.5	79.99381437
Underground Cable Installation	57	81.1	79.96190297

Source, Acentech, 2017.

PEA Distance for 80 dBA Leq Limit	Distance of 80 dBA Leq Exposure (feet)	Source dBA at 50 feet	dBA at distance from source
Pedley Source Lines			
Marshaling Yard Use	200	82.1	70.05880017
Road Work	100	85.2	79.17940009
Install TSP Foundation	75	80.7	77.17817482
TSP Assembly	75	79.5	75.97817482
TSP Erection	75	79.5	75.97817482
LWS Pole Assembly	30	79.5	83.93697499
Install Conductor	30	82.6	87.03697499
Vault Installation	70	83.5	80.57743929
Duct Bank Installation	70	84.5	81.57743929
Underground Cable Installation	70	81.1	78.17743929
Databank Source Lines			
TSP Assembly	75	79.5	75.97817482
TSP Erection	75	79.5	75.97817482
Vault Installation	75	83.5	79.97817482
Duct Bank Installation	75	84.5	80.97817482
Underground Cable Installation	75	81.1	77.57817482

Alternative C3

HVAC Units	Distance from Recepter (feet)	Source dBA at 50 feet	dBA at distance from source	
1	138	50	41.18181836	13127.49
2	81	50	45.80969971	38103.95
3	50	50	50	100000
4	81	50	45.80969971	38103.95
5	138	50	41.18181836	13127.49
			Adding Noise Sourc	53.1

See Caltrans Page 14

Transformers	Distance from Recepter (feet)	Source dBA at 7 feet	dBA at distance from source	
1	100	68	44.9019608	30916.91
			Adding Noise Sourc	53.7

Alternative D2

Operations

Substation	Distance from Recepter (feet)	Source dBA at 850 feet	dBA at distance from source	
Leq	100	32	50.58838	114508.5332
Ldn	100	39	57.58838	573902.1496

Construction

dBA Leq at Sensitive	Distance from Recepter (feet)	Source dBA at 50 feet	dBA at distance from source
Grading	100	84.7	78.6794
Civil	100	88	81.9794
Asphalting	100	82.8	76.7794

Vibration Attenuation by Distance - Formulas

Damage Assessment

Distance from source	Ref PPV at 25 feet	PPV at distance from source
50	0.09	0.031819805

$PPVequip = PPVref \times (25/D)^{1.5}$

where: PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance
PPV (ref) is the reference vibration level in in/sec at 25 feet from Table 12-2 (FTA, 2006; page 12-12)
D is the distance from the equipment to the receiver.
Apply the vibration damage criteria from Table 12-3 (FTA, 2006; page 12-13).

Calculated Ldn for Worst-Case Corona Noise

Distance from source	Source dBA at 25 feet	dBA at distance from source	
35	37	35.54	line source with hard site

		TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight		0 / 24	35.5	3581	35810	11324
am	1:00	100	35.5	3581	35810	11324
	2:00	200	35.5	3581	35810	11324
	3:00	300	35.5	3581	35810	11324
	4:00	400	35.5	3581	35810	11324
	5:00	500	35.5	3581	35810	11324
	6:00	600	35.5	3581	35810	11324
	7:00	700	35.5	3581	35810	11324
	8:00	800	35.5	3581	35810	11324
	9:00	900	35.5	3581	35810	11324
	10:00:AM	1000	35.5	3581	35810	11324
	11:00: AM	1100	35.5	3581	35810	11324
	12:00:PM	1200	35.5	3581	35810	11324
pm	1:00	1300	35.5	3581	35810	11324
	2:00	1400	35.5	3581	35810	11324
	3:00	1500	35.5	3581	35810	11324
	4:00	1600	35.5	3581	35810	11324
	5:00	1700	35.5	3581	35810	11324
	6:00	1800	35.5	3581	35810	11324
	7:00	1900	35.5	3581	35810	11324
	8:00	2000	35.5	3581	35810	11324
	9:00	2100	35.5	3581	35810	11324
	10:00: AM	2200	35.5	3581	35810	11324
pm	11:00: AM	2300	35.5	3581	35810	11324

Leq Morning Peak Hour 7:00-10:00 a.m.
36 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
36 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)
36 dBA

Leq Daytime 7:00 am-10:00 p.m.
36 dBA

Leq 24-Hour
36 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
42 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
42 dBA

CNEL - Ldn 0.2603428

Calculated Ldn for Worst-Case Substation Noise at Site Perimeter

		TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight		0 / 24	43.5	22387	223872	70795
am	1:00	100	43.5	22387	223872	70795
	2:00	200	43.5	22387	223872	70795
	3:00	300	43.5	22387	223872	70795
	4:00	400	43.5	22387	223872	70795
	5:00	500	43.5	22387	223872	70795
	6:00	600	43.5	22387	223872	70795
	7:00	700	43.5	22387	223872	70795
	8:00	800	43.5	22387	223872	70795
	9:00	900	43.5	22387	223872	70795
	10:00:AM	1000	43.5	22387	223872	70795
	11:00: AM	1100	43.5	22387	223872	70795
	12:00:PM	1200	43.5	22387	223872	70795
pm	1:00	1300	43.5	22387	223872	70795
	2:00	1400	43.5	22387	223872	70795
	3:00	1500	43.5	22387	223872	70795
	4:00	1600	43.5	22387	223872	70795
	5:00	1700	43.5	22387	223872	70795
	6:00	1800	43.5	22387	223872	70795
	7:00	1900	43.5	22387	223872	70795
	8:00	2000	43.5	22387	223872	70795
	9:00	2100	43.5	22387	223872	70795
	10:00: AM	2200	43.5	22387	223872	70795
pm	11:00: AM	2300	43.5	22387	223872	70795

Leq Morning Peak Hour 7:00-10:00 a.m.

44 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.

44 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)

44 dBA

Leq Daytime 7:00 am-10:00 p.m.

44 dBA

Leq 24-Hour

44 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

50 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.

50 dBA

CNEL - Ldn 0.2603428

Calculated Ldn for Worst-Case Substation Noise at Closest Residence

		TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight		0 / 24	32.1	1622	16218	5129
am	1:00	100	32.1	1622	16218	5129
	2:00	200	32.1	1622	16218	5129
	3:00	300	32.1	1622	16218	5129
	4:00	400	32.1	1622	16218	5129
	5:00	500	32.1	1622	16218	5129
	6:00	600	32.1	1622	16218	5129
	7:00	700	32.1	1622	16218	5129
	8:00	800	32.1	1622	16218	5129
	9:00	900	32.1	1622	16218	5129
	10:00:AM	1000	32.1	1622	16218	5129
	11:00: AM	1100	32.1	1622	16218	5129
	12:00:PM	1200	32.1	1622	16218	5129
pm	1:00	1300	32.1	1622	16218	5129
	2:00	1400	32.1	1622	16218	5129
	3:00	1500	32.1	1622	16218	5129
	4:00	1600	32.1	1622	16218	5129
	5:00	1700	32.1	1622	16218	5129
	6:00	1800	32.1	1622	16218	5129
	7:00	1900	32.1	1622	16218	5129
	8:00	2000	32.1	1622	16218	5129
	9:00	2100	32.1	1622	16218	5129
	10:00: AM	2200	32.1	1622	16218	5129
pm	11:00: AM	2300	32.1	1622	16218	5129

Leq Morning Peak Hour 7:00-10:00 a.m.
32 dBA

Leq Evening Peak Hour 4:00-8:00 p.m.
32 dBA

Leq Nighttime 10:00 pm-7:00 a.m. (not penalized)
32 dBA

Leq Daytime 7:00 am-10:00 p.m.
32 dBA

Leq 24-Hour
32 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
39 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
39 dBA

CNEL - Ldn 0.2603428