SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

February 1, 2016

Streambed Alteration Program
Department of Fish and Wildlife
South Coast Region
3883 Ruffin Road
San Diego, CA 92123

Re: Southern California Edison's Notification of Lake or Streambed Alteration

Dear Staff:

Southern California Edison (SCE) is proposed to construct the Mesa 500 kilovolt (kV) Substation Project (Project). Construction of the Project will involve fill and disturbance within streambeds that are under the jurisdiction of the CDFW. Pursuant to Section 1602 of the California Fish and Game Code, SCE is submitting a Notification of Lake or Streambed Alteration (LSA). The enclosed Notification of LSA package provides the application materials required for issuance of an LSA Agreement for the Project.

The enclosed application package includes the following:

- A check for the notification fee in the amount of $4,912.25
- Completed Notification of LSA form
- Attachment A: Supplemental Information, containing a detailed explanation for the following sections of the permit application:
    - Box 8: Project Location
    - Box 10: Project Description
    - Box 10B: Project Description – Equipment
    - Box 11A: Project Impacts – CDFW Jurisdiction
    - Box 11B: Project Impacts – Vegetation
    - Box 11C: Project Impacts – Special Status Animal or Plant Species, or Habitat
    - Box 12A: Measures to Protect Fish, Wildlife, and Plant Resources – Sediment-Prevention Techniques
    - Box 12B: Measures Protect Fish, Wildlife, and Plant Resources – Avoidance and/or Minimization Measures
    - Box 13: Permits
- Attachment B: Figures, including:
    - Figure 1: Project Components Overview Map
    - Figure 2: Proposed Substation Layout
    - Figure 3: Grading Phases Areas
    - Figure 4: Impacts to CDFW-Jurisdictional Waters Overview
    - Figure 5: Impacts to Riparian Vegetation
- Attachment C: Biological Resources Technical Report
- Attachment D: Biological Assessment
- Attachment E: Photographs of Impacted Water Features

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- Attachment F: Hydrology Report
- Attachment G: Section 404 Nationwide Permit (provided on CD only)
- Attachment H: Section 401 Water Quality Certification (provided on CD only)
- An electronic version of the entire Section 1602 Notification of LSA application package on CD

We appreciate your review and input to this point, and look forward to continuing to work with you on permitting the Project. Should you have any questions about the enclosed, please do not hesitate to contact me at (626) 404-4048.

Sincerely,

Richard Haywood
Senior Regulatory Specialist
Gateway Business Center
6040A Irwindale Avenue
Irwindale, CA 91702
(626) 404-4048
Richard.haywood@sce.com

SOUTHERN CALIFORNIA EDISON COMPANY

MESA 500 KILOVOLT SUBSTATION PROJECT NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Prepared for:

Prepared by:

February 2016

FOR DEPARTMENT USE ONLY				
Date Received	*Amount Received*	*Amount Due*	*Date Complete*	*Notification No.*
	$	$		

STATE OF CALIFORNIA

DEPARTMENT OF FISH AND WILDLIFE

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Hazem Gabr, Manager, Water Quality Section Corporate Environmental Health and Safety		
Business/Agency	Southern California Edison Company (SCE)		
Street Address	6040A Irwindale Avenue		
City, State, Zip	Irwindale, CA 91702		
Telephone	(626) 462-8715	Fax	Not Applicable (N/A)
Email	Hazem.gabr@sce.com		

2. CONTACT PERSON (*Complete only if different from applicant*)

Name	Richard Haywood		
Street Address	6040A Irwindale Avenue		
City, State, Zip	Irwindale, CA 91702		
Telephone	(626) 462-8632	Fax	N/A
Email	Richard.haywood@sce.com		

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name	SCE		
Street Address	Same as above		
City, State, Zip	Same as above		
Telephone	Same as above	Fax	Same as above
Email	Same as above		

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	Mesa 500 kilovolt (kV) Substation Project (Project)			
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years)*			
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (*year*)	Ending (*year*)	Start Date (*month/day*)	End Date (*month/day*)	
2016	2020	July 1	December 31	6 days per week

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.		
A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* N/A
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* N/A
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* N/A
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ CDFW Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number* N/A
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been received.***

	A. Project	B. Project Cost	C. Project Fee
1	Mesa 500 kV Substation Project	$600,000,000	$4,912.25
2			
3			
4			
5			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	$4,912.25

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant: N/A Notification Number: N/A Date: N/A

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☑ No ☐ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location.

(*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway*)

The Project is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The vast majority of Project activities will be located in the City of Monterey Park, and will consist of the construction of the 500/220/66/16 kV Mesa Substation and associated transmission, subtransmission, distribution, and telecommunications lines. The Mesa Substation site is located south of Potrero Grande Drive, west of Greenwood Avenue, east of East Markland Drive, and north of State Route 60. The Mesa Substation site can be accessed from Interstate 5. Exit on Telegraph Road, turn left on Telegraph Road, turn right on Garfield Avenue, turn right on Via Campo, turn left on East Markland Drive, and turn right on Potrero Grande Drive. Continue approximately 0.5 mile on Potrero Grande Drive, and Mesa Substation is on the right. Figure 1: Project Components Overview Map in Attachment B: Figures depicts the location of the Project.

☐ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Unnamed tributaries to the Los Angeles River
C. What water body is the river, stream, or lake tributary to?	Los Angeles River
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	Los Angeles

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
El Monte	N/A (Land Grant)	N/A (Land Grant)	N/A (Land Grant)	N/A (Land Grant)

☑ *Continued on additional page(s)*

K. Meridian (*check one*) ☐ Humboldt ☐ Mt. Diablo ☑ San Bernardino

L. Assessor's Parcel Number(s)

Table 1: Project Location Information in Attachment A: Supplemental Information provides the Accessor's Parcel Numbers for the Project.

☑ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)*

Latitude/Longitude	*Latitude:* See Attachment A: Supplemental Information	*Longitude:* See Attachment A: Supplemental Information	
	☐ Degrees/Minutes/Seconds	☑ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:* N/A	*Northing:* N/A	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☑ NAD 83 or WGS 84	

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	✔	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☐
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	✔	☐	☐
Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

The main activity associated with the Project involves the construction of an approximately 69.4-acre, 500/220/66/16 kV substation (Mesa Substation) in place of the existing, approximately 21.6-acre, 220/66/16 kV Mesa Substation. The Project is located primarily on approximately 86.2 acres of Southern California Edison (SCE) fee-owned property. Construction of the proposed Mesa Substation will be conducted in phases, and the power lines from the existing Mesa Substation will be relocated to the new switchracks as they are constructed. All of the existing Mesa Substation structures and equipment will be removed.

Attachment A: Supplemental Information provides a detailed discussion of the Project.

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

Table 3: Construction Equipment Description in Attachment A: Supplemental Information lists the equipment SCE expects to use during construction and includes a brief description of the equipment's use.

☑ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☑ Yes ☐ No (*Skip to box 11*)
D. Will the proposed project require work in the wetted portion of the channel?	☐ Yes (*Enclose a plan to divert water around work site*) ☑ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

Construction of the Project will directly or indirectly result in permanent and/or temporary impacts to seven California Department of Fish and Wildlife- (CDFW-) jurisdictional streams and their associated riparian vegetation. Table 4: CDFW-Jurisdictional Resources and Impacts within the Project Site in Attachment A: Supplemental Information provides additional information.

☑ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
Mulefat Scrub	Linear feet: 0.00 Total area: 0.00	Linear feet: 32,585.69 Total area: 0.75 acre
Riparian Woodland	Linear feet: 16,308.53 Total area: 0.37 acre	Linear feet: 7,066.59 Total area: 0.16 acre

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
See Table 6: Riparian Tree Species Removal in	Attachment A: Supplemental Information	

☑ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

A discussion of special-status animal or plant species, as well as habitat known to be present on or near the Project site, is provided in Attachment A: Supplemental Information.

☑ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a “yes” or “no” answer above in Box 11.C.

Attachment C: Biological Resources Technical Report for the Mesa 500 kV Substation Project.

☑ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☑ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☑ Yes (*Enclose the hydrological study*) ☐ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

In order to address the potential for erosion and sedimentation, SCE will conduct a risk assessment prior to construction and prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the Construction General Permit. The risk assessment will take into consideration the receiving waters, soil type, slopes, construction duration, and rainfall to determine the potential erosion and estimate the volume of sediment that could leave disturbed areas during the Project. From the risk assessment, Project- and site-specific best management practices will be identified in the SWPPP to ensure water quality standards are met.

☑ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

SCE has designed and incorporated applicant-proposed measures (APMs) into the Project to avoid or minimize potential impacts to fish, wildlife, and plant resources. The APMs that will be implemented during construction of the Project to protect fish, wildlife, and plant resources are provided in Attachment A: Supplemental Information.

☑ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

SCE will prepare a Revegetation Plan to implement revegetation for various Project elements. Temporary impacts to occupied coastal California gnatcatcher habitat will be restored to pre-construction conditions in accordance with the Revegetation Plan. Permanent impacts to occupied coastal California gnatcatcher habitat will be mitigated at a 1-to-1 ratio, or as required by the United States (U.S.) Fish and Wildlife Service (USFWS). The details of the mitigation plan for this species will be coordinated with the USFWS and incorporated into the Revegetation Plan.
SCE is pursuing compensatory mitigation credits for the Mountain Resource Trust In-Lieu Fee Program for impacts to jurisdictional Streambed and associated riparian habitat.

☐ *Continued on additional page(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. U.S. Army Corps of Engineers (USACE), Section 404 ☑ Applied ☐ Issued

B. Regional Water Quality Control Board, Section 401 ☑ Applied ☐ Issued

C. _____ ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☑ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

☑ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☐ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☐ Notice of Exemption	☐ Mitigated Negative Declaration	☐ NEPA document (*type*):
☐ Initial Study	☑ Environmental Impact Report	☐ CESA document (*type*):
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	☑ ESA document (*type*): Biological Opinion
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)	To be determined		
C. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes D, E, and F*)	☐ No (*Skip to box 14.G*)	
D. CEQA Lead Agency	California Public Utilities Commission		
E. Contact Person	Lisa Orsaba	F. Telephone Number	(415) 703-1966

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

N/A

☐ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☐ Yes (*Enclose proof of payment*) ☑ No (*Briefly explain below the reason a filing fee has not been paid)*

The environmental filing fee will be paid when a Notice of Determination is filed for the Project.

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☐ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☑ I request the Department to first contact (*insert name*) Richard Haywood at (*insert telephone number*) (626) 462 - 8632 to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☑ Yes (Please enclose the information via digital media with the completed notification form)

☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

Date 1/25/2016

Hazem Gabr, Manager Water Quality Section

Print Name

ATTACHMENT A: SUPPLEMENTAL INFORMATION

ATTACHMENT A: SUPPLEMENTAL INFORMATION

BOX 8: PROJECT LOCATION

Table 1: Project Location Information summarizes the Mesa 500 kilovolt (kV) Substation Project (Project) location information for the eight waters under the jurisdiction of the California Department of Fish and Wildlife (CDFW), and includes the approximate latitude and longitude, Assessor Parcel Numbers (APNs), and United States (U.S.) Geologic Survey (USGS) quadrangle map name.

BOX 10: PROJECT DESCRIPTION

SCE currently operates various 220 kV transmission lines, 66 kV subtransmission lines, 16 kV distribution lines, and telecommunications lines that connect to the existing Mesa Substation. As part of the Project, SCE will replace existing structures and lines, as necessary, to allow these existing circuits to connect to the proposed Mesa Substation configuration. In addition, the Project involves the loop-in of one existing 500 kV circuit and two existing 220 kV circuits that currently pass through the existing Mesa Substation property. The Project includes the following elements:

- Construct the 500/220/66/16 kV Mesa Substation. This substation will be constructed on the existing 220/66/16 kV Mesa Substation site. Mesa Substation will be a staffed, automated substation operating at 3,360 megavolt-ampere (MVA) at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV, with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV at ultimate build-out.

- Remove, relocate, and construct new transmission, subtransmission, and distribution structures within existing SCE transmission and substation fee-owned properties, rights-of-way (ROWs), and franchise areas to accommodate the new Mesa Substation configuration.

- Install new telecommunications lines and remove old telecommunications lines on existing subtransmission and distribution structures.

- Install temporary steel pole structures and conductor to temporarily connect the Eagle Rock-Mesa 220 kV Transmission Line to Goodrich Substation and provide a second line of service to the City of Pasadena during the line outage required to loop-in the existing Goodrich-Laguna Bell 220 kV Transmission Line to Mesa Substation.

- Minor internal modifications within the existing fenced perimeter of multiple existing substations.

- Convert three spans of existing streetlight source lines from overhead to underground below one span of the Lighthipe-Mesa 220 kV Transmission Line.

The components of the Project are described in more detail in the following subsections, and are shown in Figure 1: Project Components Overview Map in Attachment B: Figures.

Table 1: Project Location Information

Feature Number	Approximate Latitude	Approximate Longitude	APN	USGS Quadrangle Map Name
7-39-S-5	34.032086	-118.119423	5295-001-021 5295-002-801 5295-002-802	El Monte
11-94-S-5	34.035027	-118.115016	5275-001-018 5275-002-803 5275-002-810 5275-002-812 5275-002-814	
7-38-S-1 7-39-S-1 11-138-S-100	34.038079	-118.106642	5275-003-805	
	34.035527	-118.109537	5275-002-810 5275-003-805	
	34.034018	-118.112794	5275-002-810	
7-39-S-6	34.033822	-118.112699	5275-002-810	
7-39-S-2	34.034371	-118.10948	5275-002-808 5275-002-809 5275-002-810	
7-39-S-3	34.036507	-118.106503	5275-003-002 5275-003-800 5275-003-805	
11-136-S-100 11-136-S-101	34.040556	-118.109133	5265-001-809 5265-001-810 5265-001-813 5276-013-008	
	34.039782	-118.108817	5265-001-803 5265-001-810 5265-001-812	
7-39-S-11 (Rio Hondo)	34.029353	-118.070839	5271-009-902 5271-010-904	

The proposed Mesa Substation will be constructed on approximately 69.4 acres within 86.2 acres of SCE fee-owned property located in the City of Monterey Park in Los Angeles County. The existing Mesa Substation occupies approximately 21.6 acres within the same approximately 69.4-acre area where the proposed Mesa Substation will be constructed. Figure 2: Proposed Substation Layout in Attachment B: Figures shows the dimensions of the substation parcel and the placement and orientation of the major components that will be included in the construction of Mesa Substation. Construction of Mesa Substation includes the following main components:

- Construct a new 500 kV switchrack with three 500/220 kV transformer banks
- Loop-in the existing Mira Loma-Vincent 500 kV Transmission Line (which currently passes through the substation without landing on a rack position) to the new 500 kV switchrack with new overhead getaways
- Replace existing 220/66/16 kV switchracks, three 220/66 kV transformer banks, and two 66/16 kV transformer banks
- Relocate eight existing 220 kV transmission lines to the new 220 kV switchrack with new overhead getaways
- Loop-in the existing Goodrich-Laguna Bell 220 kV and Laguna Bell-Rio Hondo 220 kV transmission lines (which both currently pass through the substation without landing on a rack position) into the new 220 kV switchrack with new overhead getaways
- Relocate 16 existing 66 kV subtransmission lines to the new 66 kV switchrack with new underground getaways
- Relocate five existing 16 kV distribution lines to the new 16 kV switchrack with new underground getaways
- Construct two new Mechanical Electrical Equipment Rooms (MEERs), a Test and Maintenance Building, and an Operations Building
- Relocate various telecommunications cables
- Remove a Metropolitan Water District of Southern California 72-inch-diameter waterline that currently runs through the middle of the proposed Mesa Substation property and replace it with an 84-inch-diameter waterline to a westerly location on the substation site
- Relocate two sets of third-party cellular telephone buildings, towers, and antennas to the northeast corner of the property
- Install new 16 kV distribution Station Light and Power supplies from the existing franchise areas adjacent to Mesa Substation to replace the existing supplies

Development of the substation site includes a storm water system. A detention pond will be developed in the southwest corner of the substation site, as depicted in Figure 2: Proposed

Substation Layout in Attachment B: Figures. The detention pond will be approximately 1 acre with a capacity of approximately 455,000 gallons and will be constructed from mulch, gravel, soil, and geotextile membrane layers. Water runoff around the transformer banks will flow into a catch basin system installed around each transformer, which connects to a drainage pipe that flows into a concrete-lined detention basin that measures approximately 100 feet long, 50 feet wide, and 20 feet deep.

Primary access to the proposed Mesa Substation will be provided from Potrero Grande Drive via a new asphalt and/or concrete access driveway. Secondary access will be provided via a new access driveway off of East Markland Drive. The entrance at Potrero Grande Drive will be approximately 150 feet wide, and the entrance at East Markland Drive will be approximately 25 feet wide. Gates will be installed at both driveway entrances. SCE will construct a sidewalk along Potrero Grande Drive outside of the substation and will provide landscaping around the entire perimeter.

The proposed substation will be enclosed on all sides by a perimeter wall measuring at least 10 feet high, which will satisfy the City of Monterey Park's requirements for materials and aesthetics. Barbed wire and/or razor wire will be affixed near the top of the perimeter enclosure inside of the substation and will not be visible from the outside.

Construction

Staging Areas

Construction of the Project will require the establishment of temporary staging yards. Two types of staging yards will be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards will be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yards may have construction trailers for supervisory and clerical personnel to serve as office and meeting locations. Staging yards may be lit for security purposes. Normal maintenance and refueling of construction equipment will also be conducted at these yards. All refueling and storage of fuels will be in accordance with the Project's Storm Water Pollution Prevention Plan (SWPPP).

All proposed staging yards will be located within SCE fee-owned property. The preferred acreage for each yard will be 5 to 25 acres in size, depending on land availability and intended use. Preparation of the staging yards will include temporary perimeter fencing and—depending on existing ground conditions at the site—clearing, grubbing, and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock in some locations. Land disturbed at the staging yards will either be returned to pre-construction conditions or left in its modified condition.

Work Areas

Transmission and subtransmission construction work areas serve as working areas for crews and where Project-related equipment and/or materials are placed at or near each structure location, within SCE property, existing public ROWs, or franchise areas.

The new structure pad locations and laydown/work areas will first be cleared of vegetation and/or graded as required to provide a reasonably vegetation-free and level surface for structure installation. Sites requiring grading will be graded such that water will run toward the direction of the natural drainage. In addition, the drainage will be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area will be compacted to at least 90-percent relative density, and will be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a temporary crane pad. Crane pads will occupy an area of approximately 50 feet by 50 feet and will be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pads may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad will be determined during final engineering for the Project and the selection of the appropriate construction methods to be used by SCE or its Contractor.

Access Roads and/or Spur Roads

Where required, a network of existing access roads could be improved and new roads will be constructed to current SCE road specifications to support the construction and Operation and Maintenance (O&M) of the Project.

Typical transmission access consists of a network of unpaved and paved roads accessed from public and private roads. These access roads include a network of through roads and spur roads that are used to access transmission facilities. Access to the transmission line ROW for construction activities and future O&M activities associated with the Project will be accomplished by utilizing this network of roads.

During construction of the Project, crews will utilize existing public roads and existing transmission access roads to the maximum extent feasible. New access roads will be constructed in accordance with current SCE practices for safety during construction and O&M. Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities. Typical construction activities associated with rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities to provide a riding surface that is capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Typical construction activities associated with new roads generally include similar activities as those described for the rehabilitation of existing unpaved roads, but may also include the following additional construction requirements that depend on the existing land terrain:

- **Existing relatively flat terrain with grades up to 4 percent:** Construction activities are generally similar to rehabilitation activities on existing unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, water bars, and culverts). Detailed information on locations requiring drainage improvements will be provided during final engineering.

- **Existing rolling terrain with grades of 5 to 12 percent:** Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements (e.g., geogrid reinforcement). The extent of retaining walls and slope stability improvements will be determined during final engineering, as will detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.

- **Existing mountainous terrain with grades over 12 percent:** Construction activities will include rolling terrain construction activities and will also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements will be provided during final engineering.

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements and earth-retaining structures will be determined during final engineering.

Generally, access roads will have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width will be widened and will generally range up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients will be leveled so that sustained grades generally do not exceed 14 percent. Curves will typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where a minimum radius of 50 feet cannot be achieved.

Access roads will typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration will be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as a construction pad for construction activities. If a construction pad is built, it will remain a permanent feature for O&M.

The Project access roads generally follow the proposed transmission line route. Transmission line roads are classified into two groups—access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites due to terrain considerations and topographic constraints.

Approximately 5.6 miles of existing dirt access roads on SCE property and existing ROWs will be used to access the Project work areas. If improvements are required, they will be conducted in accordance with existing O&M practices.

Transmission Line Construction

Trenching

Construction activities will begin with the survey of existing underground utilities along the proposed underground subtransmission source line route.

The Project includes a total of approximately 5.5 miles of new underground 66 kV subtransmission lines and associated transition and support structures. A trench measuring approximately 2 feet wide and 2.5 feet deep will be required to place the 66 kV subtransmission line underground. Trenching may 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 appropriate depth with a backhoe or similar equipment, and
- install the new duct bank.

Once the duct bank has been installed, the trench will typically be backfilled with a sand slurry mix. Excavated materials will be reused as fill for the Project and/or be disposed of at an off-site disposal facility in accordance with applicable laws if necessary. Should groundwater be encountered, it will be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

The trench for underground construction will be widened and/or shored where appropriate to meet California's Division of Occupational Safety and Health requirements. Trenching will be staged so that open trench lengths will not exceed that which is required to install the duct banks. Where needed, open trench sections will have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access will be arranged with local agencies in advance of construction activities.

Subtransmission Vault Installation

Installation of each vault will typically take place over a one-week period depending on soil conditions. First, the vault pit will be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base will 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 will be added and set to match the existing grade. The excavated area will be backfilled with a sand slurry mix to a point just below the top of the vault roof. Excavated materials, if suitable, will be used to backfill the remainder of the excavation and any excess spoils will be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area will be restored as required.

Fiber Optic Installation

New underground conduit and structures will typically be installed with a backhoe. The trench will be excavated to approximately 24 inches wide and a minimum of 36 inches deep. Polyvinyl chloride conduit will be placed in the trench and covered with approximately 30 inches of concrete slurry then backfilled and compacted. For manholes and pull boxes, a hole will be

excavated between 6 and 9 feet deep, 7 and 8 feet long, and 6 and 7 feet wide. The manhole or pull box will be lowered into place and connected to the conduits, and the hole will be backfilled with concrete slurry.

Metropolitan Water District Water line Relocation

Initial construction activities associated with the Project include the relocation of an approximately 2,700 feet portion of the existing 72-inch Metropolitan Water District (MWD) water line. The MWD waterline traverses the Mesa Substation site in a north-south direction and crosses Potrero Grande Drive. The line will be replaced with an approximately 3,800 foot long 84-inch waterline and relocated to the west of its existing configuration. The existing waterline must be relocated to accommodate construction of the proposed Mesa Substation. Both the existing and proposed water lines have, and will continue to have, approximately 10 feet of cover.

Standard trenching methods will be used to install the proposed waterline on the north side of Potrero Grande Drive from the interception with the existing waterline to the edge of the paved road, approximately 1,400 feet. South of Potrero Grande Drive, on the Mesa Substation property, trenching will be used from the south side of the road, to where the new pipe intercepts the existing pipe, approximately 1,600 feet.

SCE will use the horizontal jack-and-bore construction technique to install the water line underneath Potrero Grande Drive, approximately 500 feet.

Jack-and-bore is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations will begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits will typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits will be between 10 and 20 feet. It is anticipated that between 590 and 1,180 cubic yards (CY) of material will be excavated to facilitate each jack-and-bore installation required for the Project. Following the duct bank installation, the bore pits will be backfilled using native material, and the duct bank will be covered with at least 36 inches of engineered or native fill, as appropriate. Soil not used for backfill will be hauled off site and disposed of at an approved facility.

Horizontal directional drilling

SCE will use horizontal directional drilling (HDD) to install several of the new subtransmission duct banks from the interior of the substation to the north side of Potrero Grande Drive, in order to resolve the change in grade between those areas and to help avoid impacts to other existing underground utilities typically found in the street. HDD technology is an underground boring technique that uses hydraulically powered, horizontal drilling equipment. It involves drilling along a vertical arc that passes beneath the intended feature. HDD technology utilizes lubrication containing water and bentonite clay (referred to as drilling mud) to aid the drilling, coat the walls of the bore hole, and maintain the open hole. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill. A 6- to 8-inch-diameter drill would typically be used.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores under the crossing. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the steel casing. Once the steel casing is in place, ducts would be installed within the steel casing using spacers to maintain the needed separation, and then the remaining space would be backfilled with a slurry mix.

During the HDD process, the underground cable to be pulled through the crossing would be strung on cable supports down the ROW or within temporary extra workspace areas.

As part of the drilling design process, geotechnical surveys of subsurface conditions would be conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a “frac-out” and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the boring operation would be stopped immediately, and a frac-out contingency plan would be implemented to contain and remove the drilling mud.

Mesa Substation Construction

Prior to construction, the Mesa Substation site will be cleared and graded to prepare the site for construction. Approximately 83.3 acres of the site will be graded. Approximately 20 acres of on-site vegetation will be removed during the clearing, grubbing, and grading for the construction of the proposed Mesa Substation, including trees along the frontage and within the fence line of the existing Mesa Substation site. Mowers, excavators, front-end loaders, and/or D-9 bulldozers will be utilized to conduct the clearing and vegetation removal activities.

Construction of the proposed Mesa Substation will occur in phases, as shown in Figure 3: Grading Phase Areas in Attachment B: Figures. Phase 1 involves preliminary activities, such as relocation of the Metropolitan Water District of Southern California water pipeline, vegetation removal, removal of some equipment stored on site, and installation of temporary fencing. This phase includes all construction associated with the following:

- the first eight 220 kV switchrack positions,
- the entire 66 kV and 16 kV switchracks,
- two 220/66 kV transformer banks,
- two 66/16 kV transformer banks,
- two 66 kV capacitor banks,
- two 16 kV capacitor banks, and
- the necessary underground and overhead facilities to connect the relocated circuits (of all three voltage levels).

This phase also includes, but is not limited to, activities such as mass grading; access road construction, including retaining walls; construction of the senior and junior MEERs; assembly and erection of various transmission and subtransmission overhead structures; and possibly the construction of the Operations Building and the Test and Maintenance Building. This phase involves the import of approximately 100,000 CY of fill to develop the western portion of the proposed Mesa Substation site. Phase 1 will generally occur between the second quarter of 2016 and the fourth quarter of 2018.

Phase 2 involves the extension of the new 220 kV switchrack, one 220/66 kV transformer bank, one 66 kV capacitor bank, and the necessary underground and overhead facilities to connect the relocated circuits (of both voltage levels). This will include, but is not limited to, activities such as decommissioning and removal of the western portion of the existing 220 kV switchrack; grading and civil improvements, including the detention basin and other drainage improvements; construction of the southern portion of the new 220 kV switchrack; and assembly and erection of various transmission and subtransmission overhead structures. This phase will generally occur between the second quarter of 2018 and the first quarter of 2019.

Phase 3 includes decommissioning and demolition of the balance of the existing substation, construction of the new 500 kV switchrack on the eastern portion of the site, and connecting the transmission lines. This phase will include, but is not limited to, activities such as structural and civil demolition and access road construction, including retaining walls; installation of foundations and piping for three 500/220 kV transformer banks, including Spill Prevention Control and Countermeasure Plan facilities; and assembly and erection of various transmission overhead switchracks and transmission towers. This phase will generally take place between the first quarter of 2019 and the fourth quarter of 2020. However, post-construction testing after the substation is operational will occur through the second quarter of 2021.

Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. A summary of the anticipated grading quantities for Mesa Substation is provided in Table 2: Grading Quantities Summary. Phase 1 construction of the proposed Mesa Substation will require approximately 100,000 CY—or approximately 10,000 haul truckloads—of imported fill to develop the substation site. Phase 3 will require approximately 50,000 CY—or approximately 5,000 haul truckloads—of import material to be hauled to the substation site. Haul trucks will operate periodically and as needed during the grading phase of construction. In general, no more than 100 haul truck trips per day will be required for the import/export activities.

Vegetation Clearance

The proposed Mesa Substation site will require vegetation clearing (i.e., tree and brush removal) within its boundaries to prepare the approximately 69.4-acre site for installation of the substation equipment.

Vegetation clearing (i.e., tree and brush removal and tree trimming) may also be required in the proposed transmission ROWs to accommodate construction work areas, and to reduce the potential for fire during construction activities.

Table 2: Grading Quantities Summary

Phase	Fill Quantity (CY)	Cut Quantity (CY)	Import/Export Quantity (CY)	Source/ Destination
1	250,000	150,000	100,000	Quarry within 45 miles of the site
2	5,000	70,000	(65,000)	Stockpile for Phase 3
3	325,000	375,000	(50,000)	Landfill within 45 miles of the site
Total	**580,000**	**595,000**	**--**	**--**

Notes: Export values in Phase 2 are included in the cut values in Phase 3. The Phase 3 raw cut volume is 310,000 CY.
"--" indicates "not applicable."

Cleanup and Post-Construction Restoration

SCE will clean up all areas that will be temporarily disturbed by construction of the Project (which may include the material staging yards, stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of Project construction.

If restoration and/or revegetation occurs within sensitive habitats, a Revegetation Plan will be developed by SCE with the appropriate resource agencies and will be implemented after construction is complete.

Construction Workforce

Construction will be performed by either SCE construction crews, contractors, or a combination of both. If SCE construction crews are used, they typically will be based at SCE's local facilities (e.g., service centers and substations) or a temporary material staging yard set up for the Project. Contractor construction personnel will be managed by SCE construction management personnel and based out of the Contractor's existing yard (if they have one in the area) or a temporary material staging yard set up for the Project. SCE anticipates a total of 84 to 242 construction personnel will be working on any given day. SCE anticipates that crews will work concurrently whenever possible; however, the estimated deployment and number of crew members will vary depending on factors such as material availability, resource availability, and construction scheduling.

In general, construction efforts will occur in accordance with accepted construction industry standards. If feasible, SCE will comply with local ordinances for construction activities.

Construction Schedule

SCE anticipates that construction of the Project will take approximately 57 months. Construction of the Project is anticipated to begin in July 2016, and will end in December 2020 with energization of the substation. Construction will commence following California Public Utilities

Commission (CPUC) approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

BOX 10B: PROJECT DESCRIPTION – EQUIPMENT

Table 3: Construction Equipment Description lists the equipment SCE expects to use during construction and includes a brief description of the use of that equipment.

BOX 11A: PROJECT IMPACTS – CDFW JURISDICTION

A total of eight potential CDFW-jurisdictional water features—including one intermittent stream (i.e., the Rio Hondo), seven ephemeral streams, and their associated riparian vegetation—occur within the Project area. Of the eight potential CDFW-jurisdictional water features, seven ephemeral streams and their associated riparian vegetation will be impacted by the Project. Information for each of the water features located on the Project site is provided in Table 4: CDFW-Jurisdictional Resources and Impacts within the Project Site and includes the area of each CDFW-jurisdictional feature, the acreage and length of permanent and temporary impacts, and the Project activities resulting in impacts to these features.

A total of approximately 2.17 acres of CDFW-jurisdictional resources will be permanently impacted, and approximately 0.46 acre of CDFW-jurisdictional resources will be temporarily impacted by construction of the Project. Figure 4: Impacts to CDFW-Jurisdictional Waters in Attachment B: Figures depicts the location of the Project components in relation to each of the CDFW-jurisdictional features and identifies which of the features are anticipated to be impacted. Attachment E: Photographs of Impacted Water Features provides photographs of the CDFW-jurisdictional features located on site that will be impacted by construction of the Project.

BOX 11B: PROJECT IMPACTS – VEGETATION

As shown in Figure 1: Project Components Overview Map in Attachment B: Figures, natural areas are concentrated within four sections of the Project—the Mesa Substation site and adjacent ROWs; the Montebello Hills; the Rio Hondo corridor; and the San Gabriel River corridor. Construction of the Project will result in permanent and temporary impacts to riparian vegetation associated with the streams on site, primarily through vegetation removal and disturbance from construction activities. Figure 5: Impacts to Riparian Vegetation depicts the Project's permanent and temporary impacts to riparian vegetation. Construction of Mesa Substation will result in the permanent removal of on-site riparian vegetation, as shown in Figure 5: Impacts to Riparian Vegetation. Construction of the Project will also result in temporary impacts to ephemeral drainages and their associated riparian vegetation. Potential temporary impacts include vegetation clearing and vehicle use in work areas, pull sites, staging areas, and contractor storage

Table 3: Construction Equipment Description

Equipment Type	Use Description
Bucket Truck	Lift and transport workers
Survey Truck	Transport survey crew
Dozer	Grade pads and access roads
Loader	Move or load materials
Scraper	Grade pads and access roads
Grader	Grade substation site, pads, and access roads; ROW clearing; and restoration
Water Truck	Suppress dust and condition soil for compaction
Haul Truck	Transport impact/export material
Bobcat	Excavate, move, and load materials
Foundation Auger	Drilling foundation holes
Backhoe	Excavate and load materials
Dump Truck	Transport import/export material
Bobcat Skid Steer	Move materials
Forklift	Lift and move materials
Crane	Lift and place materials
Generator	Provide power to the work area
Scissor Lift	Provide access to elevated work areas
Manlift	Set steel and install equipment
Flatbed Truck	Deliver poles and hardware
Concrete Pump Truck	Deliver and pour concrete
Asphalt Paver	Pave access roads
Tractor	Hauling materials
Helicopter	Conductor installation activities

Table 4: CDFW-Jurisdictional Resources and Impacts within the Project Site

Feature Number	Water Feature Description	Approximate CDFW Jurisdiction		Approximate Area of Impacts				Impact Description
		acres	linear feet	Permanent		Temporary		
				acres	linear feet	acres	linear feet	
7-39-S-5	This feature is an ephemeral stream surrounded by disturbed riparian woodland. Water enters this feature through a large box culvert under Via Campo Road. This feature continues to flow southwest and across an existing access road via sheet flow. To the west of the access road, the drainage is ephemeral. The stream exits the Project area to the west under a fence. A retaining wall was constructed on the east bank of this stream just east of the existing access road.	0.24	715.81	--	--	0.24	715.81	This feature will be temporarily impacted by construction of Mesa Substation.
11-94-S-5	This stream is depicted as intermittent on the 1924 USGS topographic maps. Historically, the stream connected to the Los Angeles River. The 1981 USGS topographic map for El Monte also depicts this stream. The stream is now considered ephemeral and is dirt-lined and surrounded by ornamental/non-native vegetation, and it is fed by runoff from Mesa Substation via a man-made ditch. It also receives runoff from Potrero Grande Drive, surrounding lands, and direct precipitation. It flows northeast to southwest, through a series of culverts under SCE access roads, and into a culvert under East Markland Drive. It then continues to the west of East Markland Drive where it meets a raised landform and dissipates.	0.65	1,987.41	0.65	1,987.41	--	--	This feature will be permanently impacted by construction of Mesa Substation.
7-38-S-1 7-39-S-1 11-138-S-100	This stream is a concrete-lined, constructed drain fed by runoff from the adjacent nursery and parking lot, and by direct precipitation. It flows southwest and empties into a culvert under Greenwood Avenue, discharging directly into Feature 7-39-S-1.	0.13	363.85	0.13	363.85	--	--	This feature will be permanently impacted by construction of Mesa Substation.
	This ephemeral stream is a continuation of Feature 7-38-S-1, and is depicted as intermittent on historical USGS topographic maps as far back as 1924. In the 1981 USGS topographic map for El Monte, this stream is no longer mapped. It receives runoff from surrounding lands; direct precipitation; and, farther downstream, a man-made ditch and streams (i.e., Features 7-39-S-2 and 7-39-S-3). At the southwest corner of the Mesa Substation footprint, this stream continues as Feature 11-138-S-100. The stream is dirt-bottomed, but highly manipulated in places. Mulefat (*Baccharis salicifolia* ssp. *salicifolia*) is growing intermittently along this stream.	0.81	2,179.78	0.81	2,179.78	--	--	This feature will be permanently impacted by construction of Mesa Substation.
	This feature is a manipulated ephemeral stream. Feature 7-39-S-1 drains into this feature via two approximately 4-foot-diameter corrugated metal pipe (CMP) culverts. Two approximately 5-foot-diameter CMP culverts convey water downstream from this feature under an existing access road. This feature extends off site along the southern boundary of the Project area.	0.17	458.41	0.17	458.41	--	--	This feature will be permanently impacted by construction of Mesa Substation.

Feature Number	Water Feature Description	Approximate CDFW Jurisdiction		Approximate Area of Impacts				Impact Description
		acres	linear feet	Permanent		Temporary		
				acres	linear feet	acres	linear feet	
7-39-S-6	This feature is an ephemeral stream. An approximately 3-foot-diameter CMP culvert is located at the east end of the stream; however, the culvert does not appear to connect this feature to another water feature. This is likely due to ground disturbance in the area surrounding the feature. The feature extends to the west and connects to Feature 11-138-S-100. The average top-of-bank width for this feature is approximately 6 feet.	0.04	441.81	0.04	441.81	--	--	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-2	Flows from this ephemeral stream enter the Project area from the south, then travel via sheet flow to the northwest across an SCE access road. The stream then becomes channelized and flows through a culvert to the west, where it connects to Feature 7-39-S-1. This stream is fed by runoff from the landfill south of State Route 60, from direct precipitation, and from surrounding lands. The southern portion of Feature 7-39-S-2 is concrete- and riprap-lined in places, and dirt-lined in its eastern reach. The stream supports riparian canopy mostly comprised of non-native trees and shrubs.	0.19	423.04	0.19	423.04	--	--	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-3	Flows from this ephemeral stream enter the Project area via a culvert from a landfill to the southeast, and empty into Feature 7-39-S-1. A portion of the stream immediately downstream from this culvert is lined with riprap and concrete. The remainder of the stream is dirt-lined. This stream is fed by runoff from the landfill across Greenwood Avenue, from surrounding lands, and from direct precipitation. Mulefat is scattered along the dirt-lined portion of this stream.	0.18	440.19	0.18	440.19	--	--	This feature will be permanently impacted by construction of Mesa Substation.
11-136-S-100 11-136-S-101	The upstream portion of this stream appears to be an eroded ephemeral gully. Water from the gully passes under an existing access road through an approximately 2-foot-diameter CMP. The southern portion of this stream is a concrete ephemeral stream. An approximately 3-foot-diameter concrete culvert carries water out of the Project area under Saturn Street.	0.10	376.54	--	--	0.10	376.54	This feature will be temporarily impacted by construction of Mesa Substation.
	This stream is a continuation of Feature 11-136-S-100, north of Saturn Street. This stream is dirt-lined and is associated with a dense riparian canopy of black elderberry (*Sambucus nigra* ssp. *caerulea*), mulefat, Mexican fan palm (*Washingtonia robusta*), and Brazilian pepper tree (*Schinus terebinthifolius*). It exits the site to the south via a culvert at Potrero Grande Drive. Although the culvert outlet could not be located, the stream most likely empties into a storm drain that appears to flow into the Rio Hondo and eventually into the Los Angeles River.	0.12	260.17	--	--	0.12	260.17	This feature will be temporarily impacted by construction of Mesa Substation.

Feature Number	Water Feature Description	Approximate CDFW Jurisdiction		Approximate Area of Impacts				Impact Description
		acres	linear feet	Permanent		Temporary		
				acres	linear feet	acres	linear feet	
7-39-S-11 (Rio Hondo)	Rio Hondo is an intermittent stream that traverses the Project area under North San Gabriel Road. This feature drains into the Los Angeles River approximately 9 miles to the southwest of North San Gabriel Road. The Rio Hondo is generally dry in the summer months, flowing after the start of winter rains. The bed of the stream is sandy and sparsely vegetated with polygonum (*Polygonum* sp.). The banks are vegetated with giant reed (*Arundo donax*), Goodding's black willow (*Salix gooddingii*), mulefat, castor bean (*Ricinus communis*), dwarf nettle (*Urtica urens*), and California buckwheat (*Eriogonum fasciculatum*), among other species.	1.03	200.00	--	--	--	--	This feature will be avoided.
TOTAL	--	**3.66**	**7,847.01**	**2.17**	**6,294.49**	**0.46**	**1,352.52**	--

yards, as well as establishing and/or improving temporary access roads. The permanent and temporary impacts to riparian vegetation are summarized in Table 5: Impacts to Riparian Vegetation. Table 6: Riparian Tree Species Removal summarizes vegetation removal by tree species.

Mulefat scrub is a riparian scrub community dominated by mulefat, which occurs in the southern portion of the Mesa Substation site along two ephemeral channels, as well as along the Rio Hondo and San Gabriel River corridors. Mulefat scrub is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986). Disturbed riparian woodland was documented along ephemeral streams on the Mesa Substation site and along the banks of the Rio Hondo. Vegetation in this plant community within the Mesa Substation site consists of a preponderance of non-native species trees, including Brazilian pepper tree, date palm (*Phoenix dactylifera*), and Mexican fan palm, with a few native riparian species, including Goodding's black willow and mulefat. Along the Rio Hondo, dominant species include Goodding's black willow, coast live oak (*Quercus agrifolia*), and California box elder (*Acer negundo*). No impacts to the riparian vegetation on the Rio Hondo will occur as a result of the Project. Riparian woodland is described as southern coast live oak riparian forest in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986); however, due to the high level of disturbance, the riparian woodland found within the Project area does not meet the typical vegetation description.

Table 5: Impacts to Riparian Vegetation

Natural Vegetation Community	Approximate Area		Approximate Permanent Impacts		Approximate Temporary Impacts	
	acres	square feet	acres	square feet	acres	square feet
Mulefat Scrub	0.75	32,585.69	0.75	32,585.69	--	--
Riparian Woodland	0.54	23,375.12	0.16	7,066.59	0.37	16,308.53
Total	**1.29**	**55,960.81**	**0.91**	**39,652.38**	**0.37**	**16,308.53**

Table 6: Riparian Tree Species Removal

Tree Species	Number of Trees (4 to 20 inches DBH[1])	Number of Trees (>20 inches DBH)
Gum Tree* (*Eucalyptus* sp.)	7	21
Brazilian Pepper Tree* (*Schinus terebinthifolius*)	82	37
Peruvian Pepper* (*Schinus molle*)	10	6
Ornamental Elm* (*Ulmus* sp.)	4	5
African Sumac* (*Rhus lancea*)	13	0
Cork Oak* (*Quercus suber*)	7	5
Olive Tree* (*Olea* sp.)	5	1
Ornamental African Palm* Unknown	24	2
Mexican Fan Palm* (*Washingtonia robusta*)	8	40
Tree Tobacco (*Nicotiana glauca*)	12	0
Black Elderberry (*Sambucus nigra* ssp. *caerulea*)	6	0
Mule fat (*Baccharis salicifolia* ssp. *salicifolia*)	68	0
Fig Tree* (*Ficus* sp.)	4	1
California Black Walnut (*Juglans californica*)	5	0
Tree of Heaven* (*Ailanthus altissima*)	15	0
Scrub oak (*Quercus berberidifolia*)	7	0
Silky oak* (*Grevillea robusta*)	0	2

[1] Diameter at breast height

Tree Species	Number of Trees (4 to 20 inches DBH[1])	Number of Trees (>20 inches DBH)
Fern pine* (*Podocarpus* sp.)	0	1
Arroyo willow (*Salix lasiolepis*)	1	0
Sand bar willow (*Salix exigua*)	3	0
Palo verde (*Parkinsonia* sp.)	1	0
Unknown exotics	3	3
TOTAL	**285**	**124**

*Non-native species

BOX 11C: PROJECT IMPACTS – SPECIAL-STATUS ANIMAL OR PLANT SPECIES, OR HABITAT

Table 7: Special-Status Plant Species summarizes the special-status plant species that have the potential to occur in the region of the Project. SCE determined that two special-status plant species—California black walnut (*Juglans californica*) (California Rare Plant Rank [CRPR] 4.2) and Nevin's barberry (*Berberis nevinii*) (Federally Endangered [FE], State-listed Endangered [CE], CRPR 1B.1)—are present within the Project area or in the immediate vicinity. Three special-status plant species have a moderate potential to occur in the construction areas—southern tarplant (*Centromadia parryi* ssp. *australis*) (CRPR 1B.1), Plummer's mariposa-lily (*Calochortus plummerae*) (CRPR 4.2) and intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*) (CRPR 1B.2).

Special-status wildlife species with the potential to occur in the Project area are listed in Table 8: Special-Status Wildlife Species. A total of 21 special-status wildlife species were identified on the target survey list as either present or having the potential to occur within the Project area. The following determinations were made for each of these 21 special-status wildlife species:

- Seven species—Belding's orange-throated whiptail (SSC), American peregrine falcon (*Falco peregrinus anatum*) (Fully Protected [FP]), coastal California gnatcatcher (*Polioptila californica californica*) (Federally Threatened [FT], SSC), least Bell's vireo (*Vireo bellii pusillus*) (FE, CE), loggerhead shrike (*Lanius ludovicianus*) (SSC), Swainson's hawk (*Buteo swainsoni*) (State-listed Threatened [CT]), and yellow warbler (*Setophaga petechial*) (SSC)—are present.

- Four species—western spadefoot (*Spea hammondii*) (SSC), western pond turtle (*Emys marmorata*; SSC), western burrowing owl (*Athene cunicularia*) (SSC), and southern grasshopper mouse (*Onychomys torridus ramona*) (SSC)—were determined to have a moderate potential to occur.

- Seven species—Blainville's horned lizard (*Phrynosoma blainvillii*) (SSC), southwestern willow flycatcher (*Empidonax traillii extimus*) (FE, CE), American badger (*Taxidea taxus*) (SSC), pallid bat (*Antrozous pallidus*) (SSC), San Diego black-tailed jackrabbit (SSC), western mastiff bat (*Eumops perotis californicus*) (SSC), and western yellow bat (*Lasiurus xanthinus*) (SSC)—were determined to have a low potential to occur.

- Three species—southern mountain yellow-legged frog (*Rana muscosa*) (FE, CE), bank swallow (*Riparia riparia*) (CT), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (Candidate for Federal Listing [FC], CE)—were determined to have no potential to occur.

Two sensitive vegetation communities occur within the Project area: southern sycamore-alder riparian woodland and California walnut woodland. USFWS-designated critical habitat for coastal California gnatcatcher is also located within the Project area.

Table 7: Special-Status Plant Species

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Asteraceae (Compositae) – Sunflower Family					
Southern tarplant (*Centromadia parryi* ssp. *australis*)	1B.1	Southern tarplant is an annual herb that occurs in the margins of marshes and swamps, vernally mesic valley and foothill grasslands, and vernal pool habitats. It is typically found at elevations from sea level to 650 feet.	June through October	Two California Natural Diversity Database (CNDDB) occurrences of this species are documented within 5 miles of the Mesa Substation site[3], both of which are presumed extant. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this occurrence is possibly extirpated.	Suitable habitat for this species occurs along the banks of the Rio Hondo. As a CNDDB occurrence for this species is located upstream of the Project area within the Rio Hondo corridor, this species has a moderate potential to occur. **Moderate Potential**
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	1A	Los Angeles sunflower is a perennial rhizomatous herb that occurs in coastal salt and freshwater marsh and swamp habitats. It is typically found at elevations from 30 to 5,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1903 and is possibly extirpated.	No suitable habitat for this species occurs in the Project area. **No Potential**
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	1B.1	Coulter's goldfields is an annual herb that occurs in coastal salt marshes and swamps, playas, and vernal pools. It is typically found from sea level to 4,000 feet in elevation.	April through May	One CNDDB occurrence is documented within 5 miles of the Project area; however, this occurrence was recorded in 1939 and is possibly extirpated. One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1882 and is possibly extirpated.	No suitable habitat for this species occurs in the Project area. **No Potential**
White rabbit-tobacco (*Pseudognaphalium leucocephalum*)	2B.2	White rabbit-tobacco is a perennial herb that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. It typically occurs at elevations from sea level to 7,000 feet.	July through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. While both records are presumed extant, these occurrences were recorded before 1930.	Suitable habitat for this species occurs in the Project area in the Montebello Hills area, south of Mesa Substation, and in the Rio Hondo and San Gabriel River corridors. However, no documented occurrences are within 5 miles of this portion of the Project area. **Low Potential**

[2] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally listed as Endangered
-FT: Federally listed as Threatened

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-CR: State-listed as Rare

California Native Plant Society (CNPS) CRPRs:

-1A: Presumed extirpated because they have not been seen or collected in the wild in California for many years
-1B.1: Rare, threatened, or endangered in California or elsewhere; seriously threatened in California
-1B.2: Rare, threatened, or endangered in California or elsewhere; fairly threatened in California
-1B.3: Rare, threatened, or endangered in California or elsewhere; not very threatened in California
-2.1: Rare, threatened, or endangered in California only; seriously threatened in California
-2.2: Rare, threatened, or endangered in California only; fairly threatened in California
-3: More information is needed regarding this species; taxonomically uncertain
-4.1: Limited in distribution or infrequent throughout California; seriously threatened in California
-4.2: Limited in distribution or infrequent in California; fairly threatened in California
-4.3: Limited in distribution or infrequent in California; not very threatened in California

[3] The Mesa Substation site includes the existing Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications work.

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
San Bernardino aster (*Symphyotrichum defoliatum*)	1B.2	San Bernardino aster occurs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, marshes, swamps, and valley and foothill grassland. It is typically found at elevations below 6,700 feet.	July through November	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1930 and is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. The only CNDDB occurrence of this species was recorded in 1930 and is presumed extirpated. **Low Potential**
Greata's aster (*Symphyotrichum greatae*)	1B.3	Greata's aster is a perennial rhizomatous herb that occurs in mesic areas in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. It is typically found at elevations from 1,000 to 6,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded before 1920 and one is possibly extirpated.	Suitable habitat for this species occurs in the Rio Hondo and San Gabriel River corridors. However, the Project is outside of this species' elevation range. **Low Potential**
Berberidaceae – Barberry Family					
Nevin's barberry (*Berberis nevinii*)	FE CE 1B.1	Nevin's barberry is a perennial evergreen shrub that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian habitats. It is typically found at elevations from 900 to 2,700 feet.	March through June	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Three CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All three records are presumed extant.	This species was observed in the San Gabriel River corridor during field surveys conducted by Insignia Environmental (Insignia) biologists in December 2014. **Present**
Boraginaceae – Borage Family					
Brand's star phacelia (*Phacelia stellaris*)	1B.1	Brand's star phacelia is an annual herb that occurs in coastal dunes and coastal scrub habitats. It is typically found at elevations from sea level to 1,300 feet.	March through May	Two CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site; however, these occurrences were documented before 1936 and are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs within the Project area south of Mesa Substation and in the Montebello Hills area. The closest record for this species was last seen near the Project area in 1936. **Low Potential**
Brassicaceae (Cruciferae) – Mustard Family					
Poor-man's peppergrass (*Lepidium virginicum* ssp. *menziesii*), (previously Robinson's pepper-grass [*Lepidium virginicum* ssp. *robinsonii*])	4.3	Robinson's pepper-grass is an annual herb that occurs in chaparral and coastal scrub habitat. It is typically found at elevations from sea level to 2,900 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, there are no recorded occurrences in this area. **Low Potential**
Convolvulaceae – Morning-Glory Family					
Lucky morning-glory (*Calystegia felix*)	3.1	This species is historically associated with wetlands and marshy habitats, but also can occur in drier locales. Potential habitats include sometimes alkaline meadows and seeps, and alluvial riparian scrub.	March through September	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Project area in the Rio Hondo and San Gabriel River corridors. **Low Potential**

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Santa Barbara morning glory (*Calystegia sepium* ssp. *binghamiae*)	1B.1	Santa Barbara morning glory is a perennial rhizomatous herb that occurs in wetland and marshy areas, possibly in silty loam and alkaline substrates. It is typically found at elevations from sea level to 65 feet.	April through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs within the Project area. **No Potential**
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	2B.2	Peruvian dodder is an annual parasitic vine that occurs in marsh and swamp habitats. It is typically found at elevations below 1,600 feet.	July through October	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. This CNDDB occurrence is also located is within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. **No Potential**
Cyperaceae – Sedge Family					
California saw-grass (*Cladium californicum*)	2B.2	California saw-grass is a perennial rhizomatous herb that occurs in meadows and seeps, as well as in alkaline or freshwater marshes and swamps. It is typically found at elevations from 200 to 2,800 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence is extirpated.	No suitable habitat for this species occurs in the Project area. **No Potential**
Fabaceae (Leguminosae) – Legume Family					
Braunton's milk-vetch (*Astragalus brauntonii*)	FE 1B.1	Braunton's milk-vetch is a perennial herb that occurs in sandstone or carbonite layers in chaparral, coastal scrub, and valley and foothill grassland habitats. It usually occurs in areas that have been recently burned or disturbed. It is typically found at elevations from near sea level to 2,100 feet.	March through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Project area south of Mesa Substation and in the Montebello Hills area. However, no occurrences have been documented within 5 miles of the site. Two extant occurrences are near the Goodrich Substation site; however, there is no suitable habitat in this location. **Low Potential**
Geraniaceae – Geranium Family					
Round-leaved filaree (*California macrophylla*)	1B.1	Round-leaved filaree is an annual herb that occurs in clay substrates in cismontane woodland and valley and foothill grassland habitat. It is typically found at elevations from 50 to 3,900 feet.	March-May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this record is possibly extirpated.	Marginally suitable habitat for this species occurs within the Project area south of the Mesa Substation site. **Low Potential**
Grossulariaceae – Gooseberry Family					
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	1A	Parish's gooseberry is a perennial deciduous shrub that occurs in riparian woodland habitat. It is typically found at elevations from 200 to 1,000 feet.	February through April	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, both of which are presumed extant. There is one occurrence within 5 miles of the Project area and the Goodrich Substation; however this occurrence was recorded in 1882 and is possibly extirpated.	Suitable habitat for this species occurs in the Project area along the Rio Hondo and San Gabriel River corridors. However, this species is thought to be extirpated from California and was last seen near the Project area in 1980. **Low Potential**

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Juglandaceae – Walnut Family					
California black walnut (*Juglans californica*)	4.2	California black walnut is a perennial deciduous tree that occurs in alluvial chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from 150 to 3,000 feet.	March through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	This species was observed on the Mesa Substation site during botanical surveys conducted for the Tehachapi Renewable Transmission Project (TRTP) in 2009 and 2010. In addition, Insignia biologists observed this species during December 2014 field surveys along Lincoln Avenue in the Montebello Hills area, and along Durfee Avenue in the San Gabriel River corridor. **Present**
Lamiaceae (Labiatae) – Mint Family					
Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	1B.2	Southern mountains skullcap is a perennial rhizomatous herb that occurs in mesic areas in chaparral, cismontane woodland, and lower montane coniferous forests. It is typically found at elevations from 2,000 to 6,600 feet.	June through July	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is possibly extirpated. This occurrence is also located within 1 mile of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. The Project area is located outside of this species' elevation range. **Low Potential**
Liliaceae – Lily Family					
Plummer's mariposa-lily (*Calochortus plummerae*)	4.2	Plummer's mariposa-lily is a perennial bulbiferous herb that occurs in granitic or rocky substrate in chaparral, cismontane woodland, coastal scrub, lower montane forest, and valley and foothill grassland habitats. It is typically found at elevations from 330 to 5,600 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four records are presumed extant. Eight CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Seven of these occurrences are presumed extant, and one is possibly extirpated.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Extant occurrences of this species are located in close proximity to the Project area. **Moderate Potential**
Intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)	1B.2	Intermediate mariposa-lily is a perennial bulbiferous herb that occurs in rocky and calcareous substrate in chaparral, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from 350 to 2,800 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four occurrences are presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. In addition, extant occurrences are within close proximity to the Mesa Substation site. **Moderate Potential**
Poaceae (Gramineae) – Grass Family					
California muhly (*Muhlenbergia californica*)	4.3	California muhly is a perennial rhizomatous herb that occurs in mesic seeps and streambeds in chaparral, coastal scrub, lower montane coniferous forest, and meadow habitat. It is typically found at elevations from 250 to 6,500 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this record is presumed extant, this occurrence was recorded in 1899.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the Rio Hondo and San Gabriel River corridors. However, no occurrences have been documented within 5 miles of these locations. The occurrence near the Goodrich Substation site has not been documented since 1899, and no suitable habitat exists in this location. **Low Potential**

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
California orcutt grass (*Orcuttia californica*)	FE CE 1B.1	California orcutt grass is an annual herb that occurs in vernal pool habitats. It is typically found at elevations from 50 to 2,150 feet.	April through August	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. **No Potential**
Polemoniaceae – Phlox Family					
Prostrate vernal pool navarretia (*Navarretia prostrata*)	1B.1	Prostrate vernal pool navarretia is an annual herb that occurs in mesic coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools. It is typically found at elevations from sea level to 2,300 feet.	April through July	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1895 and is possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. Although there is one recorded occurrence for this species in close proximity to the Project area, it was recorded in 1895. **No Potential**
Polygonaceae – Buckwheat Family					
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	1B.1	Parry's spineflower is an annual herb that occurs in sandy or rocky substrates in openings of chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from 900 to 4,000 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this occurrence is presumed extant, it was recorded in 1902.	Suitable habitat for this species occurs in the Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, the only occurrence near the Project area was observed in 1902. In addition, the Project area is located outside of this species' elevation range. **Low Potential**
Slender-horned spineflower (*Dodecahema leptoceras*)	FE 1B.1	Slender-horned spineflower is an annual herb that occurs in sandy substrates in chaparral, cismontane woodland, and alluvial fan coastal scrub habitats. It is typically found at elevations from 650 to 2,500 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded in 1920 and are extirpated.	Suitable habitat for this species occurs in the Project area in the Rio Hondo and San Gabriel River corridors. No documented occurrences are within 5 miles of this portion of the Project area. **Low Potential**
Rosaceae – Rose Family					
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	1B.1	Mesa horkelia is a perennial herb that occurs in sandy or gravelly substrate in maritime chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from 200 to 2,300 feet.	March through July	One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1911 and is extirpated. In addition to the occurrence listed previously, seven CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, these occurrences were recorded before 1940 and are either extirpated or possibly extirpated.	Suitable habitat for this species occurs in the Project area in south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Although there are recorded occurrences in close proximity to the Project area, they are all from 1940 or earlier and are presumed extirpated. **Low Potential**

Species Name	Federal, State, and CNPS Status[2]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Rubiaceae – Bedstraw Family					
San Gabriel bedstraw (*Galium grande*)	1B.2	San Gabriel bedstraw is a perennial deciduous shrub that occurs in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest habitats. It is typically found at elevations from 1,400 to 4,000 feet.	May through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four records are presumed extant.	No suitable habitat for this species occurs in the Project area. The Project area is located outside of this species' elevation range. **No Potential**
Thelypteridaceae – Thelypteris Family					
Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*)	2B.2	Sonoran maiden fern is a perennial rhizomatous herb that occurs in meadow and seep habitat. It is typically found at elevations from 150 to 2,000 feet.	January through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	No suitable habitat for this species occurs in the Project area. **No Potential**
Themidaceae – Brodiaea Family					
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT CE 1B.1	Thread-leaved brodiaea is a perennial bulbiferous herb that occurs in herbaceous plant communities, such as valley needlegrass grassland, valley sacaton grassland, non-native grassland, alkali playa, and vernal pool habitats. These herbaceous communities occur in open areas on clay soils at elevations from 100 to 2,500 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Project area. **Low Potential**

Sources: CDFW 2014, U.S. Fish and Wildlife Service (USFWS) 2014, CNPS 2014

Table 8: Special-Status Wildlife Species

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Amphibians				
Southern mountain yellow-legged frog (*Rana muscosa*)	FE CE	This species is endemic to the southern Sierra Nevada and Transverse Ranges. It inhabits high mountain lake, stream, pond, and isolated pool habitat. This species typically occurs in alpine lakes that are deeper than 8.2 feet and that have open shorelines with grassy or muddy margins. Breeding habitat consists of ponds, lakes, and streams that do not dry out in the summer, are deep enough that they don't freeze in the winter, and do not contain predatory fish. Breeding activity for southern mountain yellow-legged frog begins early in the spring and can range from April at lower elevations to June and July in higher elevations. Adults tend to move between breeding, feeding, and overwintering habitats throughout the course of the year. This species is typically found at elevations from 1,000 to 12,000 feet.	Four CNDDB occurrences are documented within 5 miles of the Goodrich Substation site; however, these occurrences are extirpated.	No suitable habitat for this species occurs within the Project area. In addition, the Project area is located below the typical elevation range associated with this species. **No Potential**
Western spadefoot (*Spea hammondii*)	SSC	This species prefers areas of open vegetation and short grasses with sandy or gravelly soils. The western spadefoot frequents washes, floodplains of rivers, and alkali flats, but can range into foothills and mountains. Throughout most of the year, this species resides in underground burrows. Breeding occurs in shallow, temporary pools formed by heavy winter rains.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs along the floodplains of the Rio Hondo and San Gabriel River corridors within the Project area. Suitable habitat also exists in the Montebello Hills within the Project area. **Moderate Potential**
Reptiles				
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	SSC	This species inhabits washes, streams, and sandy areas with rocks, patches of brush, and dry, often rocky hillsides. These lizards can also be found along ridges and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	This species was observed in the Montebello Hills area within the Project area during a December 2014 habitat assessment survey. **Present**
Blainville's horned lizard (*Phrynosoma blainvillii*)	SSC	Blainville's horned lizard is found in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. It occurs in valley-foothill hardwood, conifer woodland, riparian woodland, pine-cypress woodland, juniper woodland, and annual grassland habitats. This species inhabits open country, especially sandy areas, washes, floodplains, and wind-blown deposits. It typically forages on the ground in open areas, usually between shrubs. It is typically found at elevations up to 6,000 feet.	Three CNDDB records of this species are documented within 1 mile of the Mesa Substation site; however, these records are possibly extirpated. Two CNDDB occurrences are documented within 5 miles of the Project area and both records are presumed extant. Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site. All four occurrences are presumed extant.	Suitable habitat for this species occurs in the Project area but is fragmented and limited. Records listing this species as extant within the Project area are over 30 years old or include specimens housed in a museum with no data collection information. Much of the habitat located along the San Gabriel River corridor has since been lost to channelization. **Low Potential**

[4] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally Endangered Species
-FT: Federally Threatened Species
-FC: Candidate for Federal Listing

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-FP: Fully protected species
-SSC: Species of Special Concern

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Western pond turtle (*Emys marmorata*)	SSC	This species is found throughout California west of the Sierra-Cascade crest. It is absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. It occurs in aquatic habitat with permanent or nearly permanent water in a wide variety of habitat types. Western pond turtle requires basking sites within aquatic habitat, such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. This species is typically found at elevations below 4,700 feet.	Two CNDDB occurrences of this species are documented within 0.25 mile, one of which is presumed extirpated and one of which is presumed extant. Two CNDDB records are documented within 5 miles of the Mesa Substation site; however, both records are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	The Project area contains suitable aquatic and nesting habitat for this species along the San Gabriel River corridor, which has direct connectivity to known CNDDB locations. Habitat also exists along the Rio Hondo corridor. Some CNDDB occurrences may have been extirpated due to loss of aquatic habitat in other locations. **Moderate Potential**
Birds				
American peregrine falcon (*Falco peregrinus anatum*)	FP	This species is a year-round resident in California and is found in a variety of habitats. This species nests on vertical structures, such as niches in cliffs, steep banks, and ledges in close proximity to water. This species prefers to nest on coastal cliffs and bluffs; however, American peregrine falcon is also found nesting in urban areas on tall buildings and bridges. This species generally occurs in areas where an abundant food source is present, such as seabird colonies, waterfowl concentrations, or urban pigeons. This species typically forages in open habitats. Transient and wintering birds occur most frequently at lower elevations, but they have occurred from sea level to over 8,000 feet. Breeding generally occurs in mountainous and coastal areas, and egg-laying generally occurs from February to March.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. This record is presumed extant.	Because tall vertical structures and open water habitats are limited near the Project area, only marginal nesting habitat for American peregrine falcon occurs. However, this species was observed on the Mesa Substation site and east of the Rio Hondo corridor during surveys conducted for the TRTP. No nest was associated with these observations; this species was likely foraging in or flying through the Project area. **Nesting: Low Potential** **Foraging: Present**
Bank swallow (*Riparia riparia*)	CT	Bank swallow is a migratory species spending the winter months in Central and South America. It is a colonial nester in lowland river bank habitats and coastal bluffs. This species nests in earthen banks and bluffs, as well as in sand and gravel pits, primarily in riparian habitats. In its present range in California, this species primarily nests in steep earthen river banks that are subject to frequent water erosion. Nest sites consist of burrows dug into a vertical earthen bank to a depth of 18 to 36 inches. Breeding typically occurs from late March to mid-July. This species forages a few inches over water, or within grassland and certain croplands immediately adjacent to their nest colonies.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site; however, both records are extirpated. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1894 and is extirpated.	Habitat for this species occurs in the Project area, but this species is known by the CDFW to be extirpated from all of Southern California. **No Potential**
Coastal California gnatcatcher (*Polioptila californica californica*)	FT SSC	Coastal California gnatcatcher is an obligate, permanent resident of coastal sage scrub vegetation. It makes limited use of adjacent habitats outside of the breeding season. The species typically occurs in areas dominated by California sagebrush and California buckwheat. Other shrubs in the coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include brittlebrush (*Encelia californica*), deerweed (*Lotus scoparius*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*). The species is restricted to elevations from sea level to approximately 2,000 feet. Coastal California gnatcatcher breeds from February to late August, but most of the breeding occurs between mid-March and mid-May.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, and three CNDDB occurrences are documented within 5 miles of the Mesa Substation site. All five records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1928 and is extirpated.	Critical habitat for this species occurs in the Montebello Hills and San Gabriel River corridor within the Project area. Coastal California gnatcatchers were observed nesting within the Mesa Substation site and in the Montebello Hills north of Lincoln Avenue during protocol-level surveys conducted in the spring of 2015. **Nesting: Present** **Foraging: Present**

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Least Bell's vireo (*Vireo bellii pusillus*)	FE CE	Least Bell's vireo is a rare and local summer visitor from mid-March to the end of August and ranges from sea level in coastal areas to 1,500 feet in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mulefat scrub, and cottonwood-willow forests. During the breeding season, this species may forage in adjacent upland habitats. Little is known about this species' winter habitat, but it is not exclusively dependent on riparian woodland during winter. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palm groves and hedgerows associated with agricultural fields and rural residential areas. Breeding typically occurs from late March to late September.	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Five CNDDB occurrences are documented within 5 miles of the Mesa Substation site, three of which are possibly extirpated and two of which are presumed extant. Observations of this species, including one pair, were recorded by Whittier Narrows Nature Center staff at three locations within the Whittier Narrows Recreation Area between April and July 2014. Three CNDDB occurrences are documented within 5 miles of the Goodrich Substation site. However, two occurrences were recorded in 1923 and 1895 and are possibly extirpated. The third was recorded in 1924 and is presumed extant.	Suitable habitat for least Bell's vireo nesting and foraging occurs in the Montebello Hills, and along the San Gabriel River corridor within the Project area, where this species is known to occur. This species was not identified as nesting on the Mesa Substation site during four years of monitoring for the TRTP. Least Bell's vireo was observed nesting and foraging in the Montebello Hills, the Rio Hondo corridor, and the San Gabriel River corridor during surveys conducted for the TRTP. **Nesting: Present** **Foraging: Present**
Loggerhead shrike (*Lanius ludovicianus*)	SSC	Loggerhead shrike is present year-round throughout California. This species typically breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs, trees, fences, or power lines for hunting perches, nest placement, territorial advertisement, and pair maintenance. They also require open areas of short grasses, forbs, or bare ground for hunting. Impaling sites—such as sharp, thorny plants or barbed wire fences—are important for this species to manipulate or store prey. Breeding in Southern California typically occurs from as early as January to July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Montebello Hills and the San Gabriel River corridor within the Project area. Breeding pairs have declined extensively within Los Angeles County and are now rare. This species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Project area. **Nesting: Low Potential** **Foraging: Present**
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE CE	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat includes willows, mulefat, box elder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arroweed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet, but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One of these occurrences is also documented within 0.25 mile of the Goodrich Substation site.	Suitable breeding or foraging habitat for this species occurs in the Project area; however, the occurrences near these areas were recorded in 1894 and 1906 when more riparian habitat was present. **Low Potential**

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Swainson's hawk (*Buteo swainsoni*)	CT	Swainson's hawk breeds in the western U.S. and Canada and winters in South America. This species breeds in trees within mature riparian forests, oak groves, and in mature roadside trees in close proximity to large, open expanses of suitable foraging habitat. Over 85 percent of documented Swainson's hawk nests trees are often found in riparian systems; therefore, this habitat type is likely very important. Suitable foraging habitat includes native grassland or lightly grazed dryland pasture, alfalfa and other hay crops, and row crops. Swainson's hawk does not forage in vineyards, orchards, or cotton fields because prey is not available in these areas during most of the breeding season.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1880 and is possibly extirpated. This occurrence is also documented within 5 miles of the Goodrich Substation site.	Marginal habitat for nesting Swainson's hawk occurs in the Project area primarily within non-native woodland; however, nesting populations in the Los Angeles Basin are now considered extremely rare. This species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Project area during migration. **Nesting: No Potential** **Foraging: Present**
Western burrowing owl (*Athene cunicularia*)	SSC	Western burrowing owl lives in dry, open areas with no trees and short grass. The species is found in golf courses, cemeteries, airports, vacant lots, university campuses, pastures, and prairie dog (*Cynomys* spp.) towns. It nests in burrows that are often dug by a small mammal, especially the California ground squirrel. Western burrowing owl is generally found at elevations from approximately 200 to 5,000 feet. This species breeds from March to August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1895 and is presumed extant.	Suitable habitat for this species occurs in grassland vegetation where burrows are present within the Project area. No western burrowing owls or western burrowing owl sign (i.e., feathers, pellets, or whitewash) were observed during the 2009 and 2010 focused burrowing owl surveys conducted for the TRTP, or during the 2014 habitat assessment surveys. **Moderate Potential**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC CE	Western yellow-billed cuckoo arrives in California as early as May and departs by mid-September. This species prefers to nest in open woodlands with clearings and dense scrubby vegetation, often along water. Breeding habitat generally consists of mixed old growth riparian forests consisting of willow and cottonwood. Breeding generally occurs in the summer between May and August at elevations below 2,500 feet.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. **No Potential**
Yellow warbler (*Setophaga petechia*)	SSC	Yellow warbler occurs as a migrant and summer resident in California. This species generally occupies riparian vegetation in close proximity to water along streams and wet meadows. They are often associated with willow and cottonwood trees in riparian areas. Breeding generally occurs from April to late July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable nesting habitat for yellow warbler occurs in the Rio Hondo and San Gabriel River corridors within the Project area; however, the habitat is fragmented. This species was observed within the Mesa Substation site, in the Montebello Hills, and in the Rio Hondo and San Gabriel River corridors during surveys conducted for the TRTP. No nest was associated with these observations. **Nesting: Low Potential** **Foraging: Present**

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Mammals				
American badger (*Taxidea taxus*)	SSC	American badger occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. The species is also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. It is sometimes found at elevations up to 12,000 feet, but is usually found in the Sonoran and Transition life zones (i.e., elevations lower and warmer than those characterized by coniferous forests). American badgers are occasionally found in open chaparral (with less than 50-percent plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 to 10 feet in depth and 4 to 6 feet in width. Breeding generally occurs between December and February, and cubs are born between March and April.	There is one CNDDB occurrence of this species within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for American badger occurs within the Project area; however, no burrows or dens of suitable size for American badger were observed during field surveys conducted by Insignia in June 2014 or December 2014. **Low Potential**
Pallid bat (*Antrozous pallidus*)	SSC	Pallid bat inhabits deserts, grasslands, shrublands, woodlands, and forests. It is generally found in the Sonoran life zone at elevations from 100 to 7,000 feet. It is most commonly found in open, dry habitats with rocky areas for roosting. The species roosts in rocky outcrops, snags, and abandoned man-made structures. Pallid bat mating may occur as early as October and continues through February.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both occurrences were recorded before 1932 and are presumed extant. These two occurrences, along with three other CNDDB occurrences of this species, are also documented within 5 miles of the Goodrich Substation site. All five occurrences were recorded before 1932.	Marginally suitable habitat for foraging pallid bats and man-made structures for roosting pallid bats are present within the Project area. **Low Potential**
San Diego black-tailed jackrabbit (*Lepus californicus bennettii)*	SSC	San Diego black-tailed jackrabbit generally occurs in open areas or semi-open country with scattered low shrubs. It typically occurs in grasslands, agricultural fields, or sparse coastal sage scrub at elevations ranging from sea level to 6,000 feet. It is generally not found in chaparral or woodland habitats. The length of the breeding season depends on the duration and severity of winter. In California, this species can breed throughout the year.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	The Project area falls within the range of this species. Suitable habitat for this species occurs throughout the natural areas of the Project area. **Low Potential**
Southern grasshopper mouse (*Onychomys torridus ramona*)	SSC	Southern grasshopper mouse occurs in desert areas, especially in scrub habitats with friable soils for digging. This species prefers alkali desert scrub and desert scrub habitats; however, it can also be found in succulent shrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitat. This species is uncommon in valley foothill and montane riparian habitats. The peak breeding season for this species is from May to July, but it may start breeding as early as January under ideal conditions.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1904 and is presumed extant.	Suitable habitat for this species occurs in the Project area. **Moderate Potential**
Western mastiff bat (*Eumops perotis californicus*)	SSC	Western mastiff bat inhabits arid and semi-arid lowlands in the Lower Sonoran life zone of California at elevations ranging from 100 to 4,000 feet. This species occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodland, coastal scrub, annual and perennial grassland, palm oases, chaparral, desert scrub, and urban habitats. The species primarily roosts in crevices in vertical cliffs—usually granite or consolidated sandstone—and in broken terrain with exposed rock faces. It is also found occasionally in high buildings, trees, and tunnels. Western mastiff bat roost sites may change from season to season. Due to its large size, it needs vertical faces to drop from in order to take flight. Western mastiff bat nursery roosts can be found in tight rock crevices. Breeding likely occurs from April through September.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four occurrences were recorded before 1958 and are presumed extant.	Marginally suitable habitat for western mastiff bat occurs within palms and buildings in the Project area. **Low Potential**

Species Name	Listing Status[4]	Life History	Known Locations	Potential to Occur
Western yellow bat (*Lasiurus xanthinus*)	SSC	Western yellow bat occurs in palm oases, but may also use ornamental palms in landscaping. In California, this species appears to roost exclusively in skirts of palm trees and is limited in its distribution by the availability of palm habitat. Yellow bats likely do not hibernate, as activity has been observed year-round. Breeding likely occurs from late April through July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for western yellow bat occurs within ornamental palms in the Project area. **Low Potential**

Sources: CDFW 2014, CDFW 2011, USFWS 2014

Attachment C: Biological Resources Technical Report provides further details on the special-status species and sensitive vegetation communities that occur or have the potential to occur in the Project area, and the measures being taken by SCE to address potential impacts to these species. In addition, a Biological Assessment has been prepared in accordance with requirements set forth under Section 7 of the federal Endangered Species Act (ESA) (16 U.S. Code 1536[c]) to address the potential effects of the Project on federally listed threatened and endangered species, their designated critical habitat, and proposed/candidate species for ESA protection; this document is provided in Attachment D: Biological Assessment. The U.S. Army Corps of Engineers (USACE) is the anticipated lead federal agency for the ESA Section 7 consultation with the USFWS.

BOX 12A: MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES – SEDIMENT-PREVENTION TECHNIQUES

Best management practices to be implemented will include erosion control and stabilization, sediment controls, good housekeeping, waste management and hazardous materials controls, and guidelines for working around waterbodies. An approved project-specific Storm Water Pollution Prevention Plan (SWPPP) will implemented throughout the life of the Project to ensure potential on-site sediment is controlled within the Project's Boundaries.

BOX 12B: MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES – AVOIDANCE AND/OR MINIMIZATION MEASURES

The following applicant-proposed measures (APMs) will be implemented to protect fish, wildlife, and plant resources:

- **APM-BIO-01: Special-Status Plant Species.** During the appropriate phenological periods, formal pre-construction surveys for rare plants will be conducted in areas where special-status plants have the potential to occur within the construction areas. Prior to construction, the locations of any special-status plants identified during the surveys will be marked or flagged for avoidance. This boundary will be maintained during work at these locations and will be avoided during all construction activities to the extent possible. Impacts to Nevin's barberry will be avoided. Where disturbance to these areas cannot be avoided, SCE will develop and implement a Revegetation Plan. The Revegetation Plan will include measures for transplanting and replacing special-status plant species that may be impacted by construction of the Project. This plan will also include general measures in the event that special-status plant species are encountered prior to construction of the Project. It will also include post-construction invasive weed management measures, where necessary, to ensure successful revegetation back to pre-construction conditions or to equivalent conditions of representative habitat that is immediately adjacent to the affected area.

- **APM-BIO-07: Avian Protection.** Electrical facilities will be designed in accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

- **APM-BIO-08**: **Compensation for Permanent Impacts.** Permanent impacts to all jurisdictional water resources will be compensated at a 1-to-1 ratio, or as required by the USACE, CDFW, and Regional Water Quality Control Board (RWQCB).

In addition to the APMs listed above, SCE will implement the following minimization and monitoring measures to avoid and minimize adverse effects to biological resources.

General Measure

- **General Measure-01**: **Pre-construction Surveys**. At least 60 days prior to the initiation of ground-disturbing activities, SCE will designate a field contact representative(s) who will be responsible for overseeing compliance with the measures outlined in the USFWS's biological opinion for the Project.

Mitigation Measures

- **Mitigation Measure (MM-) 01: Revegetation Plan.** To the extent feasible, SCE will minimize impacts and permanent loss to riparian habitat, native trees, and other vegetation that is regulated by federal, state, or local agencies, and/or that provides suitable habitat for special-status species. Impacts will be minimized at construction sites by flagging native vegetation to be avoided. If SCE is unable to avoid impacts to protected vegetation, a Habitat Compensation and Revegetation Plan (HCRP) will be prepared in coordination with the appropriate agencies for areas of native habitat that are temporarily and/or permanently impacted during construction. The HCRP will describe, at a minimum, which vegetation restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Project's Storm Water Pollution Prevention Plan) will be implemented in the Project area. The HCRP will also include the species or habitats that could be impacted, the replacement or revegetation ratios (as appropriate), and the revegetation methods and techniques
- **MM-02: Biological Monitoring.** To the extent feasible, biological monitors will monitor construction activities in areas with special-status species, native vegetation, wildlife habitat, or unique resources to ensure that such resources are avoided.
- **MM-03: Coastal California Gnatcatcher Protection.** A USFWS-approved biologist will conduct pre-construction surveys for coastal California gnatcatcher no more than seven days prior to the start of ground-disturbing activities, if this work will commence between March 1 and August 30. Surveys for coastal California gnatcatcher will be conducted in suitable nesting habitat within 100 feet of the Project area. Construction activities in occupied coastal California gnatcatcher habitat will be monitored by a full-time USFWS-approved avian biologist. If a breeding territory or a nest with eggs or chicks are found, an exclusion buffer will be established around the nest. A standard buffer will be established for Project activities until an USFWS-approved avian biologist can determine a reduced buffer distance, based on proposed construction activities, or whether the young have left the nest. Temporary and permanent impacts to coastal California gnatcatcher and their habitat will be mitigated as required by the USFWS.
- **MM-04: Nesting Birds.** SCE will conduct pre-construction clearance surveys no more than seven days prior to construction to determine the location of nesting birds and territories during the nesting bird season. An avian biologist will establish a buffer area around active nests and will monitor the effects of construction activities to prevent

failure of the active nest. The buffer will be established based on construction activities, potential noise disturbance levels, and the behavior of the species. Construction activities that have the potential to affect active nests will be monitored until the adjacent construction activities are complete or until the nest is no longer active.

Coastal California Gnatcatcher Mitigation Measures

- **MM-CAGN-01: Pre-construction Sweeps.** In addition to conducting protocol-level surveys for coastal California gnatcatcher (in accordance with MM-03) and nesting bird surveys (in accordance with MM-04), SCE will conduct pre-construction clearance surveys for coastal California gnatcatcher within seven days prior to initiation of ground-disturbing activities during the breeding season (February 1 and August 30). The surveys are intended to detect coastal California gnatcatcher that may take residence after the protocol-level surveys have been completed and/or where habitat is not previously determined to be occupied by coastal California gnatcatcher. Surveys will be conducted by an Avian Biologist approved by SCE and USFWS. If nesting is behavior is observed, a California gnatcatcher Specialist will monitor the species and install a buffer around any active nests, as needed.
- **MM-CAGN-02: Vegetation Removal.** SCE will monitor vegetation clearing in coastal California gnatcatcher habitat. Monitoring will be conducted by a biological monitor, which is a defined as a wildlife biologist who has been approved by SCE to conduct surveys and monitoring for wildlife species. Vegetation removal will occur only after the California gnatcatcher Specialist has confirmed that there are no active nests, the fledglings are no longer being fed by their parents, and/or the species has moved out of the work areas.
- **MM-CAGN-03: Coastal California Gnatcatcher Protection (Construction).** A biological monitor will be present to ensure compliance with nest buffers during construction. Construction can occur within the buffers after the California gnatcatcher Specialist confirms there are no active nests and/or the fledglings are no longer being fed by their parents. Construction monitoring for coastal California gnatcatcher may be suspended if the California gnatcatcher Specialist has determined that the species and their territories no longer overlap the Project.
- **MM-CAGN-04: Compensatory Mitigation.** Permanent and temporary impacts to occupied coastal California gnatcatcher breeding habitat will be mitigated at an off-site location, as agreed upon by the USFWS.

Additional Protection for Special-Status Wildlife Species

- **Worker Environmental Awareness Program Training:** Prior to construction, a qualified biologist or other qualified resource specialist will develop an environmental training for all Project personnel. The training will cover all pertinent Project APMs, permit conditions, and any other required environmental compliance measures. In addition, the environmental training will familiarize all Project personnel with special-status species that may occur within the construction areas. All Project personnel will attend the training prior to starting work on the Project. Upon completion of the training, each attendee will sign a form stating that he/she participated in the training and understood the material presented.

BOX 13: PERMITS

Table 9: Other Agency Certifications or Approvals provides the permits and authorizations required for the Project, as well as the applicable jurisdictional agency, the date applied or anticipated submittal date, and the anticipated approval date.

Table 9: Other Agency Certifications or Approvals

Permit/Approval/Consultation	Agency	Identification Number	Date Applied	Anticipated Submittal Date	Date Approved/Denied
Federal Agencies					
Section 404 Nationwide Permit	USACE		June 30, 2015	--	--
Section 408 Permit		--	August 28, 2015	--	--
Section 7 Consultation	USFWS	--	June 30, 2015	--	--
State Agencies					
Permit to Construct	CPUC	A. 15-03-003	March 13, 2015	--	--
National Pollutant Discharge Elimination System General Construction Permit	State Water Resources Control Board	--	--	June 2016	--
Section 401 Water Quality Certification	Los Angeles RWQCB	--		January 2016	--
Encroachment Permit	California Department of Transportation	--	--	April 2016	--
Local Agencies					
Encroachment Permit	Cities of Monterey Park, Montebello, and Bell Gardens	--	--	July 2016	--
Grading Permit	City of Monterey Park	---	--	December 2015	--

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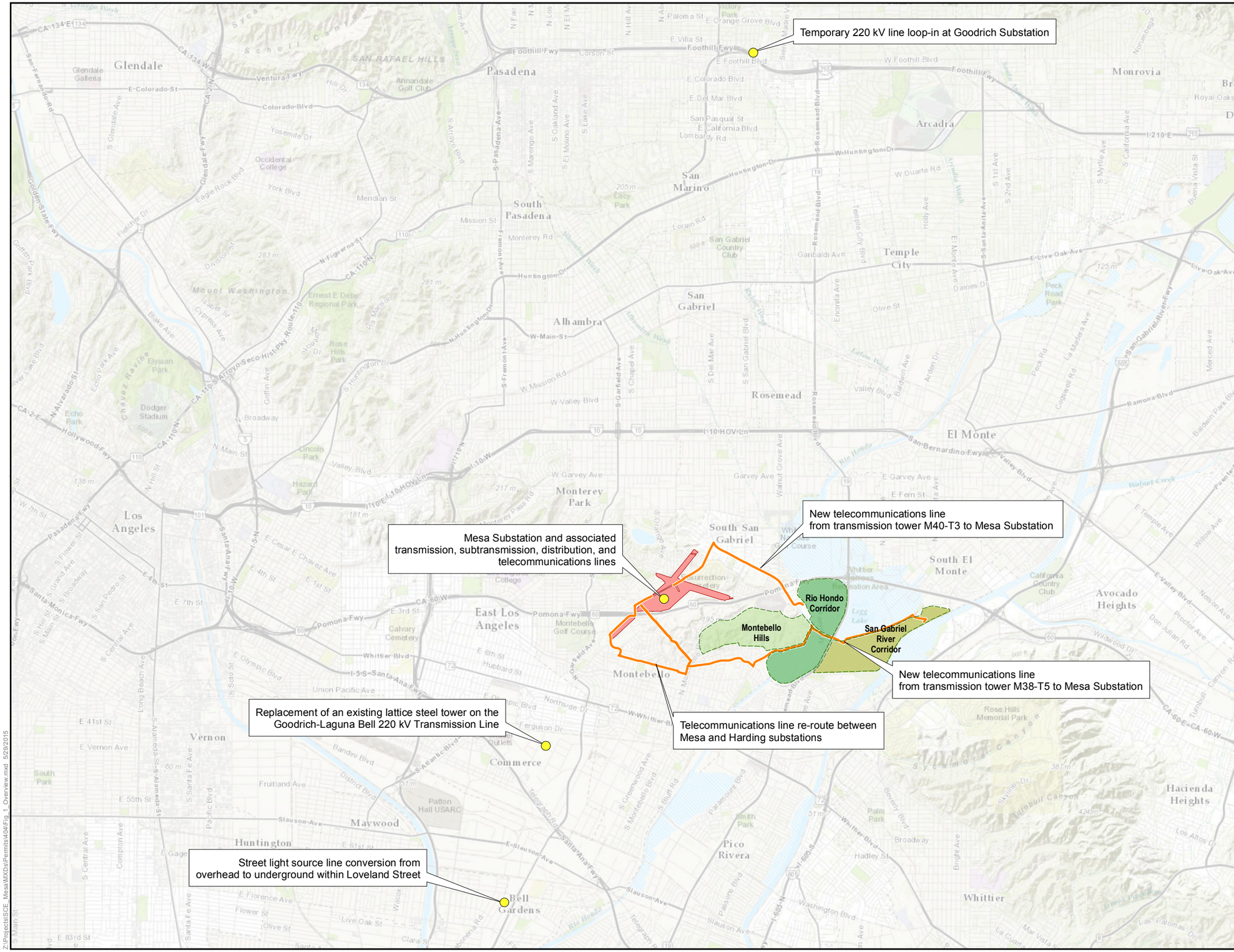
ATTACHMENT B: FIGURES

Figure 1: Project Components Overview Map

Mesa 500 kV Substation Project



Main Component Location

Mesa Substation Study Area

Proposed Telecommunications

Natural Areas

Montebello Hills

Rio Hondo Corridor

San Gabriel River Corridor

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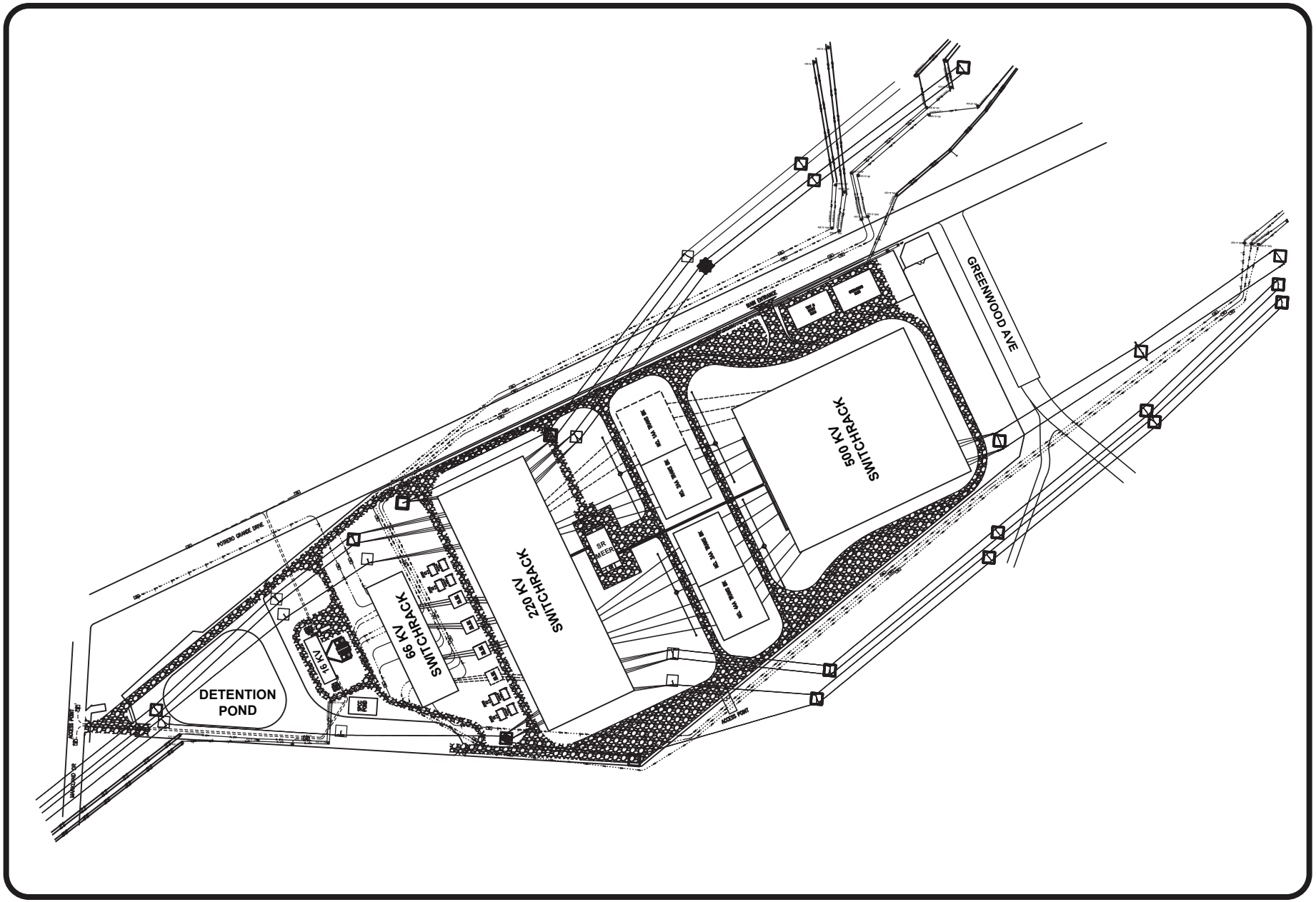

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Figure 2: Proposed Substation Layout

Figure 3:
Grading Phase Areas
Mesa 500 kV Substation Project

Phase Area

- Phase 1
- Phase 2
- Phase 3
- City Boundary

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Figure 4:
Impacts to CDFW-Jurisdictional Waters Overview

Mesa 500 kV Substation Project

Project Area
Mesa Substation Site
Map Extent

CDFW-Jurisdictional Waters

Rio Hondo (No Impacts)
Water Permanently Impacted
Water Temporarily Impacted
Flow Direction

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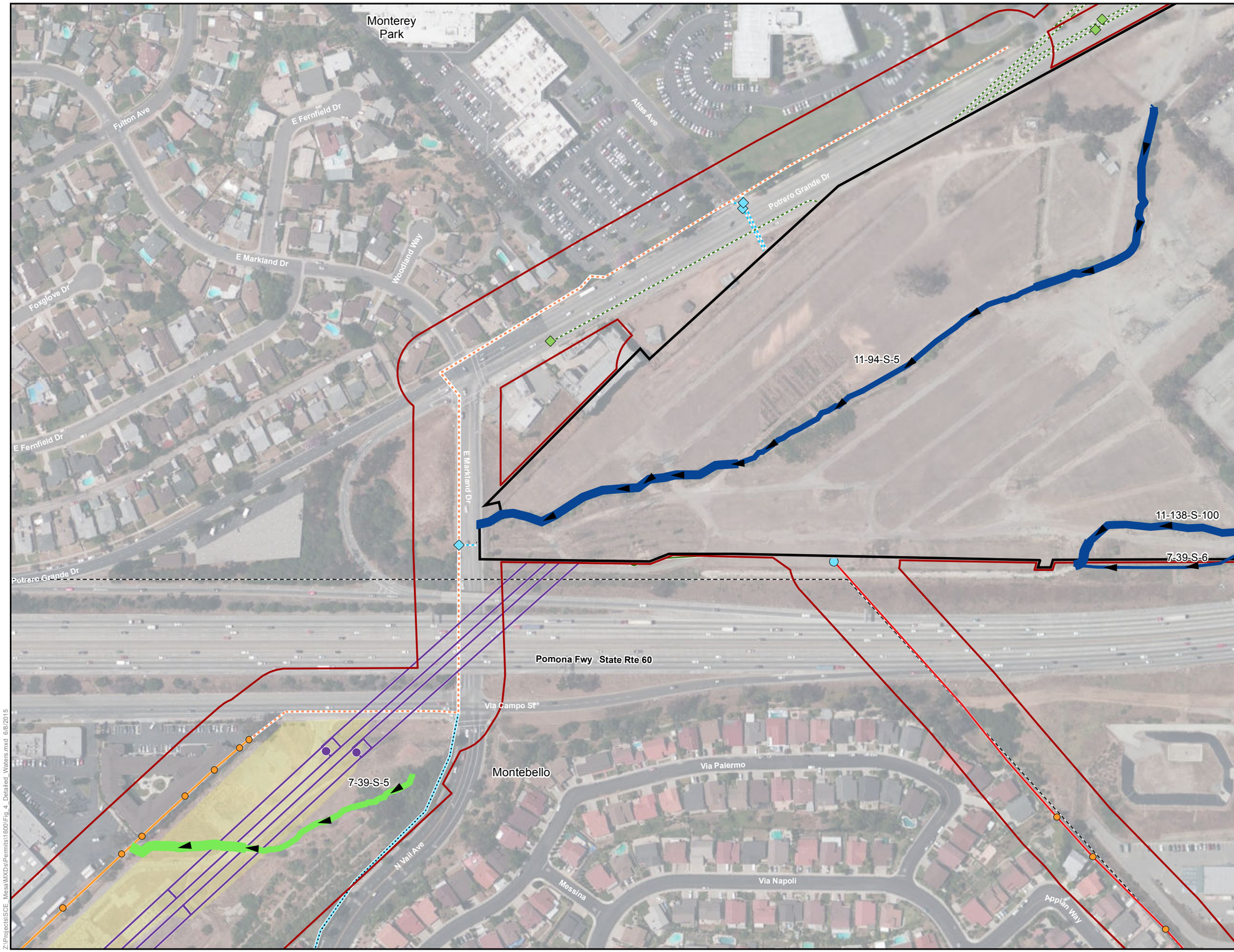

Figure 4: Impacts to CDFW-Jurisdictional Waters Map 1 of 4

Mesa 500 kV Substation Project

City Boundary

CDFW-Jurisdictional Waters

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

Telecommunications

- Proposed Vault/Manhole
- Existing Pole
- Proposed Overhead (On Existing Facilities)
- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

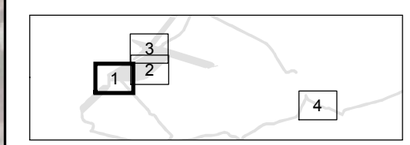

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Figure 4: Impacts to CDFW-Jurisdictional Waters Map 2 of 4

Mesa 500 kV Substation Project

City Boundary

CDFW-Jurisdictional Waters

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

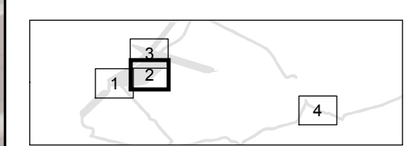
Telecommunications

- Proposed Vault/Manhole
- Existing Pole
- Proposed Overhead (On Existing Facilities)
- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.



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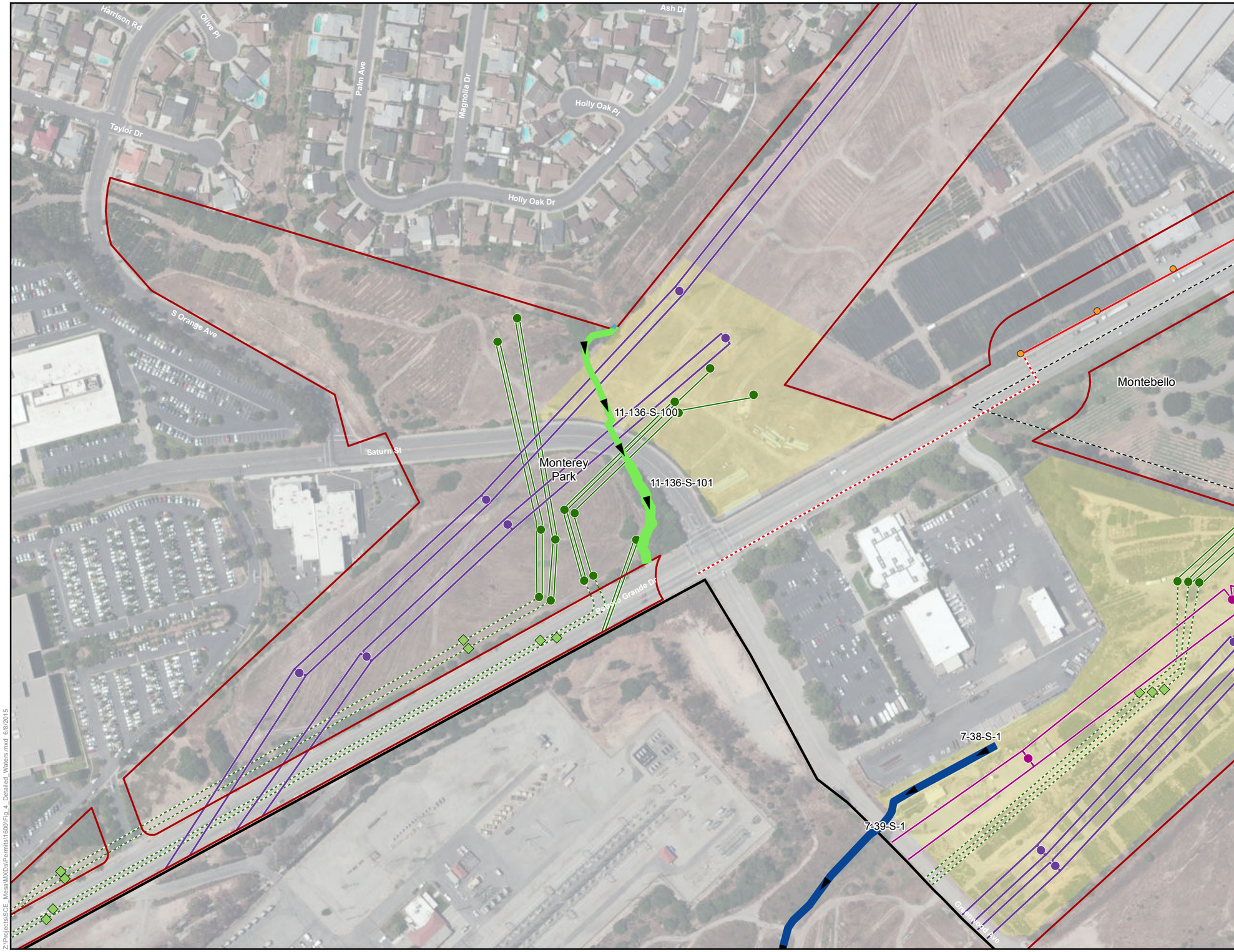

Figure 4: Impacts to CDFW-Jurisdictional Waters Map 3 of 4

Mesa 500 kV Substation Project

City Boundary

CDFW-Jurisdictional Waters

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

Telecommunications

- Proposed Vault/Manhole
- Existing Pole
- Proposed Overhead (On Existing Facilities)
- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

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Figure 4: Impacts to CDFW-Jurisdictional Waters Map 4 of 4

Mesa 500 kV Substation Project

City Boundary

CDFW-Jurisdictional Waters

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

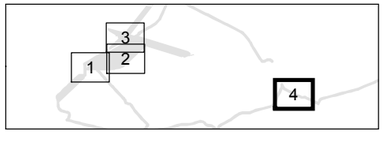
Telecommunications

- Proposed Vault/Manhole
- Existing Pole
- Proposed Overhead (On Existing Facilities)
- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.



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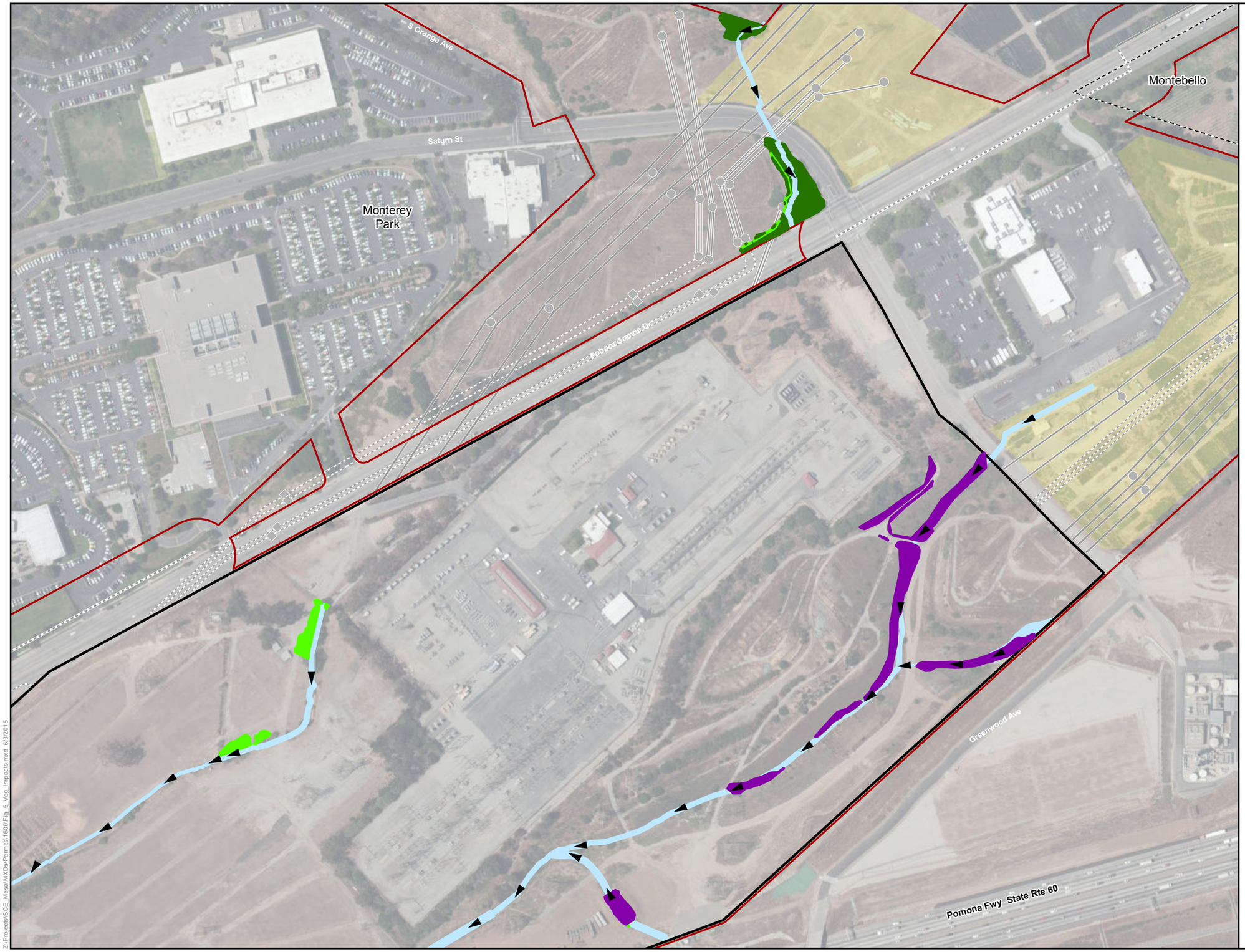


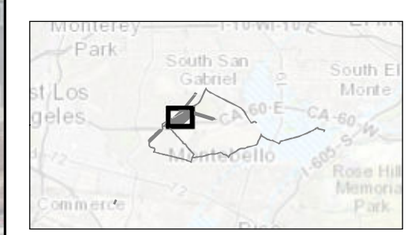
Figure 5: Impacts to Riparian Vegetation
Mesa 500 kV Substation Project

City Boundary
Permanently Impacted Mulefat Scrub
Permanently Impacted Riparian Woodland
Temporarily Impacted Riparian Woodland
CDFW Jurisdictional Water
Flow Direction

Project Components

Project Area
Mesa Substation Site
Staging Yard
Proposed Structure
Proposed Vault
Proposed Underground Line
Proposed Overhead Line

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.



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ATTACHMENT C: BIOLOGICAL RESOURCES TECHNICAL REPORT

Biological Resources Technical Report

for the

Mesa 500 kV Substation Project

Prepared for:

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Prepared by:

INSIGNIA ENVIRONMENTAL

February 2015

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EXECUTIVE SUMMARY

Southern California Edison Company (SCE) is proposing the Mesa 500 kilovolt (kV) Substation Project (Proposed Project). The Proposed Project area is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The Proposed Project area overlaps with portions of Segments 7, 8, 9, and 11 of the Tehachapi Renewable Transmission Project.

The Proposed Project consists of the following main components:

- Construction of the proposed Mesa Substation and demolition of the existing Mesa Substation within the City of Monterey Park
- Removal, relocation, modification and/or construction of transmission, subtransmission, distribution, and telecommunications structures within the cities of Monterey Park, Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County
- Conversion of an existing distribution source line from overhead to underground between three street lights on Loveland Street within the City of Bell Gardens
- Installation of a temporary 220 kV line loop-in at Goodrich Substation within the City of Pasadena

Construction and operation of the proposed Mesa Substation would require additional minor modifications within several existing substations throughout the Electrical Needs Area, as discussed in Section 3.5.4.23, Modifications to Existing Substations in Chapter 3, Project Description. These minor modifications would be located within the substations' existing fenced perimeters, and the associated work would be similar to Operation and Maintenance (O&M) activities currently performed by SCE; therefore, construction of these minor modifications would not result in changes to biological resources in the area. As a result, these components are not discussed further in this Biological Resources Technical Report (BRTR).

The region includes a mixture of residential and commercial developments, industrial and nursery areas, and disturbed habitats.

This BRTR identifies existing or potential biological resources that may be present within or adjacent to the Proposed Project, assesses the likelihood of the Proposed Project to affect sensitive resources, describes potential impacts to biological resources, and provides applicant-proposed measures (APMs) that would be used to avoid and/or minimize potential for impacts.

Based on the background research and field visits for the Proposed Project, SCE determined that two special-status plant species—California black walnut (*Juglans californica*) and Nevin's Barberry (*Berberis nevinii*)—are present within the Proposed Project area or in the immediate vicinity. Three special-status plant species— southern tarplant (*Centromadia parryi* ssp. *australis*), Plummer's mariposa-lily (*Calochortus plummerae*) and intermediate mariposa-lily

(*Calochortus weedii* var. *intermedius*)—have a moderate potential to occur in the construction areas. In addition, the following seven special-status wildlife species were identified as being present within or near the Proposed Project area:

- Belding's orange-throated whiptail (*Aspidoscelis hyperythrus beldingi*)
- American peregrine falcon (*Falco peregrinus anatum*),
- coastal California gnatcatcher (*Polioptila californica californica*),
- least Bell's vireo (*Vireo bellii pusilus*),
- loggerhead shrike (*Lanius ludovicianus*),
- Swainson's hawk (*Buteo swainsoni*), and
- yellow warbler (*Setophaga petechia*).

The following four special-status wildlife species have a moderate potential to occur in the construction areas:

- western spadefoot (*Spea hammondii*)
- western pond turtle (*Emys marmorata*)
- western burrowing owl (*Athene cunicularia*)
- southern grasshopper mouse (*Onychomys torridus ramona*)

Two sensitive vegetation communities occur within the Proposed Project area: southern sycamore-alder riparian woodland and California walnut woodland. United States Fish and Wildlife Service-designated critical habitat for coastal California gnatcatcher is also located within the Proposed Project area.

SCE is currently planning to implement a series of APMs designed to avoid and minimize the temporary and permanent direct and indirect impacts of the Proposed Project. With the implementation of these measures, impacts to sensitive habitats, hydrologic features, and special-status species are anticipated to be less than significant pursuant to the California Environmental Quality Act.

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Attachment D: Supplemental Jurisdictional Delineation Report

1 – INTRODUCTION

Southern California Edison Company (SCE) is proposing the Mesa 500 kilovolt (kV) Substation Project (Proposed Project). The Proposed Project is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The Proposed Project area overlaps with portions of Segments 7, 8, 9, and 11 of the Tehachapi Renewable Transmission Project (TRTP), as discussed further in Section 2 – Background.

This Biological Resources Technical Report (BRTR) was prepared to identify any existing or potential sensitive biological resources that may be present within or adjacent to the Proposed Project area, including vegetation communities, hydrologic features, and special-status plant and animal species and their associated habitat. This document assesses the likelihood of the Proposed Project to affect these biological resources, describes potential impacts resulting from the construction of the Proposed Project, and recommends applicant-proposed measures (APMs) to avoid and minimize impacts to biological resources.

2 – BACKGROUND

SCE is currently constructing the TRTP to provide the electrical facilities necessary to interconnect new wind turbine-based electrical generation from the Tehachapi Wind Resource Area (TWRA). The TRTP consists of a series of new and upgraded high-voltage transmission lines and substation facilities that would deliver electricity from renewable wind energy generators in eastern Kern County, California to the Los Angeles Basin. The TRTP consists of eight segments—Segment 4 through Segment 11.

Segments 4, 5, and 10 involve upgrading and expanding SCE's existing transmission system north of the Vincent Substation near Acton, California in order to integrate TWRA wind generation into SCE's electrical system. Segments 6, 7, 8, and 11 involve upgrading and expanding SCE's existing transmission system south of the Vincent Substation in order to deliver TWRA wind generation to SCE's load centers in the Los Angeles Basin. Segment 9 involves building the new Whirlwind Substation in Kern County, California; expanding the Vincent Substation near Acton, California and the Antelope Substation in Lancaster, California; and upgrading Gould Substation in La Cañada Flintridge, California, Mesa Substation in Monterey Park, California, and Mira Loma Substation in Ontario, California.

The Mesa Substation site includes the southern portion of Segment 11, the southwestern portion of Segment 7, and the northwestern portion of Segment 8. In addition, Segment 9 includes an upgrade to Mesa Substation. Additional work areas within the Mesa Substation site, including the southwestern portion of the site, do not overlap with the TRTP. The Goodrich Substation site is located north of the Mesa Substation site along Segment 11 of the TRTP.

3 – PROJECT DESCRIPTION

3.0 LOCATION

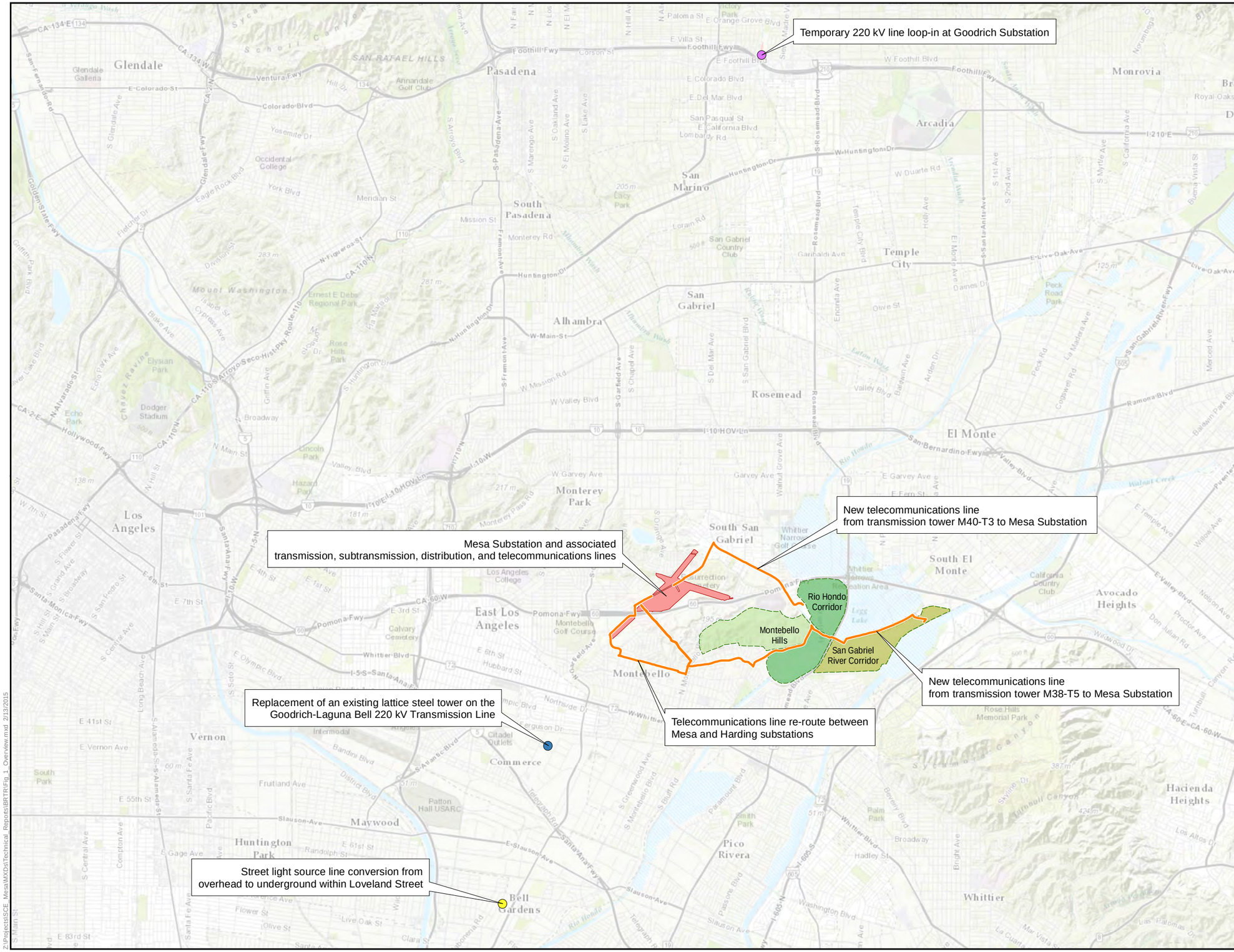
The Proposed Project site is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County, as depicted in Figure 1: Project Overview Map.

The construction of the 500/220/66/16 kV Mesa Substation would be located in the City of Monterey Park. The City of Monterey Park is bordered by the unincorporated area of East Los Angeles to the west, the cities of Los Angeles and Alhambra to the north, the City of Rosemead to the east, and the City of Montebello to the east and south. The San Gabriel Mountains are located approximately 8 miles to the north of the City of Monterey Park and form the northern boundary of the San Gabriel Valley, in which the city lies. The City of Monterey Park is generally urban and developed with a few areas of open space or parkland. Land use in the area surrounding the Proposed Project is industrial and commercial to the north, State Route (SR-) 60 to the south, the SCE Montebello Service Center to the east, the Resurrection Cemetery to the northeast, and low-density residential and commercial zones to the west. A large retail shopping center—Monterey Park Market Place—is currently in the entitlement phase and is proposed to be located directly east of the Proposed Project site.

The unincorporated area of Los Angeles County in the vicinity of the Proposed Project is bordered by the City of Monterey Park to the west and south, the unincorporated area of South San Gabriel to the north, the City of Montebello to the southeast, and the City of Rosemead to the east. An approximately 1.1-mile portion of the telecommunications line would be located within the Whittier Narrows Natural Area and along Potrero Grande Drive and Hill Drive within the unincorporated community of South San Gabriel. Whittier Narrows Natural Area is located on property owned by the United States (U.S.) Army Corps of Engineers (USACE) and managed by Los Angeles County Department of Parks and Recreation. Existing land uses in the vicinity include a mix of commercial and residential uses. In addition, approximately 2 miles of the telecommunications line would be located along San Gabriel Boulevard and Durfee Avenue in unincorporated Los Angeles County. Existing land uses in the vicinity include Whittier Narrows Recreation Area, Whittier Narrows Water Reclamation Plant, the USACE Los Angeles District offices, commercial and residential uses, and a trucking storage yard.

Portions of the transmission, subtransmission, distribution, and telecommunications work would occur within the City of Montebello. The City of Montebello is bordered to the north by the cities of Monterey Park and Rosemead, to the southwest by the City of Commerce, to the southeast by the City of Pico Rivera, to the east by the Whittier Narrows Recreation Area, and to the west by the City of Commerce and unincorporated areas of Los Angeles County. The City of Montebello predominately consists of industrial, commercial, and residential uses. The majority of the transmission, subtransmission, distribution, and telecommunications work within the City of Montebello would occur within existing SCE rights-of-way (ROWs) and franchise locations along public roads. Telecommunications lines would be installed on existing overhead poles and predominantly within existing conduits along Potrero Grande Drive, San Gabriel Boulevard, Lincoln Avenue, Avenida De La Merced, Wilcox Avenue, and Markland Drive. Existing land

Figure 1:
Project Overview Map
Mesa 500 kV Substation Project



Main Component Study Areas

- Mesa Substation Study Area
- Proposed Telecommunications Study Area
- Goodrich Substation Study Area
- Goodrich-Laguna Bell 220 kV Tower Replacement Study Area
- Distribution Street Light Undergrounding Study Area

Natural Areas

- Montebello Hills
- Rio Hondo Corridor
- San Gabriel River Corridor

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uses in these areas are predominately residential. A staging area would be located within an existing ROW east of Mesa Substation and would be bordered by a third-party landscape nursery, a cemetery, and residential uses to the northeast, and by a vacant former landfill and SR-60 to the south. To the south of Mesa Substation, a staging area would be located within an existing ROW, bordered by SR-60 to the north, Schurr High School to the south and east, another third-party landscape nursery to the southwest, and a shopping center to the west.

An approximately 0.9-mile portion of the telecommunications line would be located along San Gabriel Boulevard within the City of Rosemead. The proposed telecommunications line would be installed on existing overhead poles. Uses along this portion of the telecommunications route include a mix of commercial and residential uses, a church, and Don Bosco Technical Institute.

Within the City of South El Monte, an approximately 160-foot segment of the telecommunications line would be located south of Durfee Avenue on existing overhead poles. Existing adjacent land uses include commercial and residential uses and Whittier Narrows Recreation Area.

Within the City of Commerce, an existing transmission tower would be replaced within an SCE area of use, approximately 2.1 miles north of Laguna Bell Substation and approximately 2.4 miles southwest of Mesa Substation. The City of Commerce is bordered by the unincorporated community of East Los Angeles to the north, the City of Bell Gardens to the south, the cities of Montebello and Pico Rivera to the east, and the cities of Vernon and Maywood to the west. Land uses surrounding the proposed 220 kV tower replacement include a Union Pacific rail line to the north, an SCE ROW to the south, and industrial uses to the east and west.

Within the City of Bell Gardens, a distribution source line connecting three existing street lights would be converted from an overhead to underground configuration approximately 0.2 mile south of Laguna Bell Substation. The City of Bell Gardens is bordered by the City of Commerce to the north, the City of Southgate to the south, the City of Downey to the east, and the cities of Bell and Cudahy to the west. Land uses surrounding the proposed underground conversion include an SCE area of use to the north and south and residential uses to the east and west.

The installation of a temporary 220 kV line loop-in at Goodrich Substation would be located in the City of Pasadena. The City of Pasadena is located approximately 10 miles northeast of downtown Los Angeles and is bordered by the San Gabriel Mountains to the north. The city is the largest in the San Gabriel Valley and is surrounded by the cities of La Cañada-Flintridge, South Pasadena, Arcadia, Sierra Madre, San Marino, Glendale, and Los Angeles, as well as the unincorporated community of Altadena. Land uses surrounding Goodrich Substation include vacant/undeveloped land and a parking lot to the north, Interstate (I-) 210 and East Foothill Boulevard to the south, the Pasadena City College Community Education Center to the east, and residential uses to the west.

3.1 DRIVING DIRECTIONS

The existing Mesa Substation can be accessed by traveling north on I-5. Exit on Telegraph Road, turn left on Telegraph Road, turn right on Garfield Avenue, turn right on Via Campo, turn left on East Markland Drive, and turn right on Potrero Grande Drive. Continue approximately 0.5 mile on Potrero Grande Drive, and Mesa Substation is on the right. Goodrich Substation can be

accessed by traveling north on I-5. From I-5, take the SR-57 north exit, and follow signs to I-210 west. Then take the I-210 west exit at Madre Street, turn right on Sierra Madre Villa Avenue, and turn left on East Foothill Boulevard. Continue approximately 0.25 mile, and Goodrich Substation is on the right.

3.2 PROJECT COMPONENTS

The following subsections provide a description of the transmission, subtransmission, distribution, and telecommunications line work associated with the Proposed Project. The transmission lines would be installed in existing SCE ROWs, franchise locations, and SCE-owned property.

3.2.0 500/220 kV Transmission Lines

The Proposed Project would include the following 500 kV transmission line elements:

- Removal of an existing overhead portion of the Mira Loma-Vincent 500 kV Transmission Line, including up to four existing lattice steel towers (LSTs)

- Loop-in the existing overhead, single-circuit Mira Loma-Vincent 500 kV Transmission Line into the new 500 kV switchrack. The existing overhead transmission line alignment to Mesa Substation would be realigned with up to three new LSTs, resulting in the Mesa-Mira Loma and Mesa-Vincent 500 kV transmission lines

The Proposed Project would include the following 220 kV transmission line elements:

- Removal of portions of the existing overhead 220 kV transmission lines, including approximately 35 existing single- and double-circuit LSTs and approximately four tubular steel poles (TSPs)

- Loop-in of the existing overhead Goodrich-Laguna Bell and Laguna Bell-Rio Hondo 220 kV transmission lines into the new 220 kV switchrack by constructing new overhead getaways—supported by new and replacement double-circuit LSTs—from the existing transmission line alignment to Mesa Substation

- Relocation of eight existing overhead 220 kV transmission lines into the new 220 kV switchrack by constructing new overhead getaways—supported by approximately 25 new double-circuit LSTs and approximately six new single- or double-circuit TSPs—from the existing transmission line alignment to Mesa Substation

Replacement of an existing 220 kV LST with a new 220 kV LST to increase the capacity rating of the existing Goodrich-Laguna Bell (future Laguna Bell-Mesa No. 1)-Redondo 220 kV Transmission Line

3.2.1 66 kV Subtransmission Lines

The Proposed Project would include the following 66 kV subtransmission line elements:

- Relocation of 16 overhead 66 kV subtransmission lines into the new 66 kV switchrack with new underground getaways, which would involve the following:
  - the removal of existing overhead structures
  - the installation of new underground line segments in new duct banks and vault structures
  - the installation of new overhead line segments supported by single- and double-circuit TSPs and light-weight steel (LWS) poles

3.2.2 Distribution Lines

The Proposed Project would include the following distribution line elements:

- Relocation of five existing underground 16 kV distribution lines into the new 16 kV switchracks with new underground getaways
- Conversion of a portion of an existing distribution street light source line from an overhead to underground configuration between three street lights

Within the proposed Mesa Substation, five initial 16 kV distribution circuits would be placed in an underground conduit system. At ultimate build-out, the proposed substation could accommodate 12 kV distribution circuits. Additional electrical distribution circuits would be constructed from the proposed substation to areas of demand on an as-needed basis and with consideration of the following guidelines:

- The location of the current load growth
- Existing electrical distribution facilities in the area
- The location of roads and existing SCE ROWs

3.2.3 Telecommunications Lines

Telecommunications infrastructure, which includes DC power, light wave, data, and channel equipment, would be added to connect the Proposed Project to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, physical and cyber security, and telephone voice services for the Proposed Project and 20 associated facilities. The Proposed Project would include the following telecommunications line elements:

- Relocate existing overhead and underground telecommunications lines, including telecommunications structures, from the existing Mesa Substation to its point of termination within the proposed Mesa Substation footprint, which would include the use of approximately five existing vaults and one existing manhole

- Install new telecommunications lines between transmission tower M40- T3—near the intersection of San Gabriel Boulevard and Darlington Avenue in the City of Rosemead—and Mesa Substation, including the use of existing manholes and utility poles

- Install new telecommunications lines overhead and in existing and new underground conduits between transmission tower M38-T5—near Durfee Avenue in unincorporated Los Angeles County—and Mesa Substation, including the use of two new manholes, and existing manholes and utility poles

- Install new telecommunications lines overhead and in existing and new underground conduits between Mesa Substation and the intersection of Montebello Boulevard and Lincoln Avenue near Harding Substation, including the use of existing manholes and utility poles

- Remove an existing overhead and underground portion of a telecommunications line between Mesa Substation and an existing splice location in an existing manhole at the intersection of Montebello Boulevard and Lincoln Avenue

- Reroute telecommunications lines within Pardee Substation, Vincent Substation, and Walnut Substation to satisfy diversity requirements

- Relocate privately owned cellular towers and antennas to the northeast corner of the Mesa Substation property

- Install a foundation for a potential future microwave tower within the walled portion of the proposed Mesa Substation

3.2.4 Poles/Towers

500/220 kV Transmission Poles/Towers

The 500 kV transmission route and portions of the 220 kV routes of the Proposed Project would utilize LSTs. Approximately 29 LSTs would be installed for the Proposed Project. The LSTs would have an approximately minimum footprint of 28 feet by 28 feet and a maximum footprint of 48 feet by 48 feet and would extend approximately 113 feet to 200 feet aboveground. Each LST would be attached to four concrete foundations that would be 3 to 7 feet in diameter and would extend underground to a depth of 30 to 60 feet with 1 foot to 4 feet of concrete visible aboveground. The foundations for the 29 LSTs would require up to approximately 200 cubic yards (CY) of concrete or 5,800 CY of concrete total.

Approximately six TSPs would be installed for the 220 kV transmission portion of the Proposed Project. The TSPs would be 3 to 7 feet in diameter at the base and would extend 100 to 180 feet aboveground. The TSPs would be attached to concrete foundations that would be 5 to 7 feet in diameter and would extend underground approximately 30 to 60 feet with up to approximately 2 feet of concrete visible aboveground. Each TSP would use approximately 88 CY of concrete, or 696 CY of concrete total. The TSPs would be steel structures with a dulled finish.

Transmission facilities would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006) where feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with *Reducing Avian Collisions with Power Lines: The State of Art in 2012* (APLIC 2012).

66 kV Subtransmission Poles/Towers

Approximately 24 TSPs would be installed for the subtransmission portion of the Proposed Project. The TSPs would be 3 to 5 feet in diameter at the base and extend 50 to 100 feet aboveground. The TSPs would be attached to concrete foundations that would be 5 to 7 feet in diameter and would extend underground 20 to 40 feet with up to 4 feet of concrete visible aboveground. Each TSP would use 14 to 63 CY of concrete. The TSPs would be steel structures with a dulled finish.

The 66 kV subtransmission structures would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

Telecommunications Poles/Towers

The telecommunications system cables would utilize existing wood poles, LWS poles, and LSTs, and would range in height from 52 to 79 feet aboveground. In addition, up to 46 existing wood poles would be replaced as part of the Proposed Project, depending on the results of wind-load testing. The wood poles would be 1.2 to 2 feet in diameter at the base and extend 52 to 79 feet aboveground.

3.2.5 Conductor/Cable

The following subsections describe the aboveground and underground installation of the transmission, subtransmission, distribution, and telecommunications lines.

Aboveground Installation

The 500 kV transmission lines would be installed on LSTs and the 220 kV transmission lines would be installed on LSTs and TSPs. The 500 kV LSTs would support a two-conductor bundle of non-specular 2,156 kcmil[1] aluminum-clad steel reinforced (ACSR) conductors, and the 220 kV LSTs and TSPs would support a two-conductor bundle of non-specular 1,590 kcmil ACSR conductor. The average span length between towers would be approximately 600 feet.

The aboveground 66 kV transmission lines would be installed on single- or double-circuit TSPs. The 66 kV TSPs would support non-specular 954 kcmil stranded aluminum copper conductor. The average span length between TSPs would be approximately 180 feet.

The telecommunications cable would be installed on existing wood poles, LWS poles, and LSTs. These structures would support 0.5-inch-diameter fiber optic cable. The lowest cable would be 20 to 30 feet above the ground. The average span length between overhead structures would be 150 to 200 feet.

The distribution lines would be installed entirely underground.

[1] kcmil (1,000 circular mils [cmils]) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of cmils. A cmil is the area of a circle with a diameter of 0.001 inch.

Below-Ground Installation

The Proposed Project would include the installation of approximately 5.5 miles of underground subtransmission lines in new duct banks, ranging in length from 800 to 3,300 feet outside of the substation perimeter, with approximately 28 vaults.[2] The duct banks would consist of six 5-inch conduits, conduit spacers, and concrete.

The Proposed Project includes the installation of approximately 2.9 miles of underground telecommunications cable in existing and new underground duct banks. The approximately 2-foot-wide by 1,600-foot-long by 3-foot-deep newly installed duct banks would consist of approximately 5-inch conduits, conduit spacers, and concrete. In addition, approximately 9,400 feet of existing underground duct banks would be utilized. The Proposed Project would utilize approximately 18 existing vaults and three new vaults measuring approximately 5 feet wide by 5 feet long by 6 feet deep.

The Proposed Project would include the installation of approximately 1 mile of underground distribution lines in new duct banks. The duct banks would measure, at a minimum, 2 feet wide by 4.5 feet deep and would consist of approximately 24 5-inch conduits, conduit spacers, and concrete. Five new vaults would be installed, measuring approximately 7 feet wide by 18 feet long by 8 feet deep.

3.2.6 Substations

Substation Parking Areas

The control building would include associated parking.

Substation Perimeter

The proposed Mesa Substation would be enclosed on all sides by a perimeter wall measuring at least 10 feet in height. Barbed wire and/or razor wire would be affixed near the top of the perimeter enclosure inside of the substation and would not be visible from the outside.

Mesa Substation

The main activity associated with the Proposed Project involves the construction of the proposed, approximately 69.4-acre, 500/220/66/16 kV Mesa Substation and demolition of the existing, approximately 21.6-acre 220/66/16 kV Mesa Substation on SCE fee-owned property. The proposed 500/220/66/16 kV Mesa Substation would be a staffed substation operating at 3,360 megavolt-ampere (MVA) with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV. The existing Mesa Substation occupies approximately 21.6 acres and is located within the same approximately 69.4-acre property that the proposed Mesa Substation would be constructed.

[2] There would be a total of 28 vaults for the Proposed Project: 13 within the approximately 69.4-acre substation site and 15 outside of the substation site.

Modifications to Existing Substations

Goodrich Substation

The Proposed Project would require the temporary loop-in of the Eagle Rock-Mesa 220 kV Transmission Line into Goodrich Substation to provide a second line of service to the City of Pasadena during the loop-in of the Goodrich-Laguna Bell 220 kV Transmission Line into the proposed Mesa Substation. This would require the construction of a temporary tower, which would be removed once the Goodrich-Laguna Bell 220 kV Transmission Line is energized at the proposed Mesa Substation. An approximately 1.5-acre staging yard would be established north of the existing Goodrich Substation site.

3.3 RIGHT-OF-WAY REQUIREMENTS

The Proposed Project would be located on SCE existing or to-be-acquired fee-owned property, existing SCE ROWs, and franchise locations. Upon final engineering and receipt of Proposed Project approvals, SCE would confirm the necessary land rights and acquire any additional land rights required for the Proposed Project.

3.4 CONSTRUCTION

The following subsections describe the construction activities associated with the Proposed Project.

3.4.0 Staging Areas

Construction of the Proposed Project would require the establishment of temporary staging yards. Typically, two types of staging yards would be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards would be used as a reporting location for workers, as well as vehicle and equipment parking and material storage. The yards may also have construction trailers for supervisory and clerical personnel. Staging yards may be lit for staging and security. Normal maintenance and refueling of construction equipment would also be conducted at these yards. All refueling and storage of fuels would be in accordance with the Storm Water Pollution Prevention Plan (SWPPP) issued for the Proposed Project.

SCE anticipates using one or more of the possible locations listed in Table 1: Potential Staging Yard Locations, as the staging yard(s) for the Proposed Project. Typically, each yard would be 5 to 25 acres in size, depending on land availability and intended use. Preparation of the staging yard would include temporary perimeter fencing and, depending on existing ground conditions at the site, grubbing and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock. Any land that may be disturbed at the staging yard would be returned to pre-construction conditions or left in its modified condition.

Work Areas

Transmission and subtransmission construction work areas serve as temporary working areas for crews and where Proposed Project-related equipment and/or materials are placed at or near each structure location, within SCE property, existing ROWs, or franchise areas. Table 2:

Approximate Laydown/Work Area Dimensions identifies the approximate dimensions of land disturbance for these Proposed Project construction areas.

Table 1: Potential Staging Yard Locations

Yard Name	Location	Condition	Approximate Area (Acres)	Proposed Project Component
Material Staging Yard 1	Northwest of the intersection of Potrero Grande Drive and Saturn Drive	Disturbed	5.7	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 2	Southwest of the intersection of Via Campo and North Vail Avenue	Portions Disturbed and Undisturbed	3.8	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 3	Southeast of the intersection of Potrero Grande Drive and Greenwood Avenue	Disturbed	23.9	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 4	North of Goodrich Substation	Disturbed	1.5	Temporary 220 kV line loop-in at Goodrich Substation

The new structure pad locations and laydown/work areas would first be cleared of vegetation and/or graded as required to provide a reasonably level and vegetation-free surface for structure installation. Sites requiring grading 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.

Erection of the structures may also require establishment of a temporary crane pad. The crane pad would occupy an area of approximately 50 feet by 50 feet and 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. The decision to use a separate crane pad would be determined during final engineering and selection of the appropriate construction methods to be used by SCE or its contractor.

Access Roads and/or Spur Roads

Where required, a network of existing access roads could be improved and new roads would be constructed in accordance with current SCE road practices to support the construction and O&M of the Proposed Project.

Table 2: Approximate Laydown/Work Area Dimensions

Laydown/Work Area Feature	Preferred Size (L x W) (Feet)
Transmission Guard Structures	150 x 50
Subtransmission Guard Structure	75 x 50
Lattice Steel Towers	220 x 220
Tubular Steel Poles	220 x 150
Lightweight Steel (LWS) H-Frame	175 x 125
LWS Pole	175 x 100
Transmission Conductor Stringing	600 x 150
Subtransmission Conductor Stringing	300 x 100
Transmission Conductor Splicing	200 x 150
Underground Duct Bank (Unpaved)	13,000 x 30
Underground Duct Bank (Paved)	5,000 x 3
Underground Vaults (Unpaved)	100 x 100
Underground Vaults (Paved)	20 x 30

Note: The dimensions listed in this table are preferred for construction efficiency; actual dimensions may vary depending on Proposed Project constraints.

Typical transmission access consists of a network of unpaved and paved roads accessed from public and private roads located on public and private lands. These access roads include a network of through roads and spur roads that are used to access transmission facilities. Access to the transmission line ROW for construction activities and future O&M activities associated with the Proposed Project would be accomplished by utilizing this network of roads.

During construction of the Proposed Project, crews would utilize existing public roads and existing transmission access roads to the maximum extent feasible. New access roads would be constructed in accordance with current SCE practices for safety during construction and O&M. Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities.

Typical construction activities associated with rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities in order to provide a riding surface that is capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Typical construction activities associated with new roads generally include similar activities as described for the rehabilitation of existing unpaved roads, but may also include the following additional construction requirements that depend upon the existing land terrain:

- Existing relatively flat terrain with grades up to 4 percent: Construction activities are generally similar to rehabilitation activities on existing unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, water bars, and culverts). Detailed information on locations requiring drainage improvements would be provided during final engineering.

- Existing rolling terrain with grades of 5 to 12 percent: Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements (e.g., geogrid reinforcement). The extent of retaining walls and slope stability improvements would be determined during final engineering, as would detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.

- Existing mountainous terrain with grades over 12 percent: Construction activities would include rolling terrain construction activities and would also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements would be provided during final engineering.

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements and earth-retaining structures would be determined during final engineering.

Generally, access roads would have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width would be widened and would generally range up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients would be leveled so that sustained grades generally do not exceed 14 percent. Curves would typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where a 50-foot minimum radius cannot be achieved.

Access roads would typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration would be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as an equipment pad set-up area for

construction activities. If an equipment pad is built, it would remain a permanent feature for O&M.

The Proposed Project access roads generally follow the proposed transmission line route. Transmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites.

Approximately 5.6 miles of existing, dirt access on SCE property and existing ROWs would be used to access the Proposed Project work areas. It is not anticipated that these roads would require improvements; however, if improvements are required, they would be conducted in accordance with existing O&M practices.

Helicopter Access

Helicopters would be used to support construction activities. Specifically, SCE currently anticipates helicopters would be utilized during conductor stringing activities for the 500 kV and 220 kV transmission lines. SCE would consider Institute of Electrical and Electronics Engineers (IEEE) Standards 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*, in the construction of the Proposed Project. For the Proposed Project, helicopters be based at an existing aviation facility and fly to the site from that location. Helicopters may use the potential staging yard locations as needed.

Helicopter operations and support areas typically include helicopter staging and material yards, storage and maintenance sites, and ground locations in close proximity to conductor pulling, tensioning, and splice sites and/or within previously disturbed areas near construction sites. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during off days, for safety and security concerns, helicopters and their associated support vehicles and equipment may be based at a local airport(s).

Helicopters typically used for stringing activities would include a Hughes 500 F. Helicopters would be based out of the El Monte and Chino airports, where refueling would occur.

Vegetation Clearance

The proposed Mesa Substation site would require vegetation clearing within its boundaries—including tree and brush removal—to prepare the approximately 69.4-acre site for installation of the substation equipment.

Vegetation clearing—including tree and brush removal and tree trimming—may also be required in the transmission ROWs to accommodate construction work areas and to reduce the potential for fire during construction activities.

Erosion and Sediment Control and Pollution Prevention during Construction

Storm Water Pollution Prevention Plan

Construction of the Proposed 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. Commonly used best management practices (BMPs) are storm water runoff quality control measures (boundary protection), dewatering procedures, and concrete waste management. The SWPPP would be based on final engineering design and would include all Proposed Project components.

Dust Control

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the South Coast Air Quality Management District. These measures may include the use of water trucks and other dust control measures.

Hazardous Materials

Construction of the Proposed Project would require the 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. Material Safety Data Sheets would be made available at the construction site for all crew workers.

Based on the anticipated volume of hazardous liquid materials, such as mineral oil, in use at the site being in excess of 1,320 gallons, a Spill Prevention, Control, and Countermeasure Plan is in place for the site and would be updated (in accordance with Tile 40, Parts 112.1 to 112.7 of the Code of Federal Regulations [CFR]).

Reusable, Recyclable, and Waste Material Management

Construction of the Proposed Project would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (portable toilets). Sanitation waste (i.e., human-generated waste) would be disposed of in accordance with applicable sanitation waste management practices. Material from existing infrastructure that would be removed as part of the Proposed Project such as conductor, steel, concrete, and debris, would be temporarily stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal.

The existing wood poles removed for the Proposed Project would be returned to a staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a Regional Water Quality Control Board-(RWQCB-) certified municipal landfill.

Material excavated for the Proposed Project would either be used as fill and/or disposed of offsite at an appropriately licensed waste facility. If 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.

Cleanup and Post-Construction Restoration

SCE would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (which may include the material staging yards, stringing sites, and splicing sites) 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 of the Proposed Project.

If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

3.4.1 Substation Construction

Site Preparation and Grading

Approximately 83 acres of the Mesa Substation site would be graded and on-site vegetation on 20 acres would be removed, including trees surrounding the existing Mesa Substation site. Clearing and vegetation removal activities would be accomplished through the use of mowers, excavators, front-end loaders, and/or D-9 bulldozers.

One of the first activities at the proposed Mesa Substation would be to construct the new driveway from East Markland Drive to be utilized as the secondary driveway after energization. The access roads from this driveway would be graded flat to a width of approximately 30 feet to allow for safe operation of construction equipment and delivery of materials. The primary driveway from Potrero Grande Drive would be established once construction activities within the existing Mesa Substation begin. Once the access driveways are constructed, rolling gates would be installed to control access to the site.

Construction of the proposed Mesa Substation would occur in phases. Initial construction activities, including access road construction, would occur in the area of the proposed substation site outside of the existing substation fence. As the new substation equipment is constructed and the new power line alignments are tied into the switchracks, the equipment at the existing substation would be removed and the site would be graded for installation of the new switchracks and associated equipment.

Once the new power line alignments are tied into the new switchracks, construction crews would decommission the site of its existing use. This process would involve removing the existing materials stored around the existing substation site, and eventually the equipment within the existing substation. The proposed Mesa Substation site would be overexcavated, and the on-site soil would be recompacted to prepare the area for site development and remedial grading would ensue. The site development and remedial grading would be based on the recommendations of the geotechnical investigation that achieves the desired on-site pad elevation and foundation support while maintaining adequate site drainage. Approximately 650,000 CY of on-site soil would be overexcavated during the decommissioning process. These activities are anticipated to generate approximately 100,000 CY of material for off-site disposal. Approximately 550,000 CY of structural fill would be required to raise the substation site to the conceptual design elevation, which ranges from 280 to 375 feet above mean sea level. Approximately 60,000 CY of imported Class II base material would be used for the surfacing of Mesa Substation and for the access roads. On-site material would be reused to the extent possible, as recommended by the Geotechnical Engineer. Site grading would be accomplished primarily with bulldozers and backhoes, which would condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. A summary of the anticipated grading quantities for Mesa Substation is provided in Table 3: Substation Cut and Fill Grading Summary.

Table 3: Substation Cut and Fill Grading Summary

Element	Material	Approximate Surface Area (Square Feet)	Approximate Volume (CY)
Site Grading, Cut	Dirt	1,800,000	650,000
Site Grading, Fill	Selected Fill Material/Borrow	2,000,000	550,000
Site Grading, Net	Not Applicable (N/A)	200,000	-100,000
Internal Driveways, Spoils, Net	Dirt	650,000	50,000
Substation Equipment Foundations, Spoils, Cut	Dirt	184,500	25,000
Cable Trench, Spoils Cut	Dirt	45,000	5,000
Drainage Structure, Spoils, Cut	Dirt	5,500 linear feet	1,500
Wall foundation, Spoils, Cut	Dirt	14,000 linear feet	1,400

The initial construction of Mesa Substation would require approximately 100,000 CY—or approximately 10,000 haul truckloads—of imported fill to develop the substation site. The final phase would have approximately 200,000 CY—or approximately 20,000 haul truckloads—of cut material to be exported from the new substation site. Haul trucks would operate periodically, as needed, during the grading phase of construction. In general, no more than 100 truck trips per day for an estimated three to five months would be required to complete the initial phase grading, and no more than 100 truck trips per day for an estimated four to six months would be required to complete the final phase grading. In addition, approximately 20 additional trips per day are anticipated for the delivery of materials and equipment for the duration of construction.

SCE would prepare and implement a drainage plan to minimize surface water and erosion impacts. The substation pad area, which would be raised so that the finished surface of the pad is at a higher elevation than the surrounding area, would be finish-graded from a high point elevation at the center of the pad to the perimeter at a slope of approximately 1 percent. The surrounding area would be regraded and the low points would be filled to provide positive surface drainage to the southwest. Currently, the property generally drains by sheet flow to ephemeral drainages the southwest corner of the site. These ephemeral drainages connect to storm drains that connect to the Rio Hondo Channel, which flows into the Los Angeles River. A retention basin would be constructed in the southwest corner of the proposed substation site and channels would be constructed along the perimeter of the substation to direct the surface runoff to the retention basin.

The permanent cut and fill slopes for the proposed Mesa Substation and the permanent cut and fill for the access roads and retention basin would be stabilized during construction with BMPs that would be described in the Proposed Project SWPPP. Landscaping would also be installed around the perimeter of the proposed substation site. SWPPP BMPs would remain in place and would be maintained until the landscaping has been established.

Ground Surface Improvements

The surface of the substation would be overlain with gravel and the access driveways would be paved. Table 4: Substation Ground Surface Improvement Materials provides a summary of the ground surface improvements at the substation site.

Table 4: Substation Ground Surface Improvement Materials

Element	Material	Approximate Surface Area (Acres)	Approximate Volume (CY)
Access Road Surface Area	Asphalt and/or concrete	19	15,000
Gravel Surfacing	Gravel	52	30,000

Below-Grade Construction

After the substation site is graded, below-grade facilities would be installed. Below-grade facilities include, for example, a ground grid, cable trenches, equipment foundations, substation perimeter foundations, conduits, duct banks, vaults, and basements.

Above-Grade Construction

Above-grade installation of substation facilities such as buses, capacitor banks, switchracks, disconnect switches, circuit breakers, transformers, steel support structures, perimeter wall, the Mechanical Electrical Equipment Room, and the control building would commence after the below-grade structures are in place.

The transformers would be delivered by heavy-transport vehicles and installed on the transformer foundation.

Modifications at Other Facilities

The equipment at the existing Mesa Substation would be removed in stages as the transmission, subtransmission, distribution, and telecommunications lines are transferred to the proposed Mesa Substation components. Upon completion of construction, the area occupied by the existing substation would be occupied by the new substation components.

Modifications at Goodrich Substation may require a temporary loop-in of the Eagle Rock-Mesa 220 kV Transmission Line, which would include installation of a temporary structure, with an approximate height of 110 to 145 feet, and conductor to loop the Eagle Rock-Mesa 220 kV Transmission Line into an existing Goodrich Substation rack position.. The work area for the tower would be approximately 220 by 220 feet, and a staging yard would be established, as detailed in Table 1: Potential Staging Yard Locations.

Land Disturbance Summary

Land disturbance would include all areas affected by construction of the Proposed Project. It is estimated that the total permanent land disturbance for the Proposed Project would be

approximately 76.7 acres. It is estimated that the Proposed Project would temporarily disturb approximately 147.9 acres.

3.4.2 Transmission Line Construction (Above-Ground)

The following subsections describe the above-ground construction activities associated with installing the transmission, subtransmission, distribution, and telecommunications line segments for the Proposed Project.

Pull and Tension Sites[3]

The pulling, tensioning, and splicing set-up locations associated with the Proposed Project would be temporary and the land would be restored to its previous condition following the completion of pulling and splicing activities. The set-up locations require level areas to allow for maneuvering of the equipment and, when possible, these locations would be located on existing roads and level areas to minimize the need for grading and cleanup. Approximately 40 set-up locations are currently proposed. The final number and location of these sites would be determined upon final engineering. The approximate area needed for stringing set-ups associated with wire installation is variable and depends on the terrain. Table 2: Approximate Laydown/Work Area Dimensions provides the approximate dimensions of pulling, tensioning, and splicing equipment set-up areas and laydown areas.

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 5,000 feet for transmission lines, every 6,000 to 8,000 feet for subtransmission lines, and every 7,500 to 9,000 feet for wire splices on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is typically 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.

Telecommunications Pull and Tensions Sites

The average distance between telecommunications pull and tension sites would be approximately 5,000 feet. The telecommunications pull and tension sites would be approximately 20 feet by 100 feet, or approximately 0.05 acre. The Proposed Project would require the use of approximately 19 telecommunications pull and tension sites on SCE property, existing ROWs, franchise locations, the Mesa Substation site, and the SCE Montebello Service Center. Equipment used to pull the telecommunications line would be similar to the equipment described previously for the transmission and subtransmission lines. When existing cable is replaced, flat-bed trucks would haul the old cable off site for disposal or recycling.

[3]The term “pull and tension site” is synonymous with the term “stringing site.”

Temporary Shoo-Flies

A shoo-fly is a temporary power line that is installed during construction to maintain electrical service to the area while allowing portions of a permanent line to be taken out of service, ensuring safe working conditions during construction activities. Three shoo-flies would be utilized during construction. Each shoo-fly would be removed after construction is completed, as described in more detail in the following paragraphs.

One shoo-fly would be installed during the realignment of the 72-inch Metropolitan Water District of Southern California pipeline for the Laguna Bell-Rio Hondo 220 kV circuit. Another shoo-fly would also be installed for the Mesa-Vincent No. 1 220 kV circuit to ensure sufficient supply is maintained at Mesa Substation and other affected substations during construction. A third shoo-fly would be utilized at Goodrich Substation to facilitate the 220 kV line loop-in.

Pole Installation and Removal

Construction crews and equipment would travel to the pole site locations using public roads and new and existing access roads. Section 3.4.4 Equipment Description describes the anticipated equipment and workforce required for the Proposed Project.

Pole and Foundation Removal

The Proposed Project would involve removing structures, conductor, and associated hardware. This work is proposed in the following sequence:

- Road work – Existing access roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish temporary crane pads for structure removal, etc.

- Wire-pulling locations – Wire pulling sites would be located every 4,000 to 5,000 feet for transmission lines and every 6,000 to 8,000 feet for subtransmission lines along the existing utility corridor, and would include locations at dead-end structures and turning points.

- Conductor removal – SCE would remove existing conductors in a method similar to the reverse of the conductor installation process. The old conductor would be transported to a construction yard, where it would be prepared for recycling.

- Structure removal – Structures would be dismantled down to the foundations and the materials would be transported to a construction yard, where they would be prepared for recycling.

- Footing/foundation removal – Footings would be removed to a point 1 to 2 feet below grade and the holes would be filled with excess soil and smoothed to match the surrounding grade. Footing materials would be transported to a construction yard where they would be prepared for disposal.

Any existing transmission lines, subtransmission lines, distribution lines, and telecommunications lines (where applicable) would be transferred to the new structures prior to

removal of existing structures. Any remaining facilities that are not reused by SCE would be removed and delivered to a facility for disposal.

The existing wood poles would be completely removed once the subtransmission and telecommunications lines are transferred to the new poles. The removal would consist of the above-ground and below-ground portions of the pole. 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.

Top Removal

Top removal at one pole location would be conducted as part of the Proposed Project.

Pole/Tower Installation

Foundation Installation

Lattice Steel Structure

Structure foundations for each LST would consist of four poured-in-place concrete footings. Actual footing diameters and depths for each of the structure foundations would depend on the soil conditions and topography at each site and would be determined during final engineering.

The foundation process begins with the drilling of the holes for each type of structure. The holes would be drilled using truck or track mounted excavators with various diameter augers to match the diameter requirements of the structure type. LSTs typically require four excavated holes approximately 3 to 7 feet in diameter at approximately 30 to 60 feet deep. On average, each footing for an LST structure would protrude approximately 1 to 4 feet above ground level.

The excavated material would be distributed at each structure site, used to backfill excavations from the removal of nearby structures (if any) and/or used in the rehabilitation of existing access roads. Alternatively, the excavated soil may be disposed of at an off-site disposal facility in accordance with applicable laws.

Following excavation of the foundation footings, steel-reinforced rebar cages would be set, survey positioning would be verified, and concrete and stub angles would then be placed. Steel-reinforced rebar cages and stub angles may be assembled at staging yards and delivered to each structure location by flatbed truck or assembled at the job site. Depending upon the type of structure being constructed, soil conditions, and topography at each site, LSTs would require approximately 200 CY of concrete delivered to each structure location.

Slight to severe ground caving is anticipated along the preferred route during the drilling of the LST foundations due to the presence of loose soils. The use of water, fluid stabilizers, drilling mud, and/or casings would be made available to control ground caving and to stabilize the sidewalls from sloughing. If fluid stabilizers are utilized, mud slurry would be added in conjunction with the drilling. The concrete for the foundation is then pumped to the bottom of the hole, displacing the mud slurry. Mud slurry brought to the surface is typically collected in a pit adjacent to the foundation and/or vacuumed directly into a truck to be reused or discarded at an off-site disposal facility in accordance with all applicable laws.

Tubular Steel Pole

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 with various diameter augers to match the diameter requirements of the structure foundation. Following excavation of the foundation footings, steel-reinforced cages would be set, positioning would be survey-verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility TSP foundations typically require an excavated hole approximately 5 feet to 9 feet in diameter at approximately 30 feet to 60 feet deep. TSPs would require approximately 88 CY of concrete delivered to each structure location.

LST Installation

LSTs would be assembled within the construction areas at each tower site. Structure assembly begins with the hauling and stacking of steel bundles, per engineering drawing requirements, from a staging yard to each structure location. This activity requires use of several trucks with 40-foot trailers and a rough terrain forklift. After steel is delivered and stacked, crews would proceed with assembly of leg extensions, body panels, boxed sections, and the cages/bridges. Assembled sections would be lifted into place with a crane and secured by a combined erection and torquing crew. When the steel work is completed, the construction crew may opt to install insulators and wire rollers (travelers).

TSP Installation

TSPs typically consist of multiple sections. The pole sections would be placed in temporary laydown areas at each pole location. Table 2: Approximate Laydown/Work Area Dimensions describes the approximate laydown dimensions. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or may be configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware. A crane would then 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 subsequent section of the TSP would be slipped into place on the base section. The pole sections may also be spot welded together for additional stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure prior to setting the poles.

Wood Pole Installation

No new wood poles would be installed as part of the Proposed Project; however, up to 46 wood poles may need to be replaced for the new telecommunications lines proposed to be installed depending on the results of wind-load testing. Each wood pole would require a hole to be excavated using an auger, backhoe, or hand tools. 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 reconfigured) with the necessary cross arms, insulators, and wire stringing hardware before being set in place. The wood poles would then be installed in the holes, typically by a line truck with an attached boom. Wood guy stub poles would be installed similarly to wood poles.

Conductor/Cable Installation

Aboveground

Wire stringing activities would be in accordance with SCE common practices and 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, guard structures, radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished.

Wire stringing includes all activities associated with the installation of the primary conductors onto transmission line structures. These activities include the installation of conductor, overhead ground wire/overhead optical 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.

Below Ground

Following vault and duct bank installation, SCE would pull the electrical cables through the duct banks, splice the cable segments at each vault, and terminate the cables at the transition structures where the subtransmission line 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 linked to the pulling rig, which would pull the rope and the 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 polyvinyl chloride (PVC) conduits. The electrical cables for the 66 kV subtransmission line would typically be pulled through the individual conduits in the duct bank at a rate of two to three segments between vaults per day.

Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings for wire stringing/removal activities. These structures are designed to stop the movement of a conductor should it momentarily drop below a conventional stringing height. SCE estimates that 35 guard structures may need to be constructed along the proposed route.

Typical guard structures are standard wood poles. Depending on the overall spacing of the conductors being installed, approximately two to four guard poles would be required on either side of a crossing. In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place.

For road crossings, SCE would work closely with the applicable jurisdiction to secure the necessary permits to string conductor over the applicable infrastructure.

3.4.3 Transmission Line Construction (Below Ground)

Trenching

Subtransmission Trenching

The Proposed Project includes a total of approximately 5.5 miles of new underground 66 kV subtransmission lines and associated transition and support structures. A trench measuring 24 inches wide and approximately 60 inches deep 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. Trenching may 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 appropriate depth with a backhoe or similar equipment, and install the new duct bank. Once the duct bank has been installed, the trench would typically be backfilled with a sand slurry mix. Excavated materials would be reused as fill for the Proposed Project and/or be disposed of at an off-site disposal facility in accordance with applicable laws if necessary. Should groundwater be encountered, it would be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

Subtransmission Vault Installation

Installation of each vault would typically take place over a one-week period depending on soil 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, would be used to backfill the remainder of the excavation and any excess spoils would be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area would be restored as required.

Fiber Optic Installation

New underground conduit and structures would typically be installed with a backhoe. The trench would be excavated to approximately 24 inches wide and a minimum of approximately 36 inches deep. PVC conduit would be placed in the trench and covered with approximately 30 inches of concrete slurry then backfilled and compacted. For manholes and pull boxes, a hole is excavated between approximately 6 to 9 feet deep, 7 to 8 feet long, and 6 to 7 feet wide. The manhole or pull box would be lowered into place, connected to the conduits, and the hole backfilled with concrete slurry.

Trenchless Techniques

Unless alternate methods are required to cross existing facilities or sensitive resources, duct banks would be installed using open-cut trenching techniques. In the event that trenchless techniques are required, SCE would utilize one of the methods described in the following subsections.

Jack-and-Bore

SCE would use the horizontal jack-and-bore construction technique to install the conduit at locations along the underground route where open-cut trenching may not be permitted or may not be otherwise feasible or preferred, such as at railroad and trolley tracks, roads, and drainage channel crossings.

Horizontal boring (jack-and-bore) is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations would begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits would typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits would be between 10 and 20 feet, depending on the facilities that would be crossed. It is anticipated that between 590 and 1,180 CY of material would be excavated to facilitate each jack-and-bore installation required for the Proposed Project. Following the duct bank installation, the bore pits would be backfilled using native material, and the duct bank would be covered with at least 36 inches of engineered or native fill, as appropriate. Soil not used for backfill would be hauled off site and disposed of at an approved facility.

After establishing the bore pits, boring equipment would be delivered to the site and then installed into the bore pit at the sending end. Jack-and-bore crossings involve pushing or boring a 36- to 42-inch steel casing through the earth and under the obstacle being crossed. Depending on soil conditions, water is often used to lubricate the auger during the boring process. The casings would typically be installed at least 3 to 4 feet below the obstacle, or as required by the relevant permitting agency. Once the casing is in place, the conduit would be installed within the casing by using spacers to hold them in place and then the remaining space would be backfilled with a slurry mix. The casings would be left in place to protect the conduit once it has been installed. An approximately 150-foot by 150-foot temporary construction area would be required at each bore pit location. SCE would secure the necessary permits to conduct these specialized construction activities and would implement standard BMPs, including silt fencing and straw wattles, in accordance with the Proposed Project's SWPPP.

Horizontal Directional Drilling

Horizontal directional drilling (HDD) technology is an underground boring technique that uses hydraulically powered, horizontal drilling equipment. It involves drilling along a vertical arc that passes beneath the intended feature. HDD technology utilizes lubrication containing water and bentonite clay (referred to as drilling mud) to aid the drilling, coat the walls of the bore hole, and maintain the open hole. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill. A 6- to 8-inch-diameter drill would typically be used.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores under the crossing. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger

cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the steel casing. Once the steel casing is in place ducts would be installed within the steel casing using spacers to maintain needed separation and then the remaining space would be backfilled with a slurry mix.

During the HDD process, the underground cable to be pulled through the crossing would be strung on cable supports down the ROW or within temporary extra workspace areas.

As part of the drilling design process, geotechnical surveys of subsurface conditions would be conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a “frac-out” and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the boring operation would be stopped immediately, and a frac-out contingency plan would be implemented to contain and remove the drilling mud.

3.4.4 Equipment Description

Table 5: Construction Equipment Description lists the equipment SCE expects to use during construction and a brief description of the use of that equipment.

3.4.5 Construction Schedule

SCE anticipates that construction of the Proposed Project would take approximately 55 months, as shown in Table 6: Proposed Construction Schedule.[4] Construction would commence following CPUC approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

3.4.6 Energizing Transmission and Subtransmission Lines

Energizing the new lines is the final step in completing the transmission and subtransmission construction. The existing transmission, subtransmission, and distribution lines would be de-energized in order to connect the new line segments to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing lines may occur at night when electrical demand is low.

4 – REGULATORY FRAMEWORK

The following subsections provide a description of the regulatory framework protecting special-status plant and wildlife species, as well as aquatic resources.

[4] The proposed construction schedule does not account for unforeseen Proposed Project delays, including but not limited to those due to inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds).

Table 5: Construction Equipment Description

Equipment Type	Use Description
Bucket Truck	Lift and transport workers
Survey Truck	Transport survey crew
Dozer	Grade pads and access roads
Loader	Move or load materials
Scraper	Grade pads and access roads
Grader	Grade substation site, pads, and access roads; ROW clearing; and restoration
Water Truck	Suppress dust
Haul Truck	Transport impact/export material
Bobcat	Excavate, move, and load materials
Foundation Auger	Drilling foundation holes
Backhoe	Excavate and load materials
Dump Truck	Transport import/export material
Bobcat Skid Steer	Move materials
Forklift	Lift and move materials
Crane	Lift and place materials
Generator	Provide power to the work area
Scissor Lift	Provide access to elevated work areas
Manlift	Set steel and install equipment
Flatbed Truck	Deliver poles and hardware
Concrete Pump Truck	Deliver and pour concrete
Asphalt Paver	Pave access roads
Tractor	Hauling materials
Helicopter	Conductor installation activities

Table 6: Proposed Construction Schedule

Proposed Project Activity	Approximate Duration (Months)	Approximate Start Date
Permit to Construct	12	March 1, 2015
Final Engineering	36	September 15, 2014
ROW/Property Acquisition	11	December 15, 2014
Acquisition of Required Permits	12	March 1, 2015
Substation Construction	55	April 11, 2016
Transmission Line Construction	48	April 18, 2016
Subtransmission Line Construction	36	April 18, 2016
Telecommunications Construction	48	April 18, 2016
Distribution Construction	36	April 18, 2016
Cleanup	4	August 1, 2020
Project Operational	N/A	December 31, 2020

4.0 SPECIAL-STATUS PLANTS

4.0.0 Definitions

Special-Status Plant Species

Special-status plant species are defined as follows:

- Plants that are listed or proposed for listing as threatened or endangered under the California Endangered Species Act (CESA) or the federal Endangered Species Act (FESA).
- Plants that are candidates for possible future listing as threatened or endangered under the CESA and FESA.
- Species that meet the definition of rare or endangered under Sections 15380(b) and (d) of the California Environmental Quality Act (CEQA). Species that may meet the definition of rare or endangered include the following:
  - species considered by the California Native Plant Society (CNPS) to be “rare, threatened or endangered in California” (California Rare Plant Rank [CRPR] 1A, 1B, and 2);
  - species that may warrant consideration on the basis of local significance or recent biological information; and

- some species included on the California Natural Diversity Database (CNDDB) Special Plants, Bryophytes, and Lichens List;

- Species considered to be locally significant species; that is, a species that is not rare from a statewide perspective, but is rare or uncommon in a local context, such as within a county or region (CEQA § 15125 [c]), or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).

- Species considered to be CNPS CRPR 3 and 4 species are also included for the purpose of this BRTR.

4.0.1 Relevant Regulations

Federal

Federal Endangered Species Act

A plant species listed as threatened or endangered under the FESA is protected from unauthorized "take" of that species when located on federal land or when a federal agency is consulting with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the FESA on protected wildlife species. Take can also be issued under Section 10 of the FESA. The definition of "take" includes to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct" (16 U.S. Code [U.S.C.] 1531). If it is necessary to take a federally listed endangered or threatened species as part of an otherwise lawful activity, it may be necessary to receive permission from the USFWS prior to initiating the take.

State

California Fish and Game Code

State Endangered Species Act

A plant species listed as threatened or endangered under the CESA (California Fish and Game Code § 2050) is protected from unauthorized "take." "Take" is defined in Section 86 of the California Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." If it is necessary to "take" a state-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the California Department of Fish and Wildlife (CDFW) prior to initiating the "take." Section 2081 allows take of a listed species for educational, scientific, or population-management purposes. Project proponents consult with the CDFW to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, and funding of implementation and monitoring of mitigation measures.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (California Fish and Game Code, §§ 1900 through 1913) directed the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. When the CESA was passed in 1984, it expanded on the original Native Plant Protection Act and enhanced legal protection for plants and created

the categories of “threatened” and “endangered” species to parallel the FESA. The CESA converted all rare animals to threatened species under the Native Plant Protection Act, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

CDFW generally regards as rare many plant species included on California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project. Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. In addition to federally or state-listed species, special-status plants receive consideration under CEQA.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC 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 county and city regulations are not applicable as they do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local biological resources regulations is provided for informational purposes only.

The following were reviewed for relevant biological resources regulations:

- the County of Los Angeles General Plan,
- the City of Monterey Park General Plan and Municipal Code,
- the City of Montebello General Plan and Municipal Code,
- the City of Rosemead General Plan,
- the City of South El Monte General Plan,
- the City of Commerce General Plan,
- the City of Bell Gardens General Plan, and
- the City of Pasadena General Plan and Municipal Code.

County of Los Angeles General Plan

The County of Los Angeles General Plan was reviewed for relevant goals and policies related to biological resources. The following goals and policies are contained in the Conservation and Open Space Element of the plan:

Goals

- To conserve energy resources and develop alternative energy sources
- To conserve water and protect water quality
- To preserve and protect prime agricultural lands, forests, fisheries, significant ecological areas and other biotic resources
- To preserve and protect sites of historical, archaeological, scenic and scientific value

Policies

- Policy 7: Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation and enhancement

- Policy 12: Protect watershed, streams, and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats, and aid in ground water recharge

Significant Ecological Areas

The County of Los Angeles General Plan describes significant ecological areas (SEAs) as lands having important biological resources. This classification includes habitats of rare and endangered species, sites with critical fish and wildlife, relatively undisturbed areas of typical natural habitat, and regionally scarce biotic resources.

County of Los Angeles Municipal Code

Chapter 22.56, Oak Tree Permit (Ord. 88-0157 § 1), of the County of Los Angeles Municipal Code was designed to preserve and maintain healthy oak trees in the development process. The Oak Tree Ordinance prohibits the cutting, destruction, removal, relocation, damage, or encroachment on (i.e., into the protected zone) of any oak tree more than 8 inches in diameter or 25 inches or greater in circumference. Oak trees with one or more trunks with a combined diameter of 12 inches or a circumference measuring 38 inches or greater are also protected under this ordinance. Damage is defined by the Oak Tree Ordinance as any act with the potential to cause injury to any parts of a tree, including, but not limited to, burning, the application of toxic substances, the operation of equipment or machinery, changing the natural grade, or trenching or excavating within the protected zone of an oak tree. The protected zone refers to the area within the dripline of a tree and extending to a point at least 5 feet outside of the dripline, or 15 feet from the trunks of the tree, whichever distance is greater. A county permit with an accompanying oak tree report is required in order to remove or relocate oak trees protected under the Oak Tree Ordinance. Removed oak trees must be replaced at a ratio of at least 2 to 1 with native oak trees of at least a 15-gallon size and measuring at least 1 inch in diameter at 1 foot above the base. Replacement trees must be maintained for two years and replaced if mortality occurs.

Chapter 12.28, the Brushing Ordinance (Ord. 9106 § 1), of the County of Los Angeles Municipal Code protects natural vegetation—which includes native plants, grasses, shrubs, and trees and roots—with the ability to intercept, hold, and more slowly release rainfall than bare earth surfaces. The Brushing Ordinance requires a permit for the removal or destruction of natural vegetation on any ground surface with a grade of 8 percent or higher. To obtain a permit for the removal or destruction of natural vegetation within Los Angeles County, a written request is required and must include a description of the property; a map of the topography of the land and location of any drainage courses; the location and extent of proposed work; and details of the erosion, flood hazards, and drainage plans. The county engineer may include conditions for the permit, including seasonal limitations on vegetation removal or destruction, requirements for protective structures or erosion control devices, and restoration of native vegetation in impacted areas.

City of Monterey Park General Plan

The City of Monterey Park General Plan and the Addendum to City of Monterey Park General Plan Final Environmental Impact Report (FEIR) were both reviewed for relevant goals and policies related to biological resources. The documents do not list goals or policies related to biological resources, and the Addendum to the City of Monterey Park General Plan FEIR states that no biological resources or habitat areas occur within the City of Monterey Park. Therefore, no local regulations relating to biological resources apply in the City of Monterey Park.

City of Montebello General Plan

The Conservation Element of the City of Montebello General Plan was reviewed for relevant goals and policies related to biological resources. The General Plan stated that the purpose of the conservation element is to comply with California law. Goals listed in the plan include the preservation of habitat for desirable or non-objectionable birds and mammals, as well as the preservation of outstanding and unique plant life in the community.

City of Rosemead General Plan

The Resource Management Element of the City of Rosemead General Plan addresses the protection of the limited natural resource within the city limits, including recreation areas, water supply resources, air quality improvement, and energy conservation.

City of South El Monte

South El Monte General Plan

The Resources Element of the City of South El Monte General Plan addresses resource conservation within the city, including the provision of park space, water conservation, protection of drinking water, and improvement of air quality.

City of South El Monte Tree Policy

The city has adopted a tree policy includes the following provisions related to tree removal and tree planting:

- Street trees shall be selected from the city’s Approved Tree List
- All trees will be planted in a minimum 24-inch box

- All trees scheduled for planting must be coordinated with the city's Landscape Maintenance Supervisor
- Every effort should be made to keep tree removal at a minimum; if trees are removed, every effort should be made to replace them with trees from the Approved Tree List
- No tree will be removed with prior approval of the General Services Director

City of Commerce General Plan

The Resource Management Element of the City of Commerce General Plan addresses the protection of natural resources within the city limits. The plan contains the following goal and policies:

Goal

- To preserve those resources and amenities that enhance Commerce's living and working environment

Policies

- Policy 1.1 – The City of Commerce will do its part in the conservation and protection of air, water, energy, and land in the Southern California region
- Policy 4.1 – The City of Commerce will encourage the preservation of the existing plant resources in the city
- Policy 6.3 – The City of Commerce will continue to monitor development efforts that could affect the resources that are of importance to the community

City of Bell Gardens General Plan

The Conservation Element of the City of Bell Gardens General Plan addresses the protection of natural resources within the city limits. The plan contains policies that protect groundwater and other ecological resources through programs listed in other sections of the plan.

City of Pasadena General Plan

The City of Pasadena General Plan was reviewed for relevant goals and policies related to biological resources. The following goals and policies are contained in the Open Space and Conservation Element and the Green Space, Parks, and Recreation Element of the General Plan:

Goals

- Preserve, acquire, and create open space
- Protect and conserve natural open spaces, critical habitats, and natural resources
- Protect, restore, and maintain native wildlife and areas containing important native vegetation resources in the city
- Protect important open space and habitat linkages
- Protect and enhance Pasadena's trees on public and privately owned land
- Establish Pasadena as a national and international leader on energy and water conservation and environmental stewardship efforts
- Encourage and promote the stewardship of Pasadena's natural environment, including water conservation, clean air, natural open space protection, and recycling

Policies

- Policy 1.2: Protect natural open areas, watersheds, and environmentally sensitive areas such as Hahamongna, Eaton Canyon, riparian areas, and other open spaces

- Policy 1.5: Restore, protect, and enhance wildlife habitat within critical open space areas and any wildlife corridors and/or linkages

- Policy 1.6: Continue to protect the City's legacy of a lush and varied urban forest. Continue to plant street trees as per the City's Master Street Tree Plan and continue to maintain and protect the urban forest as a vital local resource

- Policy 1.8: Conserve and protect water resources in parks and open spaces; maximize the quality and quantity of groundwater recharge to minimize the dependence on imported water

City of Pasadena Municipal Code

Chapter 8.52 City Tree and Tree Protection Ordinance (Ordinance 6896§ 2 (part), 2002) of the City of Pasadena Municipal Code contains measures to accomplish the following:

- Preserve and grow the City of Pasadena's canopy cover by protecting landmark, native, and specimen trees on specified areas of private property;
- Expand the protection of street trees and trees on public property;
- Safeguard the City of Pasadena's urban forest by providing for the regulation of the protection, planting, and maintenance and removal of trees in the city;
- Protect the visual and aesthetic character of the many areas of the City of Pasadena;
- Protect and maintain healthy trees in the land use planning processes;
- Create favorable conditions for the protection on designated landmark, native, and specimen trees for the benefit of current and future residents of the City of Pasadena; and
- Improve the quality of life for residents, visitors, and wildlife.

The City Tree and Tree Protection Ordinance protects all native, specimen, landmark, landmark-eligible, or mature trees in the City of Pasadena. Specifically, the ordinance seeks to avoid mechanical injury to tree roots, trunks, or branches; the compaction of soil; and changes to existing grade, which may expose or suffocate roots. Construction projects that would affect native, specimen, landmark, landmark-eligible, or mature trees require the submittal of a tree protection plan for review and approval.

The term "native tree," as defined by this ordinance, means any tree with a trunk more than 8 inches in diameter at a height of 4.5 feet above natural grade. Native trees include coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), canyon live oak (*Quercus chrysolepis*), California sycamore (*Platanus racemosa*), California black walnut, scrub oak (*Quercus berberidifolia*), valley oak (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), California alder (*Alnus rhombifolia*), black cottonwood (*Populus trichocarpa*), arroyo willow (*Salix lasiolepis*), and California buckeye (*Aesculus californica*).

The term “specimen” is defined as a tree meeting the criteria established by resolution of the city council for species and size of tree, which is thereby presumed to possess distinctive form, size, or age and to be an outstanding specimen of a desirable species. A “landmark tree” is defined as a tree of historic or cultural significance and of importance to the community, such as it is one of the largest or oldest trees of the species in the city; it has historical significance due to an association with a historic building, site, street, person, or event; or it is a defining landmark or significant outstanding feature of a neighborhood. A “landmark-eligible” tree is defined as a tree that meets the criteria for designation as a landmark tree, as determined by the review authority. A mature tree is defined as an otherwise non-protected tree with a diameter at breast height of 19 inches or greater.

Requests for a permit to remove a landmark, native and specimen tree will be denied unless one of the following findings is made:

- There is a public benefit, or a public health, safety, or welfare benefit, to the injury or removal that outweighs the protection of the specific tree (public benefit means a public purpose, service, or use which affects residents as a community and not merely as particular individuals); or
- The present condition of the tree is such that it is not reasonably likely to survive; or
- There is an objective feature of the tree that makes the tree not suitable for protection; or
- There would be a substantial hardship to a private property owner in the enjoyment and use of real property if the injury or removal is not permitted; or
- To not permit the injury or removal would constitute a taking of the underlying real property; or
- The project includes a landscape design plan that will result in a tree canopy coverage of greater significance than the tree canopy coverage being removed, within a reasonable time after completion of the project.

No permit is required to prune non-protected trees, specimen trees or native trees on private property. Pruning of a designated landmark tree requires a permit and the pruning work must be done according to the most recent standards of the International Society of Arboriculture.

4.1 SPECIAL-STATUS WILDLIFE

4.1.0 Special-Status Wildlife Species Definitions

For purposes of this analysis, special-status wildlife are legally protected under the CESA and FESA or other regulations, and species that are considered rare by the scientific community. Special-status species are defined as follows:

- animals that are listed or proposed for listing as threatened or endangered under the CESA (California Fish and Game Code § 2050 et seq.; 14 California Code of Regulations

[CCR] § 670.1 et seq.) or the FESA (50 CFR § 17.12 for plants; 50 CFR 17.11 for animals; and various notices in the Federal Register for proposed species);

- animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR § 17; Federal Register Vol. 64, No. 205, pages 57533-57547, October 25, 1999) and under the CESA (California Fish and Game Code § 2068);
- animals that meet the definition of endangered, rare, or threatened under CEQA (14 CCR § 15380) that may include species not found on either federal or state endangered species lists;
- migratory birds and any of their parts, eggs, and nests, as protected by the Migratory Bird Treaty Act (MBTA);
- migratory, non-game birds of management concern listed by the USFWS;
- birds of prey (California Fish and Game Code §§ 3503, 3503.5, 3513, and 3800);
- animals that are designated as "Species of Special Concern" (SSC) by the CDFW; and
- animal species that are "fully protected" in California (California Fish and Game Code §§ 3511, 4700, 5050, and 5515).

4.1.1 Relevant Regulations

Federal

Federal Endangered Species Act

A species listed as threatened or endangered under the FESA is protected from unauthorized "take" of that species. If it is necessary to take a federally listed endangered or threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take. Under Section 7 of FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its critical habitat must consult with the USFWS.

Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act (BGEPA), passed in 1940 to protect the bald eagle and amended in 1962 to include the golden eagle (16 U.S.C. 668a–d). The BGEPA (16 U.S.C. 668-668d) prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by the USFWS. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA prohibits any form of possession or take of either eagle species, and imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute.

Regarding its prohibitions on possession, the statute exempts the use of eagles or eagle parts for exhibition, scientific, and Native American religious uses.

Migratory Bird Treaty Act

The MBTA implements international treaties between the U.S. and other nations that protect migratory birds (including their eggs and nests) from killing, hunting, pursuing, capturing, selling, and shipping, unless expressly authorized or permitted.

State

California Fish and Game Code

State Endangered Species Act

As discussed previously, a species listed as threatened or endangered under the CESA (California Fish and Game Code § 2050) is protected from unauthorized take of that species. If it is necessary to take a state-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the CDFW prior to initiating the take. Section 2081 allows take of a listed species for educational, scientific, or population-management purposes.

Resident and Migratory Birds

Sections 3503, 3503.5, 3513, and 3800 of the California Fish and Game Code affords protection over the destruction of nests or eggs of native bird species, and it states that no birds in the orders of *Falconiformes* or *Strigiformes* (i.e., birds of prey) can be taken, possessed, or destroyed.

Fully Protected Species

According to Sections 3511 and 4700 of the California Fish and Game Code—which regulate birds and mammals, respectively—a Fully Protected species may not be taken or possessed and incidental take of these species is not authorized. The CDFW cannot issue permits or licenses that authorize the take of any Fully Protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (§ 3511).

California Environmental Quality Act

As discussed previously, CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. In addition to federally or state-listed listed species, special-status animals receive consideration under CEQA. Special-status species include wildlife SSC listed by the CDFW. Pursuant to the CEQA Guidelines (14 CCR § 15380), some SSC could be considered “rare.” Any unmitigated impacts to rare species could be considered a “significant effect on the environment” (14 CFR § 15382). Thus, SSC must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

4.2 WETLAND AND AQUATIC RESOURCES

Hydrologic features located within or near the Proposed Project area may fall under the jurisdiction of federal and/or state agencies that regulate impacts to hydrologic resources. The subsections that follow provide descriptions of the regulatory oversight associated with the hydrologic features that are located within and near the Proposed Project area.

4.2.0 Relevant Regulations

Federal

Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of fill material into waters of the U.S. without a permit from the USACE. The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined 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 do support, a prevalence of vegetation typically adapted for life in saturated soil conditions," according to Title 33, Section 328.3(b) of the CFR. The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit.

A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions. 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 will comply with the applicable CWA provisions, as stated in Title 33, Section 1341 of the U.S.C.

The National Pollution Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 U.S.C. § 1342). The program originally focused on industrial-process wastewater and publicly owned treatment works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of storm water discharges, known as Phase I facilities.

The U.S. EPA issued a final rule for Phase II discharges in August 1995. Phase II storm water discharges include light industrial facilities, small construction sites (less than 5 acres), and small municipalities (populations of less than 100,000).

In California, NPDES permitting authority is delegated to the State Water Resources Control Board (SWRCB) and administered by the nine RWQCBs. Dischargers with projects that disturb 1 or more acres of soil are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) (Water Quality Order 99-08-DWQ). On August 19, 1999, the SWRCB reissued the General Permit and later that year amended the permit to apply to sites as small as 1 acre. On September 2, 2009, the SWRCB adopted Order No. 2009-0009-DWQ (General Construction Permit), which reissued Order 99-08-DWQ for projects disturbing 1 or more acre of land, or that are part of a common plan of development or sale that disturbs more than 1 acre of land. The new permit became effective

July 1, 2010, and all existing dischargers and new dischargers are required to obtain coverage under the new permit by submitting Permit Registration Documents, which include a SWPPP.

State

California Fish and Game Code Section 1600

Sections 1601 through 1606 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement Application be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Lake or Streambed Alteration Agreement.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (Water Code § 13000, et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect waters of the State. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Individual water quality control plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. Waste discharge requirements and waivers are mechanisms used by the RWQCBs to control discharges and protect water quality.

5 – METHODOLOGY

Biological resources data for the Proposed Project area were obtained through a literature review of reference materials, including background documents, manuals and guides of California plants, birds, and mammals. In addition, field visits—including reconnaissance-level general biological surveys, wetland delineations, and a verification of previous wetland delineations conducted in accordance with all pertinent regulatory guidelines—were conducted to assess biological resources in the Proposed Project area. The reference materials and plans consulted are further described in Section 5.0 Literature Search, and additional information regarding survey methodology and the wetland delineation is provided in Section 5.1 Survey Methodology.

5.0 LITERATURE SEARCH

Preliminary investigations included a study of aerial photographs, U.S. Geological Survey (USGS) topographic maps, USFWS National Wetland Inventory maps (USFWS 2014b), and literature and database searches, as described further in the subsections that follow.

5.0.0 Review of Applicable Plans

The following local government and agency plans were reviewed to determine plans that are relevant to the Proposed Project activities or the Proposed Project area:

- County of Los Angeles General Plan (County of Los Angeles 2014)

- City of Bell Gardens General Plan (City of Bell Gardens 1995),
- City of Commerce General Plan (City of Commerce 2008),
- City of South El Monte General Plan (City of South El Monte 2000),
- City of Montebello General Plan (City of Montebello 1973),
- City of Montebello Municipal Code (City of Montebello 2014),
- City of Monterey Park General Plan (City of Monterey Park 2001
- City of Monterey Park Municipal Code (City of Monterey Park 2014),
- City of Rosemead General Plan (City of Rosemead 2010), City of Pasadena General Plan (City of Pasadena 2004), and City of Pasadena Municipal Code (City of Pasadena 2004).

No additional local government plans that apply to the Proposed Project area were identified.

5.0.1 Review of Applicable Background Documents

The Proposed Project area overlaps with Segments 7, 8, and 11 of the TRTP. As a result, the following biological documents produced for the TRTP were reviewed:

- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 7 and 8*;

- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 6 and 11*;

- *Tehachapi Renewable Transmission Project Segment 11A Goodrich to Mesa Transmission Line Jurisdictional Delineation and Impact Analysis Report;*

- *Tehachapi Renewable Transmission Project Biological Assessment*;

- *Formal Section 7 Consultation on the Tehachapi Renewable Transmission Project, Angeles National Forest, California*;

- *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*;

- *Biological Technical Report for the Southern California Edison Tehachapi Renewable Transmission Project Segments 6, 7, 8, and 11: Volume I of II*;

- *Biological Resources section of the Proponent's Environmental Assessment for the Tehachapi Renewables Transmission Project*;

- *Final Environmental Impact Report, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*;

- *Final Environmental Impact Statement, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*;

- *Southern California Edison's Tehachapi Renewables Transmission Project Supplemental Final Environmental Impact Report/Environmental Impact Statement*;

- *2009 Final Special-Status Plant Species Survey Report for the Southern California Edison Tehachapi Renewables Transmission Project Segments 7 and 8*;
- *2010 Focused Survey Report for Special-Status Plants Segments 7 and 8*;
- *Preconstruction Biological Survey and Clearance Sweep Report for Southern California Edison's WP3 Transmission Line Work Segment 7 Transmission Line (M40-T1, M42-T6, WSS 7-7.62, WSS 7-7.63, WSS 7-7.64, WSS 7-7.75), and 66kV Relocation (4774404E to 4774410E, M7-T1) Los Angeles County, California*;
- *Tree Inventory Report for Segments 7 and 8*;
- *2010 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8*;
- *2011 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8*;
- *2009 Focused Survey Report for Burrowing Owl, Segments 6 and 11*;
- *2009 Focused Survey Report for Burrowing Owl, Segments 7 and 8*;
- *2010 Focused Survey Report for Burrowing Owl, Segments 6 and 11*; and
- *2010 Focused Survey Report for Burrowing Owl, Segments 7 and 8.*

5.0.2 Special-Status Species Records

A literature and database search, including a geographic information system review of the CNDDB (CNDDB 2014) maintained by the CDFW was conducted for all USGS 7.5-minute quadrangles surrounding or spanned by the Proposed Project.[5] Two CNDDB queries were performed; one query centered on Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications work; and the other query centered on Goodrich Substation site. The CNPS Inventory of Rare and Endangered Plants (CNPS 2014) was accessed online to obtain additional information regarding sensitive plant species. The USFWS Information, Planning, and Conservation System (USFWS 2011) was queried for a list of threatened and endangered species known to occur within or near the Proposed Project area. Records for all known special-status plants and animals within 0.25 mile, 1 mile, and 5 miles of the Proposed Project were compiled and reviewed.

[5] The 7.5-minute quadrangle search was conducted for the Azusa, Mt. Wilson, Pasadena, Baldwin Park, El Monte, Los Angeles, La Habra, Whittier, and South Gate quadrangles.

Special-Status Species' Potential to Occur

Special-Status Plant and Wildlife

The potential for special-status plant and wildlife species to occur within or near the Proposed Project area was determined using information from the literature and database searches and the habitat assessment surveys. The following criteria were used to determine the potential for special-status species to occur within the Proposed Project area:

- Present: The species or its sign (e.g., scat, tracks, or feathers) was observed in the Proposed Project area during field surveys.

- High Potential: The Proposed Project area is located within the range of the species; suitable habitat is present in the Proposed Project area; and the species has been frequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences have been reported within 1 mile of the Proposed Project area.

- Moderate Potential: The Proposed Project area is located within the range of the species; suitable habitat is present in the Proposed Project area; and the species has been infrequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences have been reported within 5 miles of the Proposed Project area.

- Low Potential: The Proposed Project area is located within the range of the species; poor to marginal habitat is present in the Proposed Project area; and the species has been infrequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences of the species have been recorded within 5 miles of the Proposed Project area.

- No Potential: The Proposed Project area is located outside of the range of the species; no habitat for the species exists in the Proposed Project area; and the species has been sporadically observed in the Proposed Project area based on literature, or no recent CNDDB occurrences for this species have been recorded within 5 miles of the Proposed Project area. Alternatively, any CNDDB occurrences recorded within 5 miles of the Proposed Project are now extirpated.

5.0.3 Critical Habitat

Critical habitat designations provided by the USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) were reviewed to identify any designated critical habitat located in the Proposed Project area. In addition, background information, including scientific papers and agency documents—such as 5-year reviews, habitat conservation plans (HCPs), and survey protocols—were reviewed in order to further identify sensitive species with the potential to occur in the Proposed Project area.

5.0.4 Habitat Conservation Plans/Natural Community Conservation Plans

The USFWS Conservation Plans and Agreements Database (USFWS 2013) was reviewed to determine whether any active HCPs are crossed by the Proposed Project. The CDFW Natural

Community Conservation Planning (NCCP) program (CDFW 2013) was also reviewed to determine whether the Proposed Project crosses any active NCCPs.

5.0.5 Vegetation Communities

Plant community descriptions and their locations within the TRTP survey boundaries were taken from the TRTP analysis provided in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*. Vegetation communities were added or revised by Insignia following surveys. The majority of the plant communities were characterized according to R.F. Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The remaining plant communities were characterized by TRTP or by Insignia, as further detailed in the vegetation community descriptions that follow.

5.1 SURVEY METHODOLOGY

5.1.0 General Biological Surveys

Insignia Environmental (Insignia) biologists Isabelle de Geofroy and Lauren Huff conducted a survey of the entire Mesa Substation site on June 3 and 4, 2014. Lauren Huff conducted a survey of the entire Goodrich Substation site on June 18, 2014. The purpose of these surveys was to verify the vegetation communities identified for the TRTP and to document any additional vegetation communities in the Proposed Project area. Insignia biologists Isabelle de Geofroy and Christina Sousa conducted a survey of the Proposed Project area on December 15 through 18, 2014. The biologists walked the entire Proposed Project area and looked for evidence of special-status species and documented any wildlife and plant species observed on site. Representative photographs were taken of vegetation communities observed in the Proposed Project area, as provided in Attachment A: Representative Photographs.

5.1.1 Protocol-Level California Coastal Gnatcatcher Surveys and Habitat Assessment

In 2010 and 2011, focused coastal California gnatcatcher (*Polioptila californica californica*) surveys were conducted for Segments 7 and 8 of the TRTP, in accordance with the USFWS (1997) protocol. ICF International (ICF) biologists with a 10(a)(1)(A) permit for coastal California gnatcatchers conducted surveys for this species from April 17 to June 30, 2010 and from April 6 to June 29, 2011. In 2010, the biologists were authorized by the USFWS to conduct focused protocol-level breeding surveys in 15 areas with potentially suitable habitat for the coastal California gnatcatcher. Given the potential for gnatcatcher, Rocks Biological Consulting (RBC) biologists with a 10(a)(1)(A) permit for coastal California gnatcatchers conducted a habitat assessment for the species in the entire Proposed Project area in October and December 2014.

In 2011, the USFWS authorized surveys in 21 areas. Survey areas with potentially suitable habitat were identified as having either coastal sage (*Artemisia californica*) scrub or Riversidean alluvial fan sage scrub located within 500 feet of the TRTP and/or SCE ROW or access roads. Per the USFWS (1997) protocol, an approximately 80-acre subarea was used to demarcate survey areas so that one surveyor could reasonably complete the survey within the required 1-day period. A minimum of six survey visits were conducted at least 1 week apart. Survey visits were conducted between 6:00 a.m. and 12:00 p.m. and avoided periods of excessive or abnormal heat, wind, rain, fog, or other inclement weather. Each subarea within the survey areas was traversed by walking

meandering transects. Transects ran a course so that 100 percent of the subarea was covered during each of the six visits. The surveys included slow walking with frequent stops to look and listen.

If coastal California gnatcatchers were not detected after a few minutes, the broadcasting of a taped coastal California gnatcatcher vocalization was initiated. Taped vocalizations were broadcasted in all survey areas at distance intervals of 75 to 100 feet. Once one or more coastal California gnatcatchers elicited a response to a broadcasted vocalization, the tape playback was immediately stopped and did not continue until the biologist was far enough to not affect that individual (or multiple birds) with the recording again. The location of detected coastal California gnatcatchers was recorded using a Global Positioning System (GPS) unit. The GPS device used most regularly during these surveys was the Yuma model by Trimble, but recreational grade models by Garmin were also used on occasion. If visually confirmed, the sex and estimated age (i.e., adult, nestling, or fledgling) was recorded. Exhibited behavior (e.g., territorial, nest building, incubating, feeding nestlings, or feeding fledglings) was also recorded. If time allowed, detected coastal California gnatcatchers were watched for several minutes and additional points were recorded to further document the locations where individuals, pairs, or family groups were observed within a territory. All wildlife species observed during the 2010 and 2011 surveys were recorded in field notes for each of the survey areas.

In 2014, RBC biologists conducted a habitat assessment; suitable coastal California gnatcatcher habitat contained the following constituent elements:

- Coastal sage scrub with greater than 50-percent cover, consisting of species such as California sagebrush and/or California buckwheat; or

- Areas consisting of a matrix of sparse, scattered coastal sage scrub shrubs and annual/biennial vegetation with sufficient morphological structure and density to support coastal California gnatcatcher nesting and provide foraging opportunities.

Areas consisting only of annual/biennial plants without sufficient shrub cover were considered not suitable for California gnatcatcher. The coastal California gnatcatcher could fly into these areas as part of its daily activities, but these vegetation patches were not considered suitable or essential for use by California gnatcatcher under this assessment. RBC biologists mapped suitable nesting and foraging habitat within the Proposed Project area.

5.1.2 Focused Burrowing Owl Surveys

In 2009 and 2010, focused surveys for burrowing owl (*Athene cunicularia*) were conducted for Segments 6, 7, 8, and 11 of the TRTP in accordance with the established protocol for this species (CDFW 1995). AMEC Earth & Environmental, Inc. (AMEC) biologists conducted the surveys within the following timeframes:

- August 2 to 3, 2009;
- August 5 to 6, 2009;
- August 11 to 13, 2009;
- August 17 to 21, 2009;
- August 24 to 28, 2009; and

- August 30 to 31, 2009.

ICF's biologists and subconsultants—BonTerra Consulting (BonTerra), ECORP Consulting, Inc., Dudek, and Bloom Biological—conducted focused surveys on the following dates:

- March 29 to April 2, 2010;
- April 6 to 7, 2010;
- April 12 to 13, 2010;
- April 23, 2010;
- April 26 to 29, 2010;
- May 24 to 28, 2010;
- June 1 to 4, 2010;
- June 7 to 18, 2010;
- June 22, 2010;
- June 24 to 25, 2010;
- June 30, 2010;
- July 2, 2010;
- July 8 to 10, 2010; and
- July 12 to 14, 2010.

Prior to the focused burrowing owl surveys, suitable habitat was assessed for potential burrowing owl burrows (i.e., any burrow or crevasse a burrowing owl could occupy). Potential burrows in this area were marked with a GPS unit. During the focused surveys, potential burrows were checked for any sign of recent owl occupation (i.e., whitewash, pellets/castings, feathers, etc.). Binoculars were used to search for and identify species on site.

5.1.3 Special-Status Bat Species Surveys

Reconnaissance-level surveys of habitats capable of supporting roosts for special-status bat species were conducted by Aspen Environmental Group (Aspen) for the TRTP between September 17 and 21, 2007; September 25 and 28, 2007; and July 14 and 15, 2008. Field surveys were conducted at approximately 87 locations throughout the TRTP. Habitats capable of supporting roosts were evaluated in the field by searching for structures, including cavities, crevices, and cracks in trees, fractured rocks (including caves and mines), cliffs, and human structures (e.g., buildings, bridges, and dams).

5.1.4 Rare Plant Surveys

Focused botanical surveys of the TRTP were conducted by Aspen and H.T. Harvey and Associates from June to December 2007. Additional focused surveys were conducted by Aspen and H.T. Harvey and Associates during February to July 2008. The purpose of the 2007 and 2008 surveys was to verify data compiled from previous surveys conducted by SCE in 2007, to document and evaluate the vegetation types present, and to determine the potential occurrence of special-status and invasive plants. Plant taxa were identified to the lowest taxonomic level possible using a variety of taxonomic keys, including *The Jepson Manual* (Hickman 1993) and *A Flora of Southern California* (Munz 1974). The scientific names for all plant taxa are reported using the nomenclature of Hickman (1993). Due to scheduling constraints, the 2007 focused

botanical surveys of the TRTP were conducted outside of the blooming period for the majority of the special-status plants in the area. Furthermore, rainfall totals for the 2006-2007 growing season were among the lowest on record in Southern California (National Weather Service [NWS] 2007), resulting in conditions that were very poor for the detection of many plant species, especially annuals. Therefore, the TRTP was surveyed for habitat capable of supporting these species based on factors such as soil type, disturbance regime, species composition of native vegetation, and known records in the vicinity of the TRTP.

In 2009, additional botanical surveys were conducted in Segments 7 and 8 of the TRTP in accordance with the CDFW *Guidelines for Assessing the Effects of the Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFW 2006) and the *CNPS Botanical Survey Guidelines* (CNPS 2001). Botanical surveys were conducted by AMEC biologists, as well as associate botanists from the University of Riverside and H.T. Harvey and Associates, between April 20 and August 27, 2009. Surveys were conducted during the spring to coincide with the blooming period of the majority of plant species that were anticipated to be potentially present. Surveys were conducted to assess the botanical resources within the potential Proposed Project impact areas, including an approximately 500-foot buffer around the centerline for the TRTP transmission line. The 2009 botanical surveys updated the botanical surveys conducted along the TRTP segments in 2007 and 2008.

In 2010, botanical surveys were conducted for Segments 7 and 8 of the TRTP. Botanical surveys were conducted by ICF biologists and subconsultants—ECORP Consulting, Inc., BonTerra, Dudek, Merkel & Associates, and WRA Environmental Consultants—between April 12 and August 6, 2010. Botanical surveys were conducted in accordance with the CNPS (2001) guidelines, CDFW *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFW 2009), and USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). Surveys were conducted to assess the botanical resources within the potential TRTP impact areas, including an approximately 500-foot buffer around the centerline for the TRTP transmission line.

5.1.5 Delineation of Jurisdictional Waters

ICF wetland biologists conducted wetland delineations for the TRTP from September to November 2009; November 2009 to July 2010; and on April 4 and 5, 2011. The delineations were conducted in accordance with the USACE *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). During the delineation work, the TRTP was evaluated to identify jurisdictional wetlands and waters and their connection to off-site hydrologic resources. Any wetlands observed were identified by observing the presence of USACE-defined wetland parameters, including hydrophytic vegetation, wetland hydrology, and hydric soils. Waters were delineated by identifying the ordinary high water mark (OHWM) of the feature and/or the top of bank (TOB) or extent of riparian vegetation. Data was recorded on wetland field data forms, and a submeter-accurate GPS unit was used to record the boundaries and/or centerlines of the wetlands and waters.

On June 3 and June 4, 2014, Insignia biologists Isabelle de Geofroy and Lauren Huff conducted a survey of the Mesa Substation site. In addition, on June 18, 2014, Lauren Huff conducted a

survey of the entire Goodrich Substation site. Surveys were conducted to verify the jurisdictional waters and wetlands identified for the TRTP and to document any additional waters and wetlands. The biologists walked the entire Proposed Project area and spot-checked all wetlands and waters identified for the TRTP. The biologists also confirmed the vegetation communities and descriptions documented in the TRTP reports. The location, OHWM width (if applicable), and TOB width (if applicable) of any new water features observed were recorded using a submeter-accurate GPS unit. In addition, representative photographs were taken of all jurisdictional or potentially jurisdictional wetlands and waters observed on the Proposed Project area.

On December 15 through 18, 2014, Insignia biologists Isabelle de Geofroy and Christina Sousa conducted a wetland delineation of the transmission, subtransmission, distribution, and telecommunications line work sites. The delineations were conducted using the same methodology as the ICF delineations.

5.2 IMPACT DETERMINATION

Potential impacts associated with the Proposed Project can be classified as temporary, permanent, direct, and/or indirect. Impacts to sensitive species may occur either through temporary or permanent habitat loss, interruption of normal species routines, or through direct mortality. Potential impacts to sensitive species associated with the Proposed Project were assessed by analyzing specific species' requirements, including necessary vegetative habitat, elevation range, foraging needs, denning or breeding requirements, migratory trends, current ranges, and known occurrences or records. Additionally, an estimate of the amount of vegetation removal planned for the clearing of the ROWs, work areas, and access roads was assessed. Impacts to aquatic resources were identified by examining the proximity of these resources to Proposed Project work areas and the construction needs within those areas. In addition, potential changes in hydrology and vegetation that might result from the Proposed Project were analyzed.

5.2.0 Definition of Impacts

Temporary and Permanent

Temporary impacts are those that are temporary in nature and would result in no permanent change. Permanent impacts are those impacts that are lasting and final. Temporary impacts generally include impacts associated with construction activities, including the use of vehicles or helicopters, storage of construction materials and equipment, or vegetation removal in areas that would be restored once construction is complete. Permanent impacts generally include impacts associated with construction and installation of a new facility.

Direct and Indirect

Direct impacts include primary effects that are caused by a project and occur at the same time and place as project implementation. Indirect effects are those which are caused by a project but occur later in time, or are further removed in distance but are reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems. Direct impacts may refer to the loss or removal of vegetation communities due to construction of new access roads or work at

staging/laydown areas. Indirect impacts may include interruption of nesting or foraging behavior due to loss of prey items, such as insects or food resources.

6 – RESULTS

6.0 GEOGRAPHY, CLIMATE, AND HYDROLOGY

The Proposed Project is located within the northwestern portion of the Peninsular Ranges Geomorphic Province in the foothills of the San Gabriel Mountains in the Los Angeles Basin, where the Peninsular and Transverse ranges meet. The Proposed Project is within the Los Angeles River Hydrological Unit. Streams are generally dry in the summer months, but it is common for perennial flows to be present, especially in the larger streams fed by the San Gabriel Mountains or urban runoff. Many of the drainages in this region have been lined with concrete to serve as flood control channels, or have otherwise been altered to conform to the urban landscape. Flood-control and debris-control dams have been built on many of the larger channels, especially at the interface between the mountains and the urban area, including the Whittier Narrows Flood Control Basin and the Santa Fe Flood Control Basin. With the exception of several smaller or headwater drainages in undeveloped areas (e.g., the Chino Hills and Puente Hills), few streams remain in a natural state.

Major drainages in the region include Alhambra Wash, Avocado Creek, Chino Creek, Cucamonga Creek, Eaton Wash, La Canada Verde Creek, Little Chino Creek, Mission Creek, Rio Hondo, Rubio Wash, and the San Gabriel River. In the vicinity of the Mesa Substation site and the associated transmission, subtransmission, distribution, and telecommunications line work sites, storm water generally flows from the northeast to the southwest and is collected in storm drains that connect to the Rio Hondo or the San Gabriel River. In the vicinity of the temporary 220 kV line loop-in at Goodrich Substation, storm water generally flows from the east to the west toward the Eaton Wash, which also flows to the Rio Hondo. The Rio Hondo empties into the Los Angeles River. Both the San Gabriel River and the Los Angeles River flow from north to south and eventually empty into the San Pedro Bay in Seal Beach and Long Beach, respectively.

The elevation of the Proposed Project ranges from 130 feet to 750 feet above mean sea level. Between the years of 1981 and 2010, rainfall records from the nearest climatological station (which is located in the City of Montebello) to the Mesa Substation site show an average annual rainfall of approximately 15.3 inches. Between 1981 and 2010, the average annual temperature for this area was approximately 67.4 degrees Fahrenheit.

6.1 VEGETATION COMMUNITIES AND ASSOCIATED WILDLIFE HABITATS

The Proposed Project area consists of urbanized development and natural areas. Urbanized development includes the existing and to-be-acquired SCE fee-owned properties and ROWs. Other uses in the vicinity include public roads and residential, commercial, and industrial properties. In addition, several nurseries are located within or near the Proposed Project area. Natural areas are concentrated in four sections of the Proposed Project area: the Mesa Substation site and adjacent ROWs; the Montebello Hills; the Rio Hondo corridor; and the San Gabriel

River corridor, as shown in Figure 1: Project Overview Map. The following 14 vegetation communities occur in the Proposed Project area:

- California annual grassland
- California walnut woodland
- Coast live oak woodland
- Coastal sage scrub
- Disturbed/developed areas
- Mulefat scrub
- Non-native giant reed
- Non-native woodland
- Riparian woodland
- Ruderal
- Southern sycamore-alder riparian woodland
- Ephemeral drainages
- Intermittent drainage
- Man-induced wetlands

Vegetation is a prime factor in assessing the suitability of a site for use by certain wildlife species and the potential for occurrence of certain plant species. The following subsections provide descriptions of each vegetation community and the associated and observed wildlife species of each community within the Proposed Project area. Vegetation communities are described to be consistent with the *Final Environmental Impact Statement, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*. Nomenclature used for plant names follows *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). Nomenclatural changes made after the publication date of this manual follow the Jepson eFlora (2014) website.

The location of each vegetation community is provided in Figure 2: Vegetation Communities Map. Representative photographs of the vegetation communities in the Proposed Project area are provided in Attachment A: Representative Photographs. A complete list of plant species observed in the Proposed Project area during Insignia's 2014 field visits is presented in Attachment B: Plant Species Observed by Insignia in June and December 2014. A complete list of wildlife observed in the Proposed Project area during Insignia's 2014 field visits is presented Attachment C: Wildlife Species Observed by Insignia in June and December 2014.

6.1.0 California Annual Grassland

Prior to the settlement of Europeans in California, the California landscape was dominated by native, perennial bunchgrasses. A variety of Mediterranean grass and forb species were subsequently brought to California for use as crops or ornamentals, or inadvertently in the fur and digestive systems of livestock. Land use changes resulted in the establishment of annual grasses of Eurasian ancestry and the displacement of the native grasses, creating a new kind of grassland community.

California annual grasslands are often associated with deep, fine-textured soils that contain some clay content. In the Proposed Project area, this vegetation community occurs in the Mesa

Figure 2:
Vegetation Communities
Map 1 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

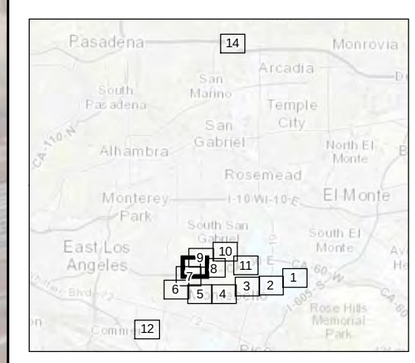

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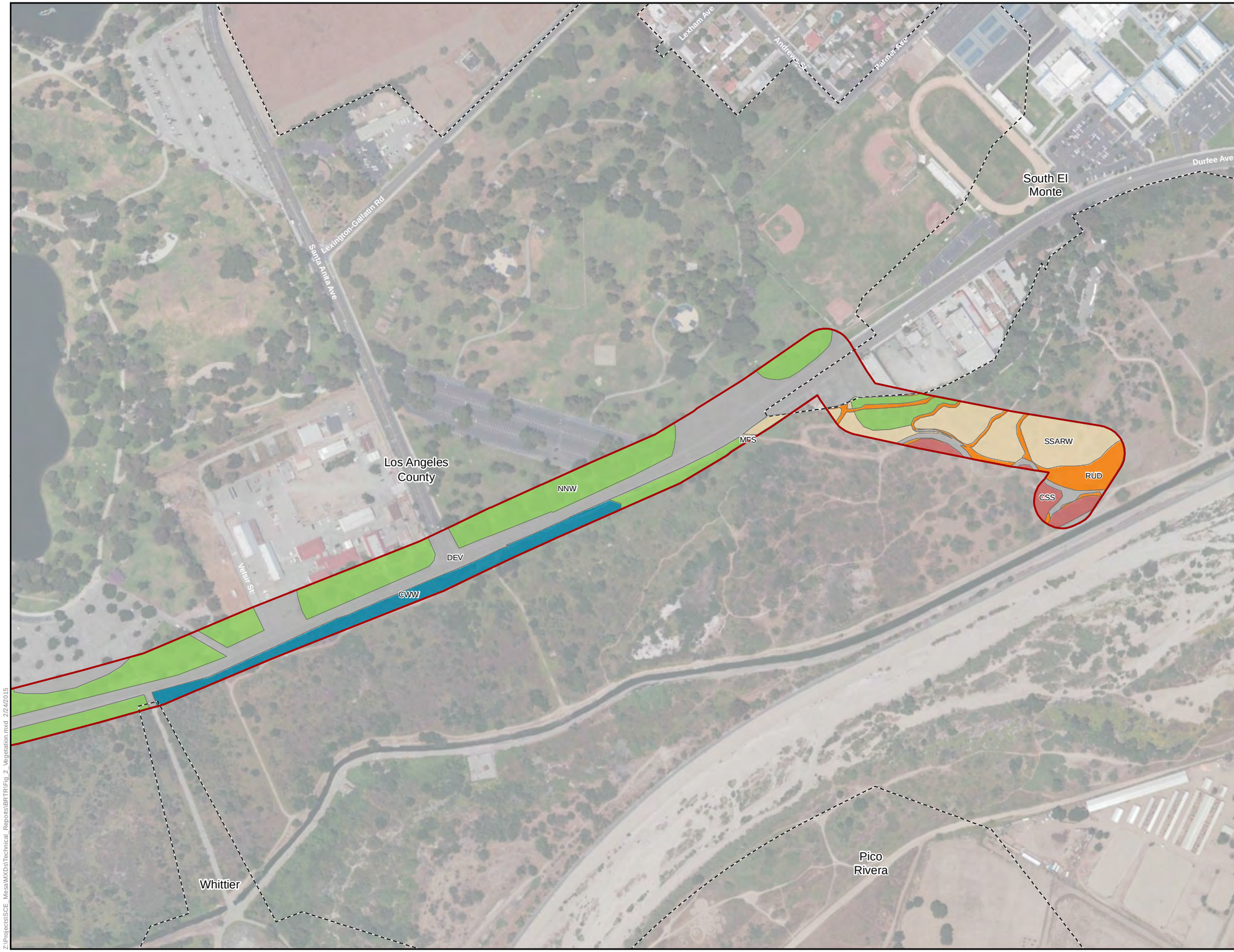
Figure 2:
Vegetation Communities
Map 2 of 15

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
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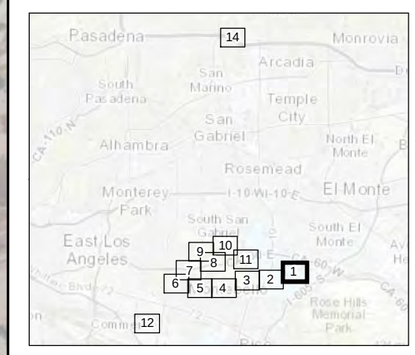

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Figure 2:
Vegetation Communities
Map 3 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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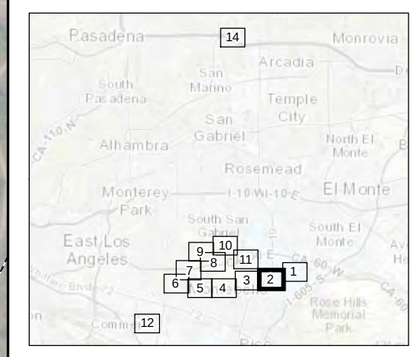

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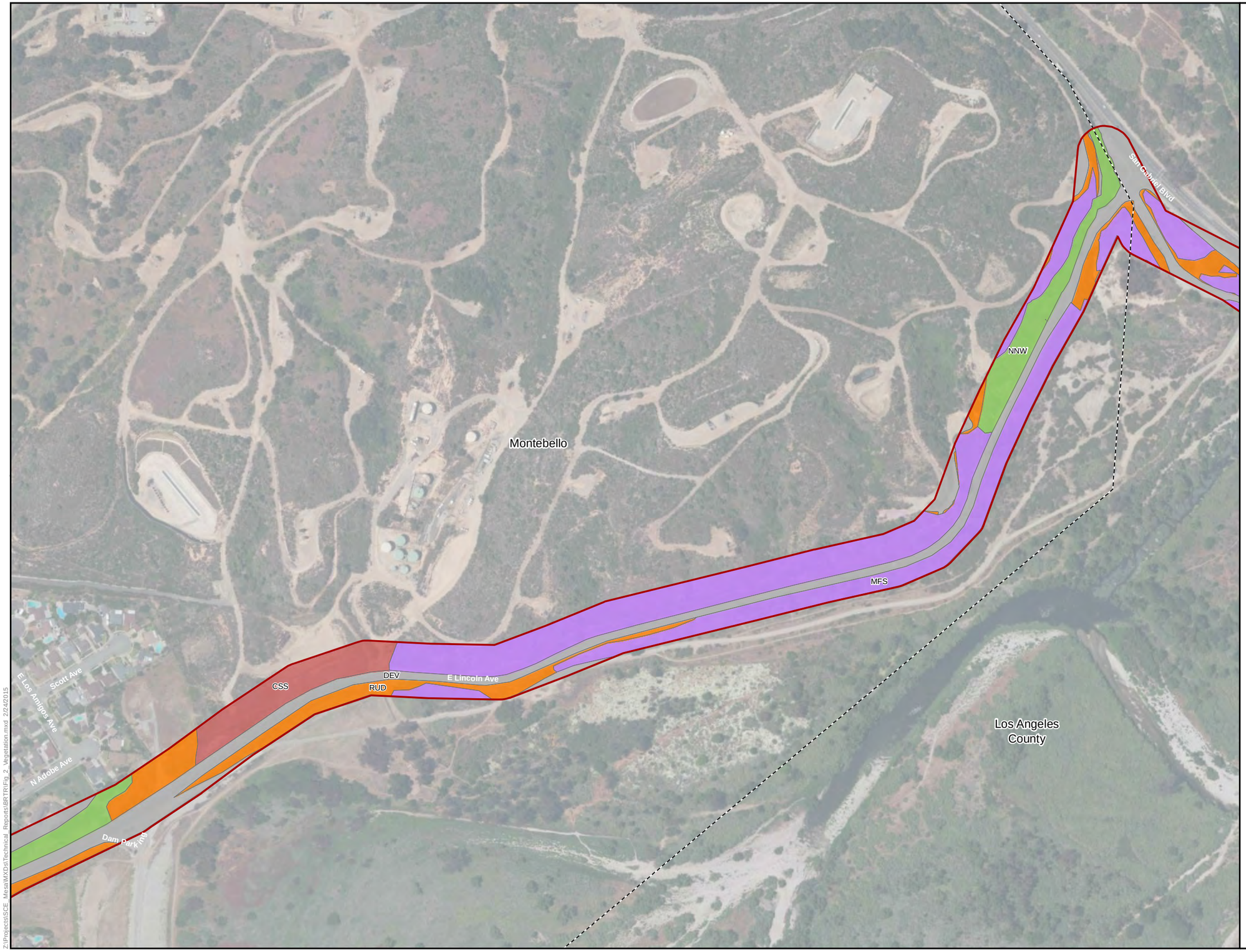
Figure 2:
Vegetation Communities
Map 4 of 15

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
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- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
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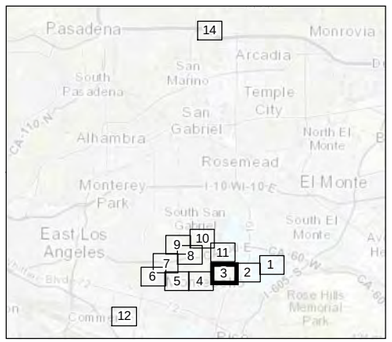

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Figure 2:
Vegetation Communities
Map 5 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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- Disturbed/Developed (DEV)
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- Ephemeral Drainage (ED)
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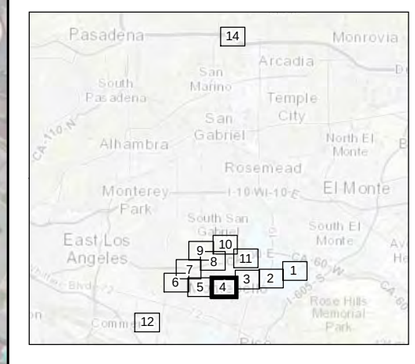

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Figure 2: Vegetation Communities Map 6 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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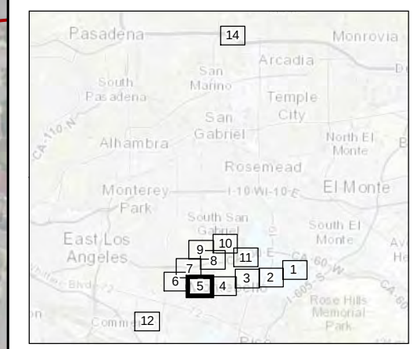

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Figure 2:
Vegetation Communities
Map 7 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
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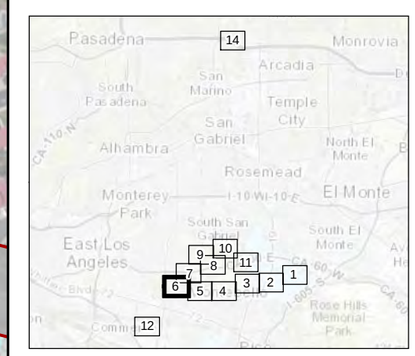

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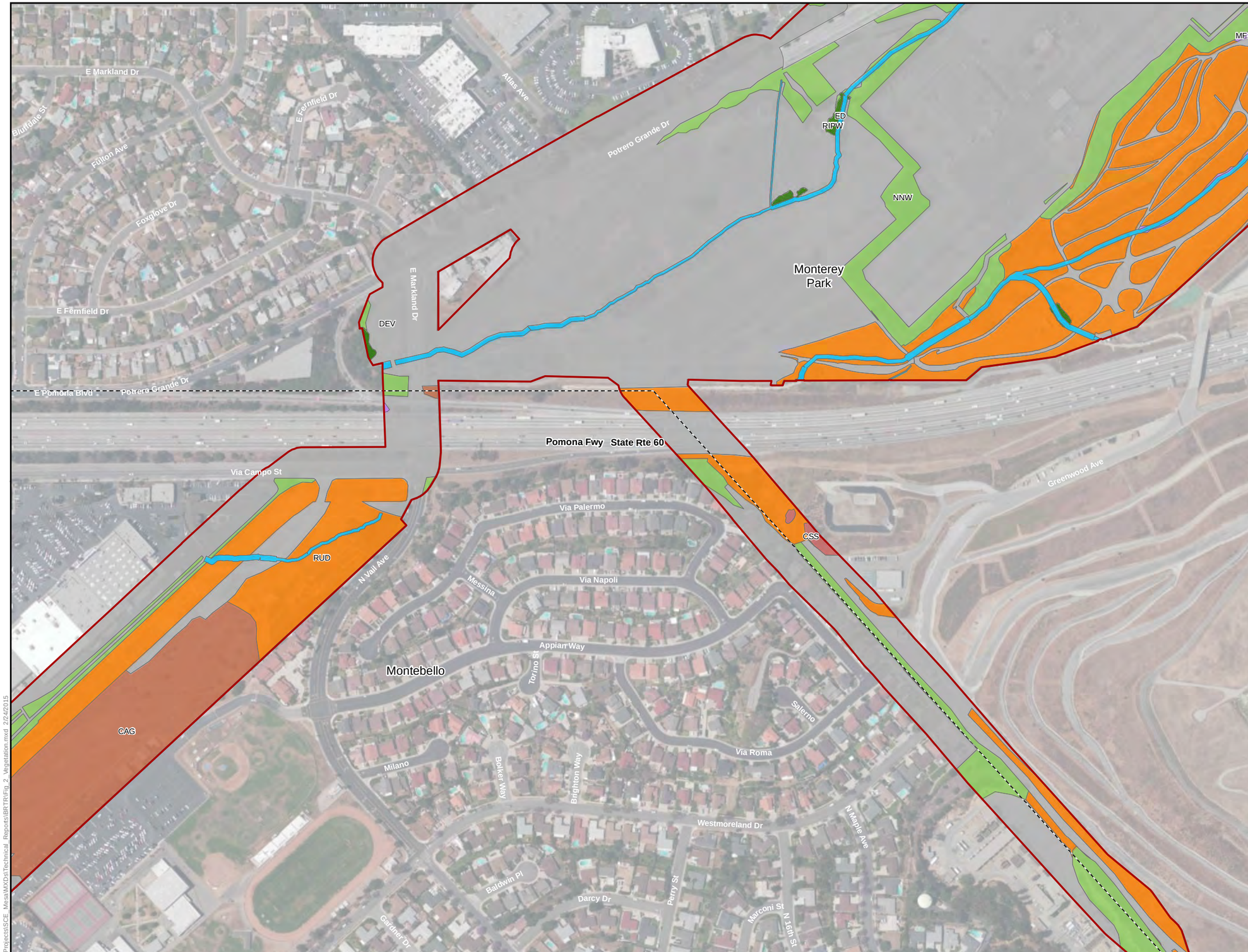
Figure 2:
Vegetation Communities
Map 8 of 15

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

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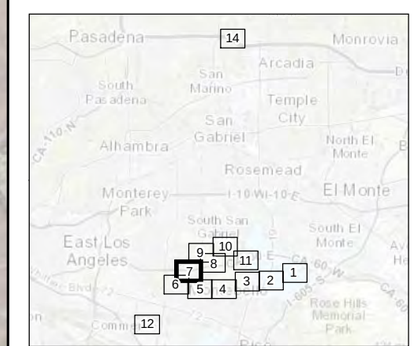

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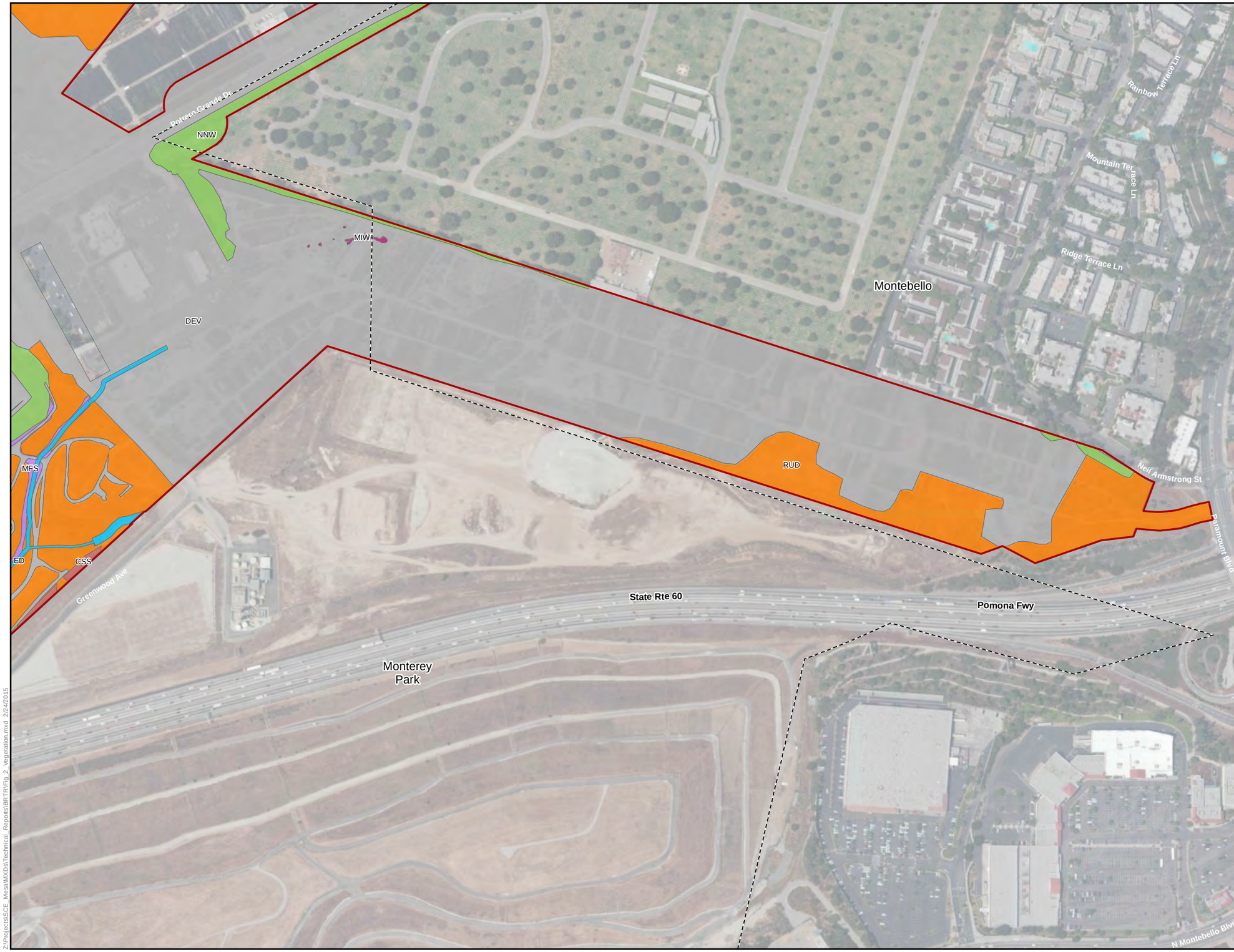
Figure 2:
Vegetation Communities
Map 9 of 15

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

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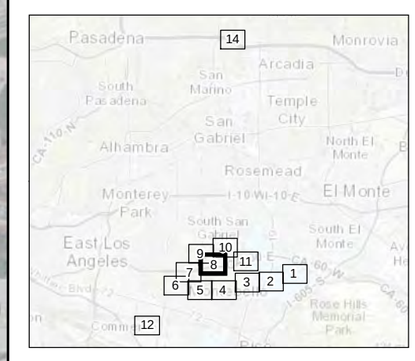

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Figure 2:
Vegetation Communities
Map 10 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
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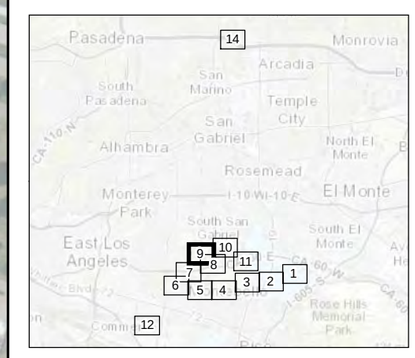

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Figure 2:
Vegetation Communities
Map 11 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

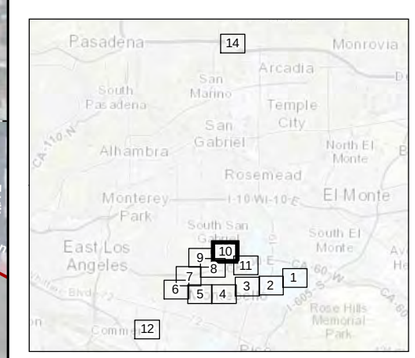

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Figure 2:
Vegetation Communities
Map 12 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
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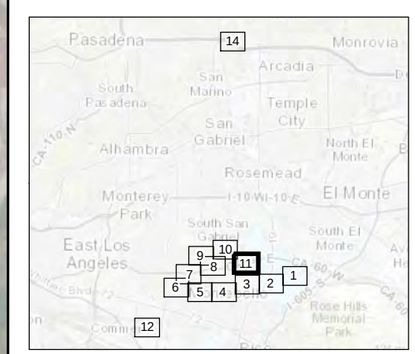

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Figure 2:
Vegetation Communities
Map 13 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
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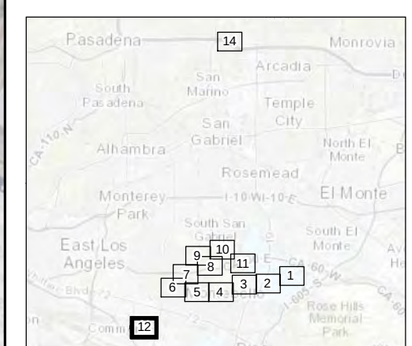

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Figure 2:
Vegetation Communities
Map 14 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
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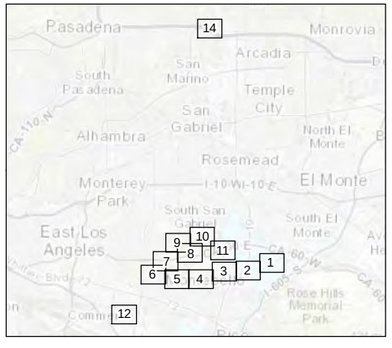

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Figure 2:
Vegetation Communities
Map 15 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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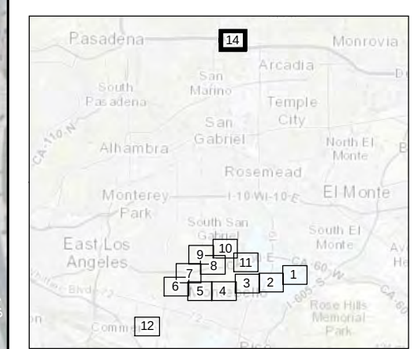

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Substation site just north of the substation and in the southwestern portion of the site. Dominant grass and forb species are non-native species, such as slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), Italian rye grass (*Festuca perennis*), wild oats (*Avena* spp.), black mustard (*Brassica nigra*), short-podded mustard (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), white-stem filaree (*Erodium moschatum*), and woolly trefoil (*Acmispon brachycarpus*). Native species also occur in this plant community; however, their total percent cover is much lower than that of the non-native species. Native species found in California annual grasslands within the Proposed Project area include tufted poppy (*Eschscholzia caespitosa*) and turkey mullein (*Croton setigerus*). Typical wildlife species that may use this habitat include mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), and red-tailed hawk (*Buteo jamaicensis*). California annual grassland is consistent with the non-native grassland vegetation community described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.1 California Walnut Woodland

Stands of California walnut woodland are dominated by California walnut with scattered coast live oak co-occurring in the canopy. Within the Proposed Project area, the shrub layer often contains blue elderberry (*Sambucus nigra* subsp. *caerulea*), laurel sumac (*Malosma laurina*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is dominated by non-native grasses. Species composition also includes the occasional coastal sage scrub species (e.g., California sagebrush [*Artemisia californica*]), and disturbance-adapted species, such as non-native brome grasses and poison hemlock (*Conium maculatum*). Stands of California walnut woodland occur primarily in the San Gabriel River corridor and in the Montebello Hills. Wildlife species typical of this habitat include house finch (*Carpodacus mexicanus frontalis*), northern mockingbird (*Mimus polyglottos*), and northern flicker (*Colaptes auratus*). California walnut woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.2 Coast Live Oak Woodland

Coast live oak woodland typically consists of open to relatively closed canopy stands dominated by coast live oak. This vegetation community occurs within the outer South Coast Ranges, and coastal slopes of the Transverse and Peninsular Ranges, usually below 4,000 feet. Within the Proposed Project area, disturbed coast live oak woodland occurs along Eaton Wash within the Goodrich Substation site. This vegetation community consists of an open row of coast live oaks intermixed with non-native species, such as Brazilian pepper tree (*Schinus terebenthifolius*) and Mexican fan palm (*Washingtonia robusta*). The herbaceous understory is dominated by non-native grasses. As a wildlife habitat, these woodlands can provide nesting sites for a variety of raptors, especially if they are adjacent to open spaces. Coast live oak woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.3 Coastal Sage Scrub

Coastal sage scrub consists of low, mostly soft-woody shrubs with a sparse herbaceous layer. Stands may be dominated by California sagebrush or by California buckwheat (*Eriogonum fasciculatum*). Coastal sage scrub is present in the Montebello Hills, the San Gabriel River

corridor, and on a hillslope on the south side of the Mesa Substation. Wildlife species typically found in this vegetation community include California towhee (*Pipilo crissalis*), song sparrow (*Melospiza melodia*), western bluebird (*Siglia mexicana*), western scrub-jay (*Aphelocoma californica*), Audubon's cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*). Coastal sage scrub was originally described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and is consistent with Diegan coastal sage scrub (Holland 1986).

6.1.4 Disturbed/Developed Areas

Disturbed/developed areas are generally subject to intensive human use with much of the land paved or covered by structures. Disturbed areas are typically characterized by heavily compacted or frequently disturbed soils. In all cases, disturbed/developed areas are devoid of naturally growing vegetation or possess only sparse cover. Disturbed habitat includes dirt roads, areas where permanent structures have been constructed, agricultural fields, and landscaped areas that are mowed or maintained regularly, thus precluding the establishment of natural vegetation. Developed land within the Proposed Project area includes areas such as Mesa Substation and Goodrich Substation. Wildlife species that are typically associated with disturbed/developed habitat include house finch, common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), northern mockingbird, and rock dove (*Columbia livia*). Disturbed/developed areas is an anthropogenic vegetation community characterized by Insignia.

6.1.5 Mulefat Scrub

Mulefat scrub is a riparian scrub community dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Without frequent flooding, most stands would succeed to willow- (*Salix* sp.) or sycamore- (*Platanus racemosa*) dominated riparian forests or woodlands. The community occurs in stream channels with fairly coarse substrate and moderate depth to the water table. Mulefat scrub was documented in the southern portion of the Mesa Substation site along two ephemeral channels, as well as along the Rio Hondo and San Gabriel River corridors. This habitat can support reptile and amphibian species, as well as a number of passerines, such as wintering white-crowned sparrow (*Zonotrichia leucophrys*) and breeding western kingbird (*Tyrannus verticalis*). Mulefat scrub is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.6 Non-native Giant Reed

Non-native giant reed stands are dominated by dense, impenetrable thickets of giant reed (*Arundo donax*), with few or no other species present. Giant reed is a non-native, bamboo-like, perennial grass that grows up to 26 feet tall. It most often occurs in riparian corridors and has become a serious problem throughout California. The U.S. Forest Service considers giant reed to be an invasive weed of high concern for its severe impacts on ecosystems, plant and animal communities, and vegetation structure. One stand of giant reed was mapped on the east bank of the Rio Hondo, just south of North San Gabriel Boulevard. Few wildlife species are found here due to the compact nature of this plant and a lack of lateral branches. Birds may use it for perching along riparian corridors, but it does not provide good forage or cover. Non-native giant reed was originally described as exotic giant reed in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.7 Non-Native Woodland

Non-native woodland describes tree stands dominated by eucalyptus (*Eucalyptus* spp.), Brazilian pepper tree, or pine (*Pinus* spp). These trees were often historically planted as windbreaks and for aesthetic and horticultural purposes around houses, parks, and other developed areas. Understory development in these communities tends to be limited because of a combination of thick bark, leaf-litter, and/or seed pods deposited below the trees, as well as potentially allelopathic compounds in these materials.[6] Non-native woodlands typically support a limited amount of native vegetation. Non-native woodland was documented in the area surrounding Mesa Substation the associated ROWs; south of the Montebello Hills area; and within residential parks, nurseries, and other landscaped areas. As a wildlife habitat, these woodlands can provide nesting sites for a variety of raptors, especially if they are adjacent to open spaces. Non-native woodland is described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.8 Riparian Woodland

Riparian woodland is a vegetation community that occurs along the margins of streams and rivers that are subject to seasonal flooding. Natural riparian woodlands are rich habitats, supporting numerous plant species that can include trees, shrubs, vines, and annual and perennial herbs. This variety of plants provides a complex vegetative structure, which in turn supports a diversity of wildlife species. Most natural riparian woodlands in Southern California have been lost or degraded by land use conversions to agriculture, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; and water impoundments. Disturbed riparian woodland was documented along ephemeral drainages in the vicinity of Mesa Substation and East Markland Drive. Vegetation in this plant community consists of a preponderance of non-native species trees, including Brazilian pepper tree, date palm (*Phoenix dactylifera*), and Mexican fan palm with a few native riparian species, including Goodding's black willow (*Salix gooddingii*), and mulefat. Wildlife species typical of this habitat type include European starling, American crow (*Corvus brachyrhynchos*), and house finch. Riparian woodland is described as southern coast live oak riparian forest in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986); however, due to the high level of disturbance, the riparian woodland found within the Proposed Project area does not meet the typical vegetation description.

6.1.9 Ruderal

Ruderal (weedy) areas consist of an assemblage of plants that thrive in waste areas, roadsides, construction sites, and other sites that are repeatedly disturbed by human activity. The common ruderal species that were detected include crimson fountain grass (*Pennisetum setaceum*), black mustard, short-podded mustard, wild radish, tocalote (*Centaurea melitensis*), prickly lettuce (*Lactuca serriola*), telegraph weed (*Heterotheca grandiflora*), Russian thistle (*Salsola tragus*), woolly mullein (*Verbascum thapsus*), and sweet fennel (*Foeniculum vulgare*). Within the Proposed Project area, this vegetation community occurs throughout Mesa Substation and the associated ROWs, in the Montebello Hills area, and in the Rio Hondo and San Gabriel River

[6] Allelopathic describes the process by which one plant produces compounds that inhibit or otherwise influence the growth or development of neighboring plants.

corridors. This habitat type typically supports fewer wildlife species due to a lack of cover; species found may include western fence lizard (*Sceloporus occidentalis*) and rodents. Ruderal is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.10 Southern Sycamore-Alder Riparian Woodland

In stands of southern sycamore-alder riparian woodland, widely spaced California sycamore is the dominant tree in the canopy, white alder (*Alnus rhombifolia*) is frequently present, and a shrub layer exists. Several stands of southern sycamore-alder riparian woodland occur in the Rio Hondo and San Gabriel River corridors. Occurrences of this vegetation community within the Proposed Project area are fragmented or being restored and contain non-native trees, including Monterey pine (*Pinus radiata*) and cypress (*Cupressus* sp.). The shrub layer is comprised of willow, mulefat, and mugwort (*Artemisia douglasiana*). Woody vines present were poison oak and wild grape (*Vitis girdiana*). Wildlife species typical in this habitat include white-crowned sparrow, house finch, and Audubon's cottontail. Southern sycamore-alder riparian woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.11 Ephemeral Drainages

Ephemeral drainages describe large, mostly unvegetated wash systems. This community consists of channels that temporarily convey concentrated flows following storm events. These areas are dry for the majority of the year and, in the Proposed Project area, are generally vegetated with non-native annual grasses or weedy species. Species documented in the drainages include castor bean (*Ricinus communis*), short-podded mustard, slender wild oat, wild radish, and thornapple (*Datura wrightii*). Ephemeral drainages occur throughout the Mesa Substation site. These sites often support terrestrial wildlife species, such as mice or western fence lizards that can find cover under man-made features in disturbed areas. Ephemeral drainages are characterized by Insignia.

6.1.12 Intermittent Drainage

Rio Hondo is an intermittent drainage that traverses the Proposed Project area under North San Gabriel Road. Rio Hondo is generally dry in the summer months, flowing after the start of winter rains. The bed of the drainage is sandy and sparsely vegetated with polygonum (*Polygonum* sp.). The banks are vegetated with giant reed, Goodding's black willow, mulefat, castor bean, dwarf nettle (*Urtica urens*), and California buckwheat, among others. Intermittent drainage is characterized by Insignia.

6.1.13 Man-Induced Wetlands

Five man-induced wetlands occur in the northeast portion of the Mesa Substation site. The wetlands are vegetated by a wide variety of grasses and perennial herbs adapted for growth in saturated soils, including mule fat, broad-leaved cattail (*Typha latifolia*), tall flatsedge (*Cyperus eragrostis*), broadleaf pepperweed (*Lepidium latifolium*), hairy willowherb (*Epilobium ciliatum*), and rabbit's-foot grass (*Polypogon monspeliensis*). All man-induced water features within the Proposed Project area have developed as a result of a leaking underground irrigation pipe associated with the adjacent nursery. At the time of the surveys, these features contained a small amount of standing water. Man-induced wetlands are characterized by Insignia.

6.2 SPECIAL-STATUS PLANT SPECIES

After searching the CDFW's CNDDB (2014) for special-status plant records within 5 miles of the Proposed Project area and the CNPS Inventory of Rare and Endangered Plants of California for a list of special-status plant species known to occur in the vicinity of the Proposed Project, Insignia compiled a list of 29 special-status plant species that have potential to occur in the region of the Proposed Project, which is presented in Table 7: Special-Status Plant Species. CNDDB occurrences within 5 miles of the Proposed Project area are depicted in Figure 3: Mesa Substation CNDDB Plant Occurrences Map and Figure 4: Goodrich Substation CNDDB Plant Occurrences Map.

Of the 29 special-status plant species identified, nine occur in specialized habitats (e.g., marshes, swamps, meadows, and vernal pools) that do not occur within the Proposed Project area. Thus these plants are not expected to occur in the Proposed Project area. CNDDB occurrences for the remaining 20 potentially occurring special-status plant species were identified within 5 miles of the Proposed Project area, as shown in Figure 3: Mesa Substation CNDDB Plant Occurrences Map and Figure 4: Goodrich Substation CNDDB Plant Occurrences Map, as well as in Table 7: Special-Status Plant Species. Of the 20 special-status plant species, the following determinations were made:

- two species—California black walnut and Nevin's barberry—were found to be present in the Proposed Project area,
- no species were determined to have a high potential to occur within the Proposed Project area,
- three species—southern tarplant (*Centromadia parryi* ssp. *australis*), Plummer's mariposa-lily (*Calochortus plummerae*) and intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)—were determined to have a moderate potential to occur within the Proposed Project area,
- 15 species were determined to have a low potential to occur within the Proposed Project area, and

A detailed discussion regarding local populations, habitat requirements, and life history of the California black walnut, Nevin's barberry, southern tarplant, Plummer's mariposa-lily, and intermediate mariposa-lily is provided in the following subsection.

While focused special-status plant surveys were conducted for the TRTP between 2007 and 2010, these surveys were limited to the sections of the Proposed Project site that are included in the TRTP; therefore, no special-status plant surveys have been conducted in areas of the Proposed Project that do not overlap with the TRTP. In addition, current environmental conditions on the Proposed Project site could differ from conditions present at the time special-status plant surveys were conducted in 2010. Furthermore, CDFG (2009), USFWS (1996), and CNPS (2001) guidelines state that focused surveys for special-status plants must be conducted when any natural vegetation occurs on a project site and the activity has the potential for direct or indirect effects on vegetation. As such, the presence of rare plant species with the potential to

occur cannot be dismissed from the Proposed Project site until special-status plant surveys are conducted prior to the start of construction.

6.2.0 Species Present in the Proposed Project Area

California Black Walnut

California black walnut is a CNPS CRPR 4.2 perennial deciduous tree that is endemic to Southern California. It typically occurs in alluvial chaparral, cismontane woodland, and coastal scrub habitats at elevations between 150 and 3,000 feet. This species has also been found across a wide range of habitats, including riparian woodland, cliffs, sage scrub, and grassland habitat. The blooming period for California black walnuts is from March to August. Five California black walnut individuals were observed in ruderal habitat on the Mesa Substation site during the TRTP 2009 and 2010 rare plant surveys. Seven California black walnut individuals were observed along Lincoln Boulevard in the Montebello Hills area during Insignia's December 2014 survey. The locations of the California black walnuts that were observed on-site are depicted in Figure 5: Biological Resources Observations Map.

The California black walnut is not protected by the FESA or CESA, nor does it have any special federal or state protected status. This plant is a CNPS CRPR 4.2 species; it is of limited distribution or infrequent throughout a broader area in California. Although the CNPS recommends that this species be evaluated for CEQA consideration, this is not required under CEQA. California black walnut occurs or has the potential to occur in the cities of Monterey Park and Montebello, and in unincorporated areas of Los Angeles County; however, mitigation or compensation for the removal of California black walnut trees is not required by these jurisdictions.

Nevin's Barberry

Nevin's barberry is a federal and state-listed endangered species and a CNPS CRPR 1.2 species. This evergreen shrub typically occurs in chaparral, cismontane woodland, coastal sage scrub, and riparian scrub, on steep, north-facing slopes or in low-grade sandy washes on gravelly soils. It blooms between March and June. This species is threatened by habitat loss associated with development and road maintenance. Within the Proposed Project area, one individual Nevin's barberry was observed during Insignia's December field surveys, in the Whittier Narrows Nature Center along the San Gabriel River corridor. The location of the Nevin's barberry is depicted in Figure 5: Biological Resources Observations Map. A photograph of this species is included in Attachment A: Representative Photographs.

Table 7: Special-Status Plant Species

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Asteraceae (Compositae) – Sunflower Family					
Southern tarplant (*Centromadia parryi* ssp. *australis*)	1B.1	Southern tarplant is an annual herb that occurs in the margins of marshes and swamps, vernally mesic valley and foothill grasslands, and vernal pool habitats. It is typically found at elevations from sea level to approximately 650 feet.	June through October	Two CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site[8], both of which are presumed extant. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this occurrence is possibly extirpated.	Suitable habitat for this species occurs along the banks of Rio Hondo. As a CNDDB occurrence for this species is located upstream of the Proposed Project area within the Rio Hondo corridor, this species has a moderate potential to occur. **Moderate Potential**
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	1A	Los Angeles sunflower is a perennial rhizomatous herb that occurs in coastal salt and freshwater marsh and swamp habitats. It is typically found at elevations from approximately 30 to 5,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1903 and is possibly extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	1B.1	Coulter's goldfields is an annual herb that occurs in coastal salt marshes and swamps, playas and vernal pools. It is typically found from sea level to approximately 4,000 feet in elevation.	April through May	One CNDDB occurrence is documented within 5 miles of the Proposed Project area; however, this occurrence was recorded in 1939 and is possibly extirpated. One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1882 and is possibly extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
White rabbit-tobacco (*Pseudognaphalium leucocephalum*)	2B.2	White rabbit-tobacco is a perennial herb that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. It typically occurs at elevations from sea level to approximately 7,000 feet.	July through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. While both records are presumed extant, these occurrences were recorded before 1930.	Suitable habitat for this species occurs in the Proposed Project area in the Montebello Hills area, south of Mesa Substation, and in the Rio Hondo and San Gabriel River corridors. However, no documented occurrences are within 5 miles of this portion of the Proposed Project area. **Low Potential**

[7] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally listed as Endangered
-FT: Federally listed as Threatened

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-CR: State-listed as Rare

Rare Plant Ranks:

-1A: Presumed extirpated because they have not been seen or collected in the wild in California for many years
-1B.1: Rare, threatened or endangered in California or elsewhere; seriously threatened in California
-1B.2: Rare, threatened or endangered in California or elsewhere; fairly threatened in California
-1B.3: Rare, threatened or endangered in California or elsewhere; not very threatened in California
-2.1: Rare, threatened or endangered in California only; seriously threatened in California
-2.2: Rare, threatened or endangered in California only; fairly threatened in California
-3: More information is needed regarding this species; taxonomically uncertain
-4.1: Limited in distribution or infrequent throughout California; seriously threatened in California
-4.2: Limited in distribution or infrequent in California; fairly threatened in California
-4.3: Limited in distribution or infrequent in California; not very threatened in California

[8] The Mesa Substation site includes Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications work.

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
San Bernardino aster (*Symphyotrichum defoliatum*)	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, marshes, swamps, and valley and foothill grassland, below 6,700 feet in elevation.	July through November	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1930 and is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. The only CNDDB occurrence of this species was recorded in 1930 and is presumed extirpated. **Low Potential**
Greata's aster (*Symphyotrichum greatae*)	1B.3	Greata's aster is a perennial rhizomatous herb that occurs in mesic areas in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. It is typically found at elevations from approximately 1,000 to 6,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded before 1920 and one is possibly extirpated.	Suitable habitat for this species occurs in the Rio Hondo and San Gabriel River corridors. However, the Proposed Project is outside of this species' elevation range. **Low Potential**
Berberidaceae – Barberry Family					
Nevin's barberry (*Berberis nevinii*)	FE CE 1B.1	Nevin's barberry is a perennial evergreen shrub that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian habitats. It is typically found at elevations from approximately 900 to 2,700 feet.	March through June	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Three CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All three records are presumed extant.	This species was observed in the San Gabriel River corridor during field surveys conducted by Insignia biologists in December 2014. **Present**
Boraginaceae – Borage Family					
Brand's star phacelia (*Phacelia stellaris*)	1B.1	Brand's star phacelia is an annual herb that occurs in coastal dunes and coastal scrub habitats. It is typically found at elevations from sea level to approximately 1,300 feet.	March through May	Two CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site; however, these occurrences were documented before 1936 and are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs within the Proposed Project area south of Mesa Substation and in the Montebello Hills area. The closest record for this species was last seen near the Proposed Project area in 1936. **Low Potential**
Brassicaceae (Cruciferae) – Mustard Family					
Poor-man's peppergrass (*Lepidium virginicum* ssp. *menziesii*), (previously Robinson's pepper-grass [*Lepidium virginicum* ssp. *robinsonii*])	4.3	Robinson's pepper-grass is an annual herb that occurs in chaparral and coastal scrub habitat. It is typically found at elevations from sea level to approximately 2,900 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, there are no recorded occurrences in this area. **Low Potential**
Convolvulaceae – Morning-Glory Family					
Lucky morning-glory (*Calystegia felix*)	3.1	This species is historically associated with wetlands and marshy habitats, but also can occur in drier locales. Potential habitats include sometimes alkaline meadows and seeps, and alluvial riparian scrub.	March through September	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo and San Gabriel River corridors. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Santa Barbara morning glory (*Calystegia sepium* ssp. *binghamiae*)	1B.1	Santa Barbara morning glory is perennial rhizomatous herb that occurs in wetland and marshy areas, possibly in silty loam and alkaline substrates. It is typically found at elevations from sea level to approximately 65 feet.	April through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs within the Proposed Project area. **No Potential**
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	2B.2	Peruvian dodder is an annual parasitic vine that occurs in marsh and swamp habitats. It is typically found at elevations below approximately 1,600 feet.	July through October	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. The CNDDB occurrence listed above is also located is within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Cyperaceae – Sedge Family					
California saw-grass (*Cladium californicum*)	2B.2	California saw-grass is a perennial rhizomatous herb that occurs in meadows and seeps, as well as in alkaline or freshwater marshes and swamps. It is typically found at elevations from approximately 200 to 2,800 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence is extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Fabaceae (Leguminosae) – Legume Family					
Braunton's milk-vetch (*Astragalus brauntonii*)	FE 1B.1	Braunton's milk-vetch is a perennial herb that occurs in sandstone or carbonite layers in chaparral, coastal scrub, and valley and foothill grassland habitats. It usually occurs in areas that have been recently burned or disturbed. It is typically found at elevations from near sea level to approximately 2,100 feet.	March through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation and in the Montebello Hills area. However, no occurrences have been documented within 5 miles of the site. Two extant occurrences are near the Goodrich Substation site however, there is no suitable habitat in this location. **Low Potential**
Geraniaceae – Geranium Family					
Round-leaved filaree (*California macrophylla*)	1B.1	Round-leaved filaree is an annual herb that occurs in clay substrates in cismontane woodland and valley and foothill grassland habitat. It is typically found at elevations from approximately 50 to 3,900 feet.	March-May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this record is possibly extirpated.	Marginally suitable habitat for this species occurs within the Proposed Project area south of the Mesa Substation site. **Low Potential**
Grossulariaceae – Gooseberry Family					
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	1A	Parish's gooseberry is a perennial deciduous shrub that occurs in riparian woodland habitat. It is typically found at elevations from approximately 200 to 1,000 feet.	February through April	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, both of which are presumed extant. There is one occurrence within 5 miles of the Proposed Project area and the Goodrich Substation; however this occurrence was recorded in 1882 and is possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area along the Rio Hondo and San Gabriel River corridors. However, this species is thought to be extirpated from California and was last seen near the Proposed Project area in 1980. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Juglandaceae – Walnut Family					
California black walnut (*Juglans californica*)	4.2	California black walnut is a perennial deciduous tree that occurs in alluvial chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from approximately 150 to 3,000 feet.	March through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	This species was observed on the Mesa Substation site during botanical surveys conducted for the TRTP in 2009 and 2010. In addition, Insignia biologists observed this species during December 2014 field surveys along Lincoln Boulevard in the Montebello Hills area, and along Durfee Avenue in the San Gabriel River corridor. **Present**
Lamiaceae (Labiatae) – Mint Family					
Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	1B.2	Southern mountains skullcap is a perennial rhizomatous herb that occurs in mesic areas in chaparral, cismontane woodland, and lower montane coniferous forests. It is typically found at elevations from approximately 2,000 to 6,600 feet.	June through July	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is possibly extirpated. This occurrence is also located within 1 mile of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. The Proposed Project area is located outside of this species' elevation range. **Low Potential**
Liliaceae – Lily Family					
Plummer's mariposa-lily (*Calochortus plummerae*)	4.2	Plummer's mariposa-lily is a perennial bulbiferous herb that occurs in granitic or rocky substrate in chaparral, cismontane woodland, coastal scrub, lower montane forest, and valley and foothill grassland habitats. It is typically found at elevations from approximately 330 to 5,600 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four records are presumed extant. Eight CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Seven of these occurrences are presumed extant, and one is possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Extant occurrences of this species are located in close proximity to the Proposed Project area. **Moderate Potential**
Intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)	1B.2	Intermediate mariposa-lily is a perennial bulbiferous herb that occurs in rocky and calcareous substrate in chaparral, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from approximately 350 to 2,800 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four occurrences are presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. In addition, extant occurrences are within close proximity to the Mesa Substation site. **Moderate Potential**
Poaceae (Gramineae) – Grass Family					
California muhly (*Muhlenbergia californica*)	4.3	California muhly is a perennial rhizomatous herb that occurs in mesic seeps and streambeds in chaparral, coastal scrub, lower montane coniferous forest, and meadow habitat. It is typically found at elevations from approximately 250 to 6,500 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this record is presumed extant, this occurrence was recorded in 1899.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the Rio Hondo and San Gabriel River corridors. However, no occurrences have been documented within 5 miles of these locations. The occurrence near the Goodrich Substation site has not been documented since 1899, and no suitable habitat exists in this location. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
California orcutt grass (*Orcuttia californica*)	FE CE 1B.1	California orcutt grass is an annual herb that occurs in vernal pool habitats. It is typically found at elevations from approximately 50 to 2,150 feet.	April through August	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Polemoniaceae – Phlox Family					
Prostrate vernal pool navarretia (*Navarretia prostrata*)	1B.1	Prostrate vernal pool navarretia is an annual herb that occurs in mesic coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools. It is typically found at elevations from sea level to approximately 2,300 feet.	April through July	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1895 and is possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. Although there is one recorded occurrence for this species in close proximity to the Proposed Project area, it was recorded in 1895. **No Potential**
Polygonaceae – Buckwheat Family					
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	1B.1	Parry's spineflower is an annual herb that occurs in sandy or rocky substrates in openings of chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from approximately 900 to 4,000 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this occurrence is presumed extant, it was recorded in 1902.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, the only occurrence near the Proposed Project area was observed in 1902.In addition, the Proposed Project area is located outside of this species' elevation range. **Low Potential**
Slender-horned spineflower (*Dodecahema leptoceras*)	FE 1B.1	Slender-horned spineflower is an annual herb that occurs in sandy substrates in chaparral, cismontane woodland, and alluvial fan coastal scrub habitats. It is typically found at elevations from approximately 650 to 2,500 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded in 1920 and are extirpated.	Suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo and San Gabriel River corridors. No documented occurrences are within 5 miles of this portion of the Proposed Project area. **Low Potential**
Rosaceae – Rose Family					
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	1B.1	Mesa horkelia is a perennial herb that occurs in sandy or gravelly substrate in maritime chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from approximately 200 to 2,300 feet.	March through July	One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1911 and is extirpated. In addition to the occurrence listed previously, seven CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, these occurrences were recorded before 1940 and are either extirpated or possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area in south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Although there are recorded occurrences in close proximity to the Proposed Project area, all are from 1940 or earlier and are presumed extirpated. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Rubiaceae – Bedstraw Family					
San Gabriel bedstraw (*Galium grande*)	1B.2	San Gabriel bedstraw is a perennial deciduous shrub that occurs in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest habitats. It is typically found at elevations from approximately 1,400 to 4,000 feet.	May through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four records are presumed extant.	No suitable habitat for this species occurs in the Proposed Project area. The Proposed Project area is located outside of this species' elevation range. **No Potential**
Thelypteridaceae – Thelypteris Family					
Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*)	2B.2	Sonoran maiden fern is a perennial rhizomatous herb that occurs in meadow and seep habitat. It is typically found at elevations from approximately 150 to 2,000 feet.	January through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Themidaceae – Brodiaea Family					
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT CE 1B.1	Thread-leaved brodiaea is a perennial bulbiferous herb that occurs in herbaceous plant communities, such as valley needlegrass grassland, valley sacaton grassland, non-native grassland, alkali playa, and vernal pool habitats. These herbaceous communities occur in open areas on clay soils at elevations from 100 to 2,500 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Proposed Project area. **Low Potential**

Sources: CNDDB 2014, USFWS 2014, CNPS 2014

Figure 3:
Mesa Substation
CNDDB Plant Occurrences Map
Mesa 500 kV Substation Project

Proposed Project Area
5-Mile Buffer
CNDDB Plant Occurence

Parish's gooseberry
Peruvian dodder
mesa horkelia
southern mountains skullcap
Brand's star phacelia
southern tarplant
southern tarplant
southern tarplant
Parish's gooseberry
Nevin's barberry
Parish's gooseberry
San Bernardino aster
Plummer's mariposa-lily
Plummer's mariposa-lily
intermediate mariposa-lily
Plummer's mariposa-lily
intermediate mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
Plummer's mariposa-lily
intermediate mariposa-lily
intermediate mariposa-lily
Plummer's mariposa-lily
lucky morning-glory
southern tarplant
California Orcutt grass
prostrate vernal pool navarretia

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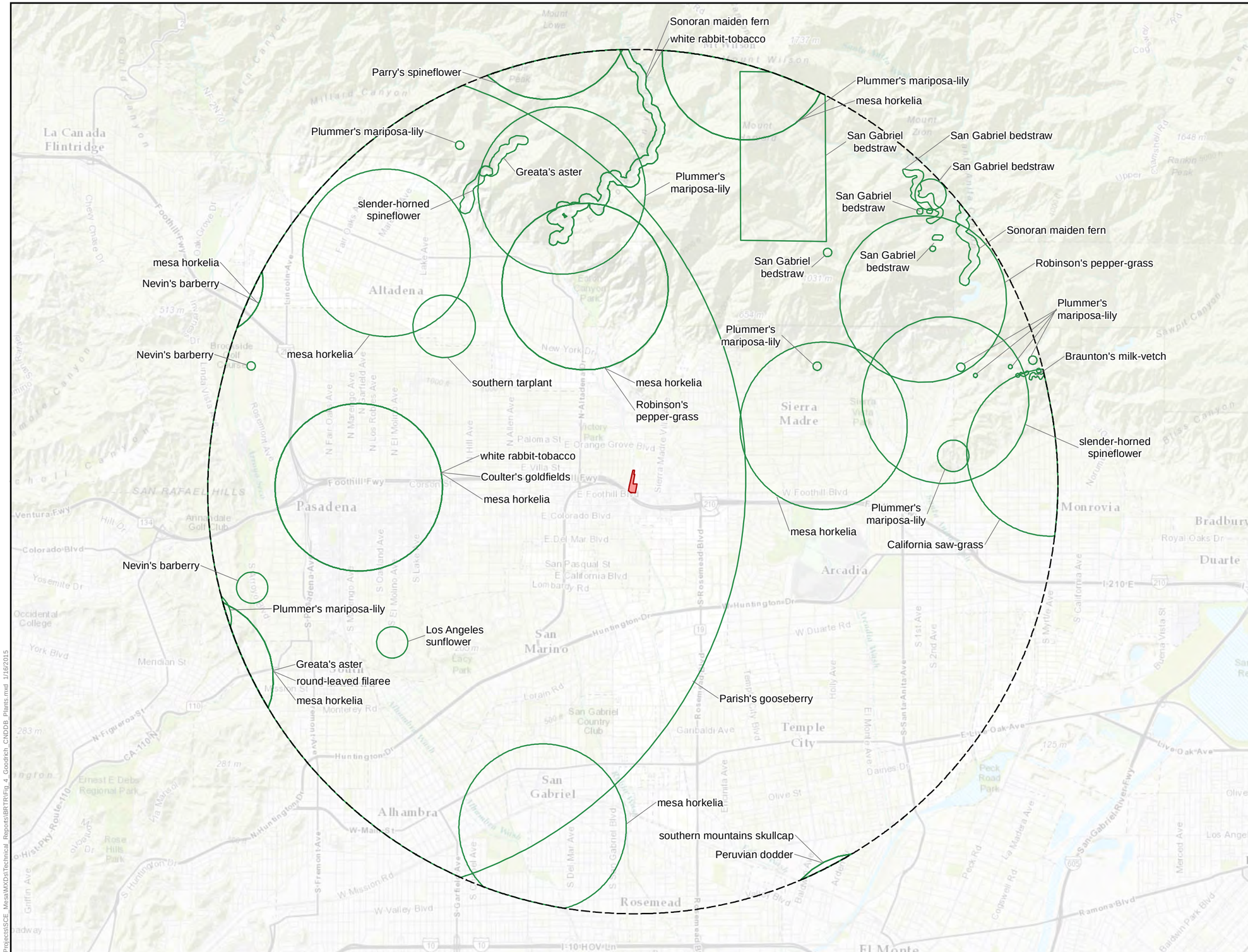
Figure 4:
Goodrich Substation
CNDDB Plant Occurrences Map
Mesa 500 kV Substation Project



Proposed Project Area
5-Mile Buffer
CNDDB Plant Occurrence

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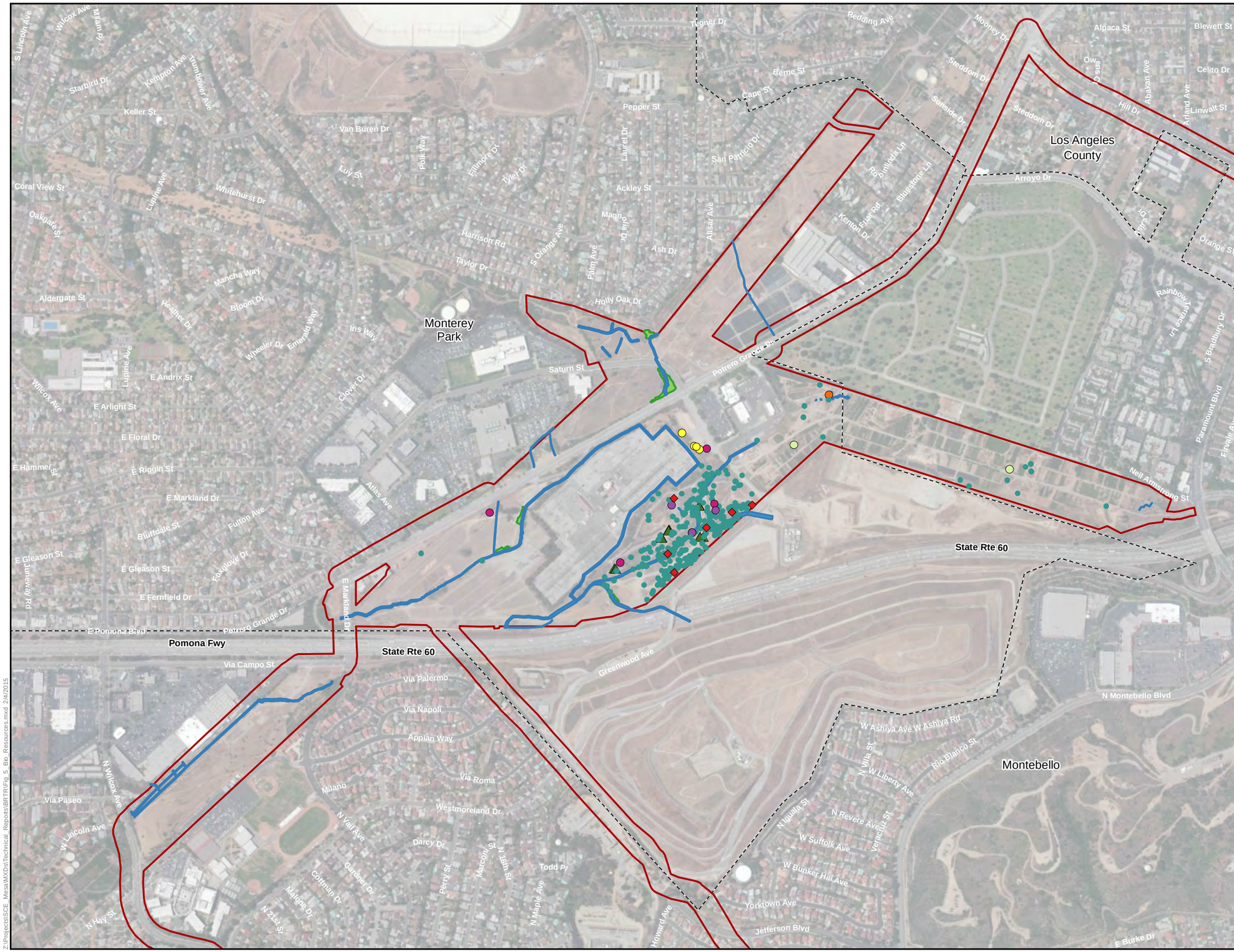
Figure 5:
Biological Resources Observations
Map 1 of 5

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area
City Boundary
Hydrologic Feature
Disturbed Riparian Woodland
California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
- Peregrine Falcon *(Falco peregrinus)*
- Swainson's Hawk *(Buteo swainsoni)*
- Yellow Warbler *(Dendroica petechia)*
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area

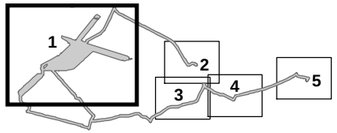


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Figure 5:
Biological Resources Observations
Map 2 of 5

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary
Hydrologic Feature
Disturbed Riparian Woodland
California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*
Loggerhead Shrike *(Lanius ludovicianus)*
Peregrine Falcon *(Falco peregrinus)*
Swainson's Hawk *(Buteo swainsoni)*
Yellow Warbler *(Dendroica petechia)*
Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

Coastal California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*

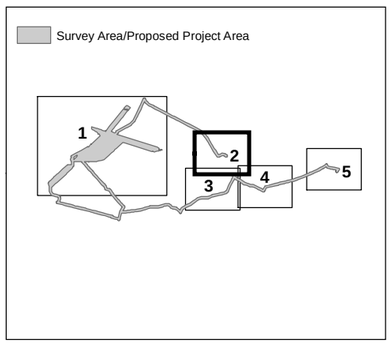

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Figure 5:
Biological Resources Observations
Map 3 of 5

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary
Hydrologic Feature
Disturbed Riparian Woodland
California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*
Loggerhead Shrike *(Lanius ludovicianus)*
Peregrine Falcon *(Falco peregrinus)*
Swainson's Hawk *(Buteo swainsoni)*
Yellow Warbler *(Dendroica petechia)*
Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

Coastal California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*

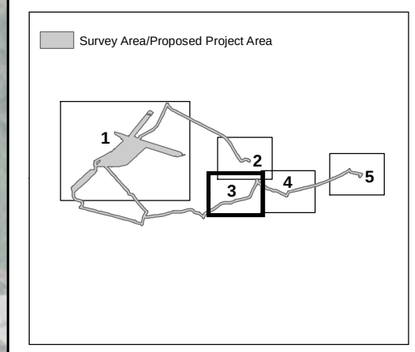

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Figure 5: Biological Resources Observations Map 4 of 5

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary
- Hydrologic Feature
- Disturbed Riparian Woodland
- California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
- Peregrine Falcon *(Falco peregrinus)*
- Swainson's Hawk *(Buteo swainsoni)*
- Yellow Warbler *(Dendroica petechia)*
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area

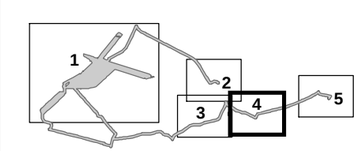

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Figure 5: Biological Resources Observations Map 5 of 5

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary
- Hydrologic Feature
- Disturbed Riparian Woodland
- California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
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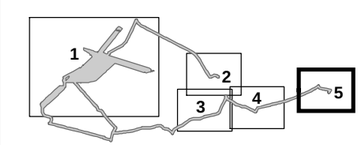
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area



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6.2.1 Species with Moderate Potential to Occur in the Proposed Project Area

Southern Tarplant

Southern tarplant (*Centromadia parryi* ssp. *australis*) is a CNPS 1B.1 species that occurs on the margins of marshes and swamps, seasonally moist valley and foothill grasslands, coastal scrub, and vernal pools at elevations less than 656 feet. It is an annual herb in the sunflower family (Asteraceae) that is endemic to Los Angeles, Orange, Santa Barbara, San Diego, and Ventura counties, and Baja California. This species blooms from May to November. Southern tarplant populations have been significantly reduced by habitat fragmentation due to development, grazing, and foot traffic. Three CNDDB occurrences of this species are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and two records are presumed extant. Both extant records are located within 0.5 mile of Mesa substation, within the Rio Hondo corridor. One CNDDB occurrence of this species is documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation. However, this occurrence has not been documented since 1931 and is presumed extirpated. Suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo Corridor.

Plummer's Mariposa-Lily

Plummer's mariposa-lily is a CNPS CRPR 4.2 species that occurs on seasonally moist ground, in granitic or rocky substrate in chaparral, cismontane woodland, coastal scrub, lower montane forest, and valley and foothill grassland habitats at elevations between 330 and 5,600 feet. It is an uncommon bulbiferous herb in the lily family (Liliaceae) that is endemic to California and only occurs in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. This species blooms from June to July. Plummer's mariposa-lily populations have been significantly reduced by development, and continue to decline. Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; all four records are presumed extant. Eight CNDDB occurrences of this species are documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation; seven of these occurrences are presumed extant and one is possibly extirpated. Suitable habitat for this species occurs in the Proposed Project site south of the Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor.

Intermediate Mariposa-Lily

Intermediate mariposa-lily is a CNPS List 1B.2 herbaceous bulbiferous perennial in the lily family (Liliaceae). It occurs in rocky and calcareous substrate in chaparral, coastal scrub, and valley and foothill grassland habitat at elevations from 350 to 2,800 feet and blooms from May to July. Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; all four occurrences are presumed extant. Suitable habitat for this species occurs in the Proposed Project site south of the Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. No CNDDB occurrences of this species are documented within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.3 GENERAL WILDLIFE SPECIES

A complete list of wildlife observed in the Proposed Project area during Insignia's 2014 field visits are presented in Attachment C: Wildlife Species Observed by Insignia in June and December 2014. Reptilian species observed in the Proposed Project area during Insignia's site visits include the western fence lizard. Avian species observed include the yellow-rumped warbler (*Dendroica* coronate), European starling, northern mockingbird, house finch, mourning dove, red-tailed hawk, American crow, and common raven (*Corvus corax*). Mammalian species observed during the site visits include Audubon's cottontail rabbit (*Sylvilagus audubonii*), California ground squirrel, and coyote (*Canis latrans*).

6.4 SPECIAL-STATUS WILDLIFE SPECIES

Special-status wildlife species with the potential to occur in the Proposed Project area are listed in Table 8: Special-Status Wildlife Species. CNDDB occurrences within 5 miles of the Proposed Project area are depicted in Figure 6: Mesa Substation CNDDB Wildlife Occurrences Map and Figure 7: Goodrich Substation CNDDB Wildlife Occurrences Map. A total of 18 special-status wildlife species were originally identified on the target survey list as having the potential to occur within the Proposed Project area. Of the 18 special-status wildlife species, one occurs in specialized habitat (e.g., aquatic environments above a 1,000-foot elevation) that does not occur within the Proposed Project area. Two species have undergone drastic declines and are extirpated in much of Southern California. Thus, these three wildlife species are not expected to occur in the Proposed Project area. CNDDB occurrences for the 15 remaining special-status wildlife species were identified within 5 miles of the Proposed Project, as shown in Figure 6: Mesa Substation CNDDB Wildlife Occurrences Map and Figure 7: Goodrich Substation CNDDB Wildlife Occurrences Map. Three additional special-status wildlife species—Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and western yellow bat (*Lasiurus xanthinus*)—are included in Table 8: Special-Status Wildlife Species due to the presence of suitable habitat or the fact that they were observed in the Proposed Project area during surveys. Of the 21 special-status wildlife species included in Table 8: Special-Status Wildlife Species, the following determinations were made:

- Seven species—Belding's orange-throated whiptail, American peregrine falcon (*Falco peregrinus anatum*), coastal California gnatcatcher, least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), Swainson's hawk (*Buteo swainsoni*), and yellow warbler (*Setophaga petechia*)—were present

- Four species—western spadefoot (*Spea hammondii*), western pond turtle (*Emys marmorata*), western burrowing owl (*Athene cunicularia*), and southern grasshopper mouse (*Onychomys torridus ramona*)—were determined to have a moderate potential to occur

- Seven species—Blainville's horned lizard (*Phrynosoma blainvillii*), southwestern willow flycatcher (*Empidonax traillii extimus*), American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), San Diego black-tailed jackrabbit, western mastiff bat (*Eumops perotis californicus*), and western yellow bat (*Lasiurus xanthinus*)—were determined to have a low potential to occur

Table 8: Special-Status Wildlife Species

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Amphibians				
Southern mountain yellow-legged frog (*Rana muscosa*)	FE CE	This species is endemic to the southern Sierra Nevada and Transverse Ranges. It inhabits high mountain lake, stream, pond, and isolated pool habitat. Alpine lakes where this species occurs usually have water depths greater than 8.2 feet and have open shorelines with margins that are grassy or muddy. Breeding habitat consists of ponds, lakes, and streams that do not dry out in the summer, are deep enough that they don't freeze in the winter, and do not contain predatory fish. Breeding activity for southern mountain yellow-legged frog begins early in the spring and can range from April at lower elevations to June and July in higher elevations. Adults tend to move between breeding, feeding, and overwintering habitats throughout the course of the year. This species is typically found at elevations from approximately 1,000 to 12,000 feet.	Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site; however, these occurrences are extirpated.	No suitable habitat for this species occurs within the Proposed Project area. In addition, the Proposed Project area is located below the typical elevation range associated with this species. **No Potential**
Western spadefoot (*Spea hammondii*)	SSC	This species prefers areas of open vegetation and short grasses with sandy or gravelly soils. The western spadefoot frequents washes, floodplains of rivers, and alkali flats but can range into foothills and mountains. Throughout most of the year, this species resides in underground burrows. Breeding occurs in shallow, temporary pools formed by heavy winter rains.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs along the floodplains of the Rio Hondo and San Gabriel River corridors within the Proposed Project area. Suitable habitat also exists in the Montebello Hills within the Proposed Project area. **Moderate Potential**
Reptiles				
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	SSC	This species inhabits washes, streams, and sandy areas with rocks, patches of brush, and dry, often rocky hillsides. These lizards can also be found along ridges and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	This species was observed in the Montebello Hills area within the Proposed Project area during a December 2014 habitat assessment survey. **Present**

[9] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally Endangered Species
-FT: Federally Threatened Species
-FC: Candidate for Federal Listing

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-FP: Fully protected species
-SSC: Species of Special Concern

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Blainville's horned lizard (*Phrynosoma blainvillii*)	SSC	Blainville's horned lizard is found in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. It occurs in valley-foothill hardwood, conifer woodland, riparian woodland, pine-cypress woodland, juniper woodland, and annual grassland habitats. This species inhabits open country, especially sandy areas, washes, floodplains, and wind-blown deposits. It typically forages on the ground in open areas, usually between shrubs. It is typically found at elevations up to approximately 6,000 feet.	Three CNDDB records of this species are documented within 1 mile of the Mesa Substation site; however, these records are possibly extirpated. Two CNDDB occurrences are documented within 5 miles of the Proposed Project area and both records are presumed extant. Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site. All four occurrences are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area but is fragmented and limited. Records listing this species as extant within the Proposed Project area are over 30 years old or include specimens housed in a museum with no data collection information. Much of the habitat located along the San Gabriel River corridor has since been lost to channelization. **Low Potential**
Western pond turtle (*Emys marmorata*)	SSC	This species is found throughout California west of the Sierra-Cascade crest. It is absent from desert regions except in the Mojave Desert along the Mojave River and its tributaries. It occurs in aquatic habitat with permanent or nearly permanent water in a wide variety of habitat types. Western pond turtle requires basking sites within aquatic habitat such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. This species is typically found at elevations below 4,700 feet.	Two CNDDB occurrences of this species are documented within 0.25 mile, one of which is presumed extirpated and one of which is presumed extant. Two CNDDB records are documented within 5 miles of the Mesa Substation site; however, both records are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	The Proposed Project area contains suitable aquatic and nesting habitat for this species along the San Gabriel River corridor, which has direct connectivity to known CNDDB locations. Habitat also exists along the Rio Hondo corridor. Some CNDDB occurrences may have been extirpated due to loss of aquatic habitat in other locations. **Moderate Potential**
Birds				
American peregrine falcon (*Falco peregrinus anatum*)	FP	This species is a year-round resident in California and is found in a variety of habitats. This species nests on vertical structures, such as niches in cliffs, steep banks, and ledges in close proximity to water. This species prefers to nest on coastal cliffs and bluffs; however, American peregrine falcon is also found nesting in urban areas on tall buildings and bridges. This species generally occurs in areas where an abundant food source is present, such as seabird colonies, waterfowl concentrations, or urban pigeons. This species typically forages in open habitats. Transient and wintering birds occur most frequently at lower elevations, but they have occurred from sea level to over 8,000 feet. Breeding generally occurs in mountainous and coastal areas, and egg-laying generally occurs from February to March.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. This record is presumed extant.	Because tall vertical structures and open water habitats are limited near the Proposed Project area, only marginal nesting habitat for American peregrine falcon occurs. However, this species was observed on the Mesa Substation site and east of the Rio Hondo corridor during surveys conducted for the TRTP. No nest was associated with these observations; this species was likely foraging in or flying through the Proposed Project area. **Nesting: Low Potential** **Foraging: Present**
Bank swallow (*Riparia riparia*)	CT	Bank swallow is a migratory species spending the winter months in Central and South America. It is a colonial nester in lowland river bank habitats and coastal bluffs. This species nests in earthen banks and bluffs, as well as in sand and gravel pits, primarily in riparian habitats. In its present range in California, this species primarily nests in steep earthen river banks that are subject to frequent water erosion. Nest sites consist of burrows dug into a vertical earthen bank to a depth of 18 to 36 inches. Breeding typically occurs from late March to mid-July. This species forages a few inches over water, or within grassland and certain croplands immediately adjacent to their nest colonies.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site; however, both records are extirpated. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1894 and is extirpated.	Habitat for this species occurs in the Proposed Project area, but this species is known by the CDFW to be extirpated from all of Southern California. **No Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Coastal California gnatcatcher (*Polioptila californica californica*)	FT SSC	Coastal California gnatcatcher is an obligate, permanent resident of coastal sage scrub vegetation. It makes limited use of adjacent habitats outside of the breeding season. The species typically occurs in areas dominated by California sagebrush and California buckwheat. Other shrubs in the coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include brittlebrush (*Encelia californica*), deerweed (*Lotus scoparius*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*).. The species is restricted to elevations from sea level to approximately 2,000 feet. Coastal California gnatcatcher breeds from February to late August, but most of the breeding occurs between mid-March and mid-May.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, and three CNDDB occurrences are documented within 5 miles of the Mesa Substation site. All five records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1928 and is extirpated.	Critical habitat for this species occurs in the Montebello Hills and San Gabriel River corridor within the Proposed Project area. Coastal California gnatcatchers were observed foraging and nesting within marginal habitat at the Mesa Substation site during the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys. In addition, this species was observed foraging at multiple locations in the Montebello Hills, the Rio Hondo corridor, and the San Gabriel River corridor. **Nesting: Present** **Foraging: Present**
Least Bell's vireo (*Vireo bellii pusillus*)	FE CE	Least Bell's vireo is a rare and local summer visitor from mid-March to the end of August and ranges from sea level in coastal areas to approximately 1,500 feet in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mulefat scrub, and cottonwood-willow forests. During the breeding season, this species may forage in adjacent upland habitats. Little is known about this species' winter habitat, but it is not exclusively dependent on riparian woodland during winter. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palm groves and hedgerows associated with agricultural fields and rural residential areas. Breeding typically occurs from late March to late September.	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Five CNDDB occurrences are documented within 5 miles of the Mesa Substation site, three of which are possibly extirpated and two of which are presumed extant. Observations of this species including one pair were recorded by Whittier Narrows Nature Center staff at three locations within the Whittier Narrows Recreation Area between April and July 2014. Three CNDDB occurrences are documented within 5 miles of the Goodrich Substation site. However, two occurrences were recorded in 1923 and 1895 and are possibly extirpated. The third was recorded in 1924 and is presumed extant.	Suitable habitat for least Bell's vireo nesting and foraging occurs in the Montebello Hills, and along the San Gabriel River corridor within the Proposed Project area, where this species is known to occur. This species was observed nesting and foraging in the Mesa Substation site, the Montebello Hills, the Rio Hondo corridor and the San Gabriel River corridor during surveys conducted for the TRTP. **Nesting: Present** **Foraging: Present**
Loggerhead shrike (*Lanius ludovicianus*)	SSC	Loggerhead shrike is present year-round throughout California. This species typically breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs, trees, fences, or powerlines for hunting perches, nest placement, territorial advertisement, and pair maintenance. They also require open areas of short grasses, forbs, or bare ground for hunting. Impaling sites—such as sharp, thorny plants or barbed wire fences—are important for this species to manipulate or store prey. Breeding in Southern California typically occurs from as early as January to July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Montebello Hills and the San Gabriel River corridor within the Proposed Project area. Breeding pairs have declined extensively within Los Angeles County and are now rare. This species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Proposed Project area. **Nesting: Low Potential** **Foraging: Present**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE CE	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat includes willows, mulefat, box elder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arroweed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet, but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One of these occurrences is also documented within 0.25 mile of the Goodrich Substation site.	Suitable breeding or foraging habitat for this species occurs in the Proposed Project area; however, the occurrences near these areas were recorded in 1894 and 1906 when more riparian habitat would have been present. **Low Potential**
Swainson's hawk (*Buteo swainsoni*)	CT	Swainson's hawk breeds in the western U.S. and Canada and winters in South America. This species breeds in trees within mature riparian forests, oak groves, and in mature roadside trees in close proximity to large, open expanses of suitable foraging habitat. Over 85 percent of documented Swainson's hawk nests trees are often found in riparian systems; therefore, this habitat type is likely very important. Suitable foraging habitat includes native grassland or lightly grazed dryland pasture, alfalfa and other hay crops, and row crops. Swainson's hawk does not forage in vineyards, orchards, or cotton fields because prey is not available in these areas during most of the breeding season.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1880 and is possibly extirpated. This occurrence is also documented within 5 miles of the Goodrich Substation site.	Marginal habitat for nesting Swainson's hawk occurs in the Proposed Project area primarily within non-native woodland; however, nesting populations in the Los Angeles Basin are now considered extremely rareThis species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; this species was likely foraging in or flying through the Proposed Project area during migration. **Nesting: No Potential** **Foraging: Present**
Western burrowing owl (*Athene cunicularia*)	SSC	Western burrowing owl lives in dry, open areas with no trees and short grass. The species is found in golf courses, cemeteries, airports, vacant lots, university campuses, pastures, and prairie dog (*Cynomys* spp.) towns. It nests in burrows that are often dug by a small mammal, especially the California ground squirrel. Western burrowing owl is generally found at elevations from approximately 200 to 5,000 feet. This species breeds from March to August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1895 and is presumed extant.	Suitable habitat for this species occurs in grassland vegetation where burrows are present within the Proposed Project area. No western burrowing owls or western burrowing owl sign (i.e., feathers, pellets, or whitewash) were observed during the 2009 and 2010 focused burrowing owl surveys conducted for the TRTP, or during the 2014 habitat assessment surveys. **Moderate Potential**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC CE	Western yellow-billed cuckoo arrives in California as early as May and departs by mid-September. This species prefers to nest in open woodlands with clearings and dense scrubby vegetation, often along water. Breeding habitat generally consists of mixed old growth riparian forests consisting of willow and cottonwood. Breeding generally occurs in the summer between May and August at elevations below 2,500 feet.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Yellow warbler (*Setophaga petechia*)	SSC	Yellow warbler occurs as a migrant and summer resident in California. This species generally occupies riparian vegetation in close proximity to water along streams and wet meadows. They are often associated with willow and cottonwood trees in riparian areas. Breeding generally occurs from April to late July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable nesting habitat for yellow warbler occurs in the Rio Hondo and San Gabriel River corridors within the Proposed Project area; however, the habitat is fragmented. This species was observed within the Mesa Substation site, in the Montebello Hills, and in Rio Hondo and San Gabriel River corridors during surveys conducted for the TRTP. No nest was associated with these observations. **Nesting: Low Potential** **Foraging: Present**
Mammals				
American badger (*Taxidea taxus*)	SSC	American badger occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. The species is also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. It is sometimes found at elevations up to 12,000 feet, but is usually found in the Sonoran and Transition life zones (elevations lower and warmer than those characterized by coniferous forests). American badgers are occasionally found in open chaparral (with less than 50-percent plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 feet to 10 feet in depth and 4 feet to 6 feet in width. Breeding generally occurs between December and February and cubs are born between March and April.	There is one CNDDB occurrence of this species within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for American badger occurs within the Proposed Project area; however, no burrows or dens of suitable size for American badger were observed during field surveys conducted by Insignia in June 2014 or December 2014. **Low Potential**
Pallid bat (*Antrozous pallidus*)	SSC	Pallid bat inhabits deserts, grasslands, shrublands, woodlands, and forests. It is generally found in the Sonoran life zone, at elevations from 100 to 7,000 feet. It is most commonly found in open, dry habitats with rocky areas for roosting. The species roosts in rocky outcrops, snags, and abandoned man-made structures. Pallid bat mating may occur as early as October and continues through February.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both occurrences were recorded before 1932 and are presumed extant. These two occurrences, along with three other CNDDB occurrences of this species, are also documented within 5 miles of the Goodrich Substation site. All five occurrences were recorded before 1932.	Marginally suitable habitat for foraging pallid bats and man-made structures for roosting pallid bats are present within the Proposed Project area. **Low Potential**
San Diego black-tailed jackrabbit (*Lepus californicus bennettii)*	SSC	San Diego black-tailed jackrabbit generally occurs in open areas or semi-open country with scattered low shrubs. It typically occurs in grasslands, agricultural fields, or sparse coastal sage scrub, at elevations ranging from sea level to 6,000 feet. It is generally not found in chaparral or woodland habitats. The length of the breeding season depends on the duration and severity of winter. In California, this species can breed throughout the year.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	The Proposed Project area falls within the range of this species. Suitable habitat for this species occurs throughout the natural areas of the Proposed Project area. **Low Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Southern grasshopper mouse (*Onychomys torridus ramona*)	SSC	Southern grasshopper mouse occurs in desert areas, especially in scrub habitats with friable soils for digging. This species' preferred habitat consists of alkali desert scrub and desert scrub habitat; however, it can also be found in succulent shrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitat. This species is uncommon in valley foothill and montane riparian habitats. The peak breeding season for this species is from May to July, but it may start breeding as early as January under ideal conditions.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1904 and is presumed extant.	Suitable habitat for this species occurs in the Proposed Project area. **Moderate Potential**
Western mastiff bat (*Eumops perotis californicus*)	SSC	Western mastiff bat inhabits arid and semi-arid lowlands in the Lower Sonoran life zone of California at elevations from 100 to 4,000 feet. This species occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodland, coastal scrub, annual and perennial grassland, palm oases, chaparral, desert scrub, and urban habitats. The species primarily roosts in crevices in vertical cliffs—usually granite or consolidated sandstone—and in broken terrain with exposed rock faces. It is also found occasionally in high buildings, trees, and tunnels. Western mastiff bat roost sites may change from season to season. Due to its large size, it needs vertical faces to drop from in order to take flight. Western mastiff bat nursery roosts can be found in tight rock crevices. Breeding likely occurs from April through September.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four occurrences were recorded before 1958 and are presumed extant.	Marginally suitable habitat for western mastiff bat occurs within palms and buildings in the Proposed Project area. **Low Potential**
Western yellow bat (*Lasiurus xanthinus*)	SSC	Western yellow bat occur in palm oases, but may also use ornamental palms in landscaping. In California, this species appears to roost exclusively in skirts of palm trees and is limited in its distribution by the availability of palm habitat. Yellow bats likely do not hibernate, as activity has been observed year-round. Breeding likely occurs from late April through July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for western yellow bat occurs within ornamental palms in the Proposed Project area. **Low Potential**

Sources: CNDDB 2014, CDFW 2011, USFWS 2014

Figure 6:
Mesa Substation
CNDDB Wildlife Occurrences Map

Mesa 500 kV Substation Project

Proposed Project Area
5-Mile Buffer
CNDDB Wildlife Occurrence

southwestern willow flycatcher
western mastiff bat
Swainson's hawk
southwestern willow flycatcher
pallid bat
pallid bat
least Bell's vireo
bank swallow
coast horned lizard
western yellow-billed cuckoo
western pond turtle
southwestern willow flycatcher
burrowing owl
coast horned lizard
western pond turtle
American badger
western pond turtle
western pond turtle
coastal California gnatcatcher
least Bell's vireo
coast horned lizard
coastal California gnatcatcher
least Bell's vireo
coast horned lizard
bank swallow
least Bell's vireo
least Bell's vireo
coastal California gnatcatcher
coast horned lizard
burrowing owl
least Bell's vireo
western spadefoot
coastal California gnatcatcher
coastal California gnatcatcher

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

1:85,000
0 1 2 Miles

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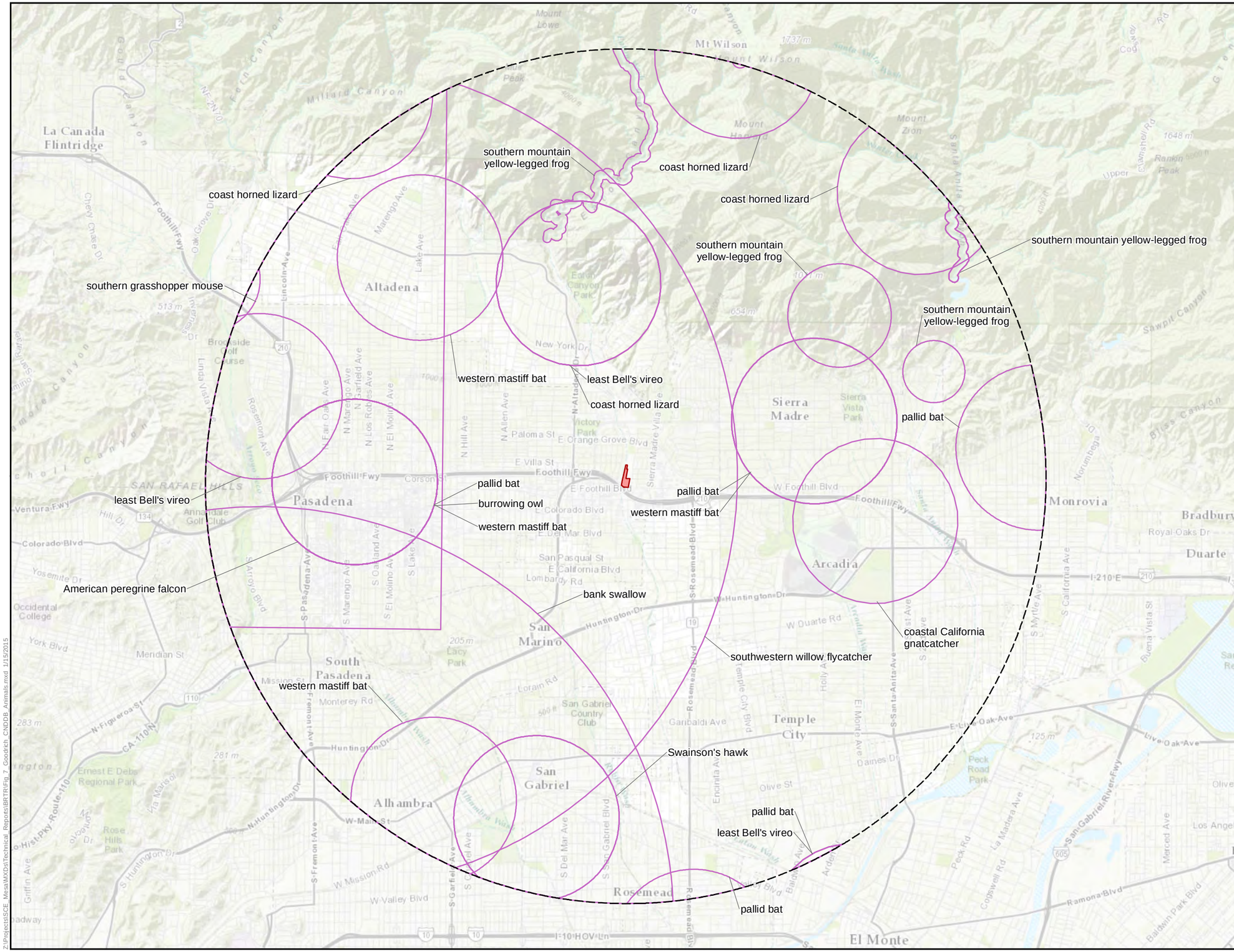
Figure 7:
Goodrich Substation
CNDDB Wildlife Occurrences Map

Mesa 500 kV Substation Project



Proposed Project Area

5-Mile Buffer

CNDDB Wildlife Occurrences

1:72,000

0 1 2 Miles

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- Three species—southern mountain yellow-legged frog (*Rana muscosa*), bank swallow (*Riparia riparia*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)—were determined to have no potential to occur

A detailed discussion regarding local populations, habitat requirements, and life history is provided in the following subsection for the wildlife species that are present in the Proposed Project area.

6.4.0 Species Present in the Proposed Project Area

Belding's Orange-Throated Whiptail

Belding's orange-throated whiptail is a state SSC and frequents dry, often rocky hillsides, ridges and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species. It is found an elevation range that extends from near sea level to approximately 3,430 feet. Breeding usually takes place in May, although it has occasionally been observed in July. This species was observed in the Montebello Hills section along North Lincoln Avenue during Insignia's December 2014 survey, as depicted in Figure 5: Biological Resources Observations Map. This species was observed basking near a shrub along the roadside, when the weather was clear and sunny. No CNDDB occurrences were recorded within 5 miles of the Proposed Project area.

American Peregrine Falcon

The American peregrine falcon is a California Fully Protected species. This species is found on all continents but Antarctica. Historically, the American peregrine falcon occurred throughout most of California. Brought to near-extinction by the widespread use of the pesticide DDT, the peregrine falcon was listed as endangered under the FESA. This species has slowly been recovering in California and elsewhere due to legislation that banned the use of DDT in the U.S. By 1990, the population in California had increased to over 100 breeding pairs. In 1999, the American peregrine falcon was delisted from the FESA. The American peregrine falcon has since reoccupied much of its historic breeding range in California, which now includes the central and southern California coast, inland northern Coast Ranges, Klamath Mountains, Cascade Ranges, and the Sierra Nevada. Its migration and winter range includes the West Coast from the Oregon border to the Mexican border and into the adjacent mountains.

American peregrine falcon is adapted to open habitat in all seasons. This species shows a preference for breeding and nesting in sites such as niches in cliffs, steep banks, and ledges. Nest sites usually provide a panoramic view of open country, are near water, and are associated with local abundance of passerine, waterfowl, shorebird, or seabird prey. Coastal cliffs and bluffs are favored nesting sites in California. This species is also found in urban areas and uses tall buildings, bridges, and other structures for nesting. This species has been known to nest at elevations as high as 10,000 feet, but most occupied nest sites are below 4,000 feet. The breeding season for this species occurs from February through June. The American peregrine falcon was observed at four locations within developed/disturbed habitat and ruderal habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. In addition, this species was observed along Durfee Avenue, just east of the Rio Hondo corridor. No nest was associated with these species observations and only limited nesting habitat is present within the Proposed Project area, primarily in the form of

buildings or other man-made structures. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a federally threatened species and a state SSC. This species is a non-migratory songbird. In the U.S., coastal California gnatcatcher is found west of the Transverse and Peninsular ranges in coastal Southern California. This species is primarily found at elevations below 800 feet along the coast and up to 1,600 feet inland (Atwood and Bontrager 1992). The largest populations of this species are located in San Diego, Orange, and Riversides counties, with smaller populations located in Los Angeles County, southwestern San Bernardino County, and southern Ventura County (Atwood and Bontrager 2001). As of 1990, the coastal California gnatcatcher population in California was estimated at 2,000 or fewer pairs (USFWS 2010a). The coastal California gnatcatcher occurs in the coastal sage scrub vegetation communities of southern California, especially in locations dominated by California sagebrush and California buckwheat. Other shrubs in coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include California bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber*).

The breeding season for coastal California gnatcatcher extends from approximately February through August, with peak nesting activity occurring from mid-March through mid-May. Incubation takes 14 days. The young fledge at eight to 13 days of age and are dependent on their parents for up to three or four weeks; however, fledglings may associate with their parents for several months (USFWS 1997). Foraging by coastal California gnatcatcher primarily consists of gleaning sessile prey from foliage while quickly moving through branches of shrubs. Larger prey items are beaten against a branch before being swallowed whole or fed to juveniles (Atwood and Bontrager 2001).

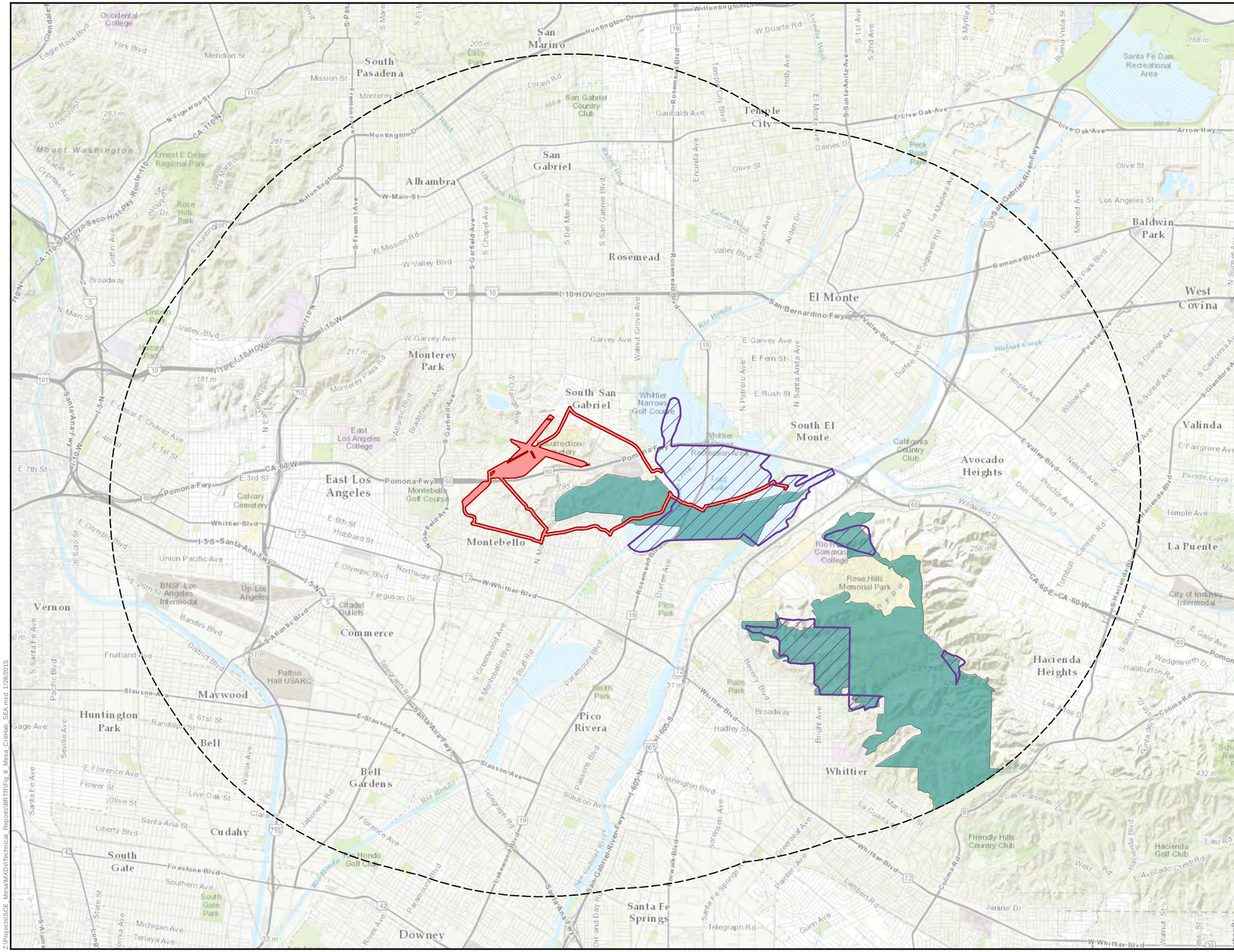
Critical habitat for coastal California gnatcatcher occurs within the Proposed Project area along a 1.1 mile length of the proposed telecommunications line route that traverses the Montebello Hills and the Rio Hondo and San Gabriel River corridors, as depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map. Two CNDDB occurrences have been documented within 0.25 mile of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and one CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site.

During the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys, this species was observed foraging and nesting within the Mesa Substation, as shown in Figure 5: Biological Resources Observations Map. At this location, coastal California gnatcatcher was observed in ruderal vegetation that would be considered marginal for this species, and in a small patch of coastal sage scrub on the southeastern margin of the Mesa Substation site. Coastal California gnatcatcher was also observed foraging in and east of the Montebello Hills and in the Rio Hondo and San Gabriel River corridors, in coastal sage scrub, mulefat scrub, ruderal, non-native woodland, and southern sycamore-alder riparian woodland.[10]

[10] Additional records of coastal California gnatcatcher observations from 2014 were provided to Insignia biologists by Whittier Narrows Nature Center staff.

Figure 8:
Mesa Substation Critical Habitat and Significant Ecological Areas Map

Mesa 500 kV Substation Project



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Least Bell's Vireo

Least Bell's vireo is a federally and state endangered migratory songbird species. The current breeding distribution for this species is restricted to Monterey, San Benito, and Inyo counties, as well as numerous small populations south of the Tehachapi Mountains in California and portions of northern Baja California in Mexico. Least Bell's vireo is an obligate riparian species during the breeding season and prefers early successional habitat. This species typically inhabits structurally diverse woodlands along watercourses, including cottonwood and willow forests, oak woodlands, and mulefat scrub. The presence of dense cover within 3 to 6 feet of the ground is where nests are typically placed, and a dense, stratified canopy for foraging also appears to be an important factor for least Bell's vireo breeding. Least Bell's vireo nest placement tends to occur in openings within the riparian woodland and along the riparian edge. Nests are placed in a variety of plant species, including willows, mulefat, Fremont's cottonwood, California sycamore, coast live oak, and several herbaceous species. Although least Bell's vireos are tied to riparian habitat for nesting, they have been observed foraging within adjacent upland habitats (up to 200 feet away). This species typically breeds from late March to late September.

This species was observed at multiple locations within the Proposed Project area. Two least Bell's vireo nests were identified within the Rio Hondo corridor during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. In addition, this species was observed foraging in the Mesa Substation site, the Montebello Hills, and the Rio Hondo corridor and the San Gabriel River corridor. This species has also been documented as nesting in the Whittier Narrows Natural Area in the San Gabriel River corridor.[11] Six CNDDB occurrences have been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation.

Loggerhead Shrike

The loggerhead shrike is a state SSC that is present year-round throughout most of the California range. Loggerhead shrike breeds mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. This species requires tall shrubs or trees, as well as fences or power lines, for hunting perches, territorial advertisement, and pair maintenance. Loggerhead shrikes require open areas of short grasses, forbs, or bare ground for hunting. Nests are placed in large shrubs or trees. This species also requires impaling sites—such as barbed wire fences or sharp, thorny plants—to manipulate or store prey. In Southern California, this species typically breeds from as early as January to July.

This species was observed within the developed/disturbed habitat and ruderal habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Proposed Project area. Although suitable habitat exists for this species within the Proposed Project area, it has been documented that breeding pairs within Los Angeles County have declined drastically (CDFG 2008). Thus, this habitat likely would only be used for foraging. No CNDDB occurrences have been documented

[11] Additional records of least Bell's vireo observations from 2014 were provided to Insignia biologists by Whittier Narrows Nature Center staff.

within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; or within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Swainson's Hawk

Swainson's hawk is a state-listed threatened large, broad-winged buteo that frequents open country. It occurs in California during the breeding season from March through September. Swainson's hawks winter in South America and Mexico. This species primarily consumes insects and small rodents while foraging in large, open plains, fields, pastures, and grasslands. Hay, grain, and most row crops also provide suitable foraging habitat during at least part of the breeding season. Vineyards and orchards are unsuitable because prey is scarce or unavailable due to vegetation density (Estep 1989). Swainson's hawks usually nest in large trees, preferring native species such as valley oak, Fremont's cottonwood, willow, sycamores (*Platanus* spp.), and walnuts. Most nest sites are found in riparian habitats, but the species may also use mature roadside trees, isolated individual trees in agricultural fields, small groves of oaks, and trees around farmhouses (Schlorff and Bloom 1983). Nest sites are generally adjacent to or within easy flying distance to suitable foraging habitat.

This species was observed on two separate occasions within developed/disturbed nursery habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nests were associated with these species observations. The observations occurred in February and April, when this species is known to migrate. The site is located along a known migration route for Swainson's hawks; therefore, this species was likely foraging or flying through the Mesa substation. There is one CNDDB occurrence of this species nesting within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1880. Marginally suitable habitat for nesting exists in non-native woodland within the Proposed Project area; however, this species has long been considered extirpated from breeding within southern California. The CDFG conducted a statewide inventory project for Swainson's hawk breeding pairs in 2005 and 2006 (CDFG 2007) and although they include a current breeding range that extends into southern California, they did not detect any pairs south of Madera County. The inventory classifies the southern portion of the range as "sparse," indicating that some pairs may exist but are too rare to effectively sample. Due to the rarity of breeding Swainson's hawks in the Los Angeles area and the marginal breeding habitat quality, this species is considered to have no potential to breed within or near the Proposed Project site.

Yellow Warbler

Yellow warbler is a state SSC. This species occurs in California as a migrant and summer resident from late March through early October. This species may be found at elevations up to 9,000 feet. Yellow warbler generally occupies riparian vegetation in close proximity to water along streams and in wet meadows (Lowther et al. 1999). This species is often found in willows and cottonwoods; however, in California they are also found in numerous other species of riparian shrubs or trees. The yellow warbler is a generalist forager and appears to adapt its foraging to the variation in local vegetation structure (Petit et al. 1990). In California, the yellow warbler makes several nesting attempts throughout the breeding season and typically produces only one brood per year. This species typically breeds from April to late July.

This species was observed within non-native woodland habitat on the Mesa Substation site, and ruderal, scrub and woodland habitat in the Montebello Hills and Rio Hondo and San Gabriel River corridors during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nest was associated with these species observations. No suitable nesting habitat is present in the Mesa Substation site; Suitable nesting habitat is present occurs in the Rio Hondo and San Gabriel River corridors within the Proposed Project area. No CNDDB occurrences for this species have been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; or within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.4.0 Species with a Moderate Potential to Occur in the Proposed Project Area

Western Spadefoot

Western spadefoot is a state SSC and occurs in a variety of vegetation communities, including open grasslands and woodlands in areas of seasonally ponded water. This species prefers open areas with sandy or gravel-laden soils. Vernal pools, rain pools, or ponds that do not contain bullfrogs, fish, or crayfish are essential for breeding and egg-laying. This species spends most of its time underground, but often emerges during the rainy season.

Habitat for this species can be found along the Rio Hondo and San Gabriel River corridors within the Proposed Project area. Open areas of scrub habitat within the Montebello Hills where water may puddle during the rainy season may also provide habitat. One CNDDB occurrence of this species has been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One occurrence has been documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Western Pond Turtle

The western pond turtle is a state SSC and usually occurs in areas of calm freshwater environments, but can also occur in brackish and saltwater for short periods of time. It occupies a wide variety of aquatic habitats, including ponds, lakes, rivers, streams, marshes, sloughs, and wetlands. This species digs nests and occupies upland habitats in woodlands and grasslands, usually close to water. Sexual maturity is reached at a minimum of six years old. Approximately five to 13 eggs are typically laid from April through August, up to 0.5 mile from water. Eggs are generally laid once per year, but can be laid twice per year in some instances.

The Proposed Project area contains suitable aquatic and nesting habitat for this species along the San Gabriel River corridor, which has direct connectivity to known CNDDB locations. Habitat also exists along the Rio Hondo corridor. Two CNDDB occurrences of this species have been documented within 0.25 mile of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and two CNDDB occurrences have been documented within 5 miles. No CNDDB occurrences were documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Western Burrowing Owl

The western burrowing owl is a state SSC and is found in dry, open habitats such as grasslands and prairies with low-growing or no vegetation, where it occupies underground burrows,

typically those of the California ground squirrel. It can also occur in open areas of farmland, levee banks, and other disturbed or managed habitats where burrows or burrow-like refuges (e.g., small-diameter pipes, rock piles with voids, or similar hollow spaces) are present. The species breeds from February 1 through August 30. Young are capable of full flight at six weeks of age and are fed by parents for approximately one year.

Suitable habitat for this species exists within the Proposed Project area in grassland vegetation where burrows are present. Focused burrowing owl surveys were conducted for the TRTP during 2009 and 2010. Although the surveys did not find any burrowing owls or sign of burrowing owls, they were limited to a small portion of the Proposed Project area. Two CNDDB occurrences of this species are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One CNDDB occurrence is documented within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

Southern Grasshopper Mouse

The southern grasshopper mouse is a state SSC and inhabits desert areas, especially scrub habitats with friable soils for digging. This species can be found in a variety of habitats, including desert scrub, alkali desert scrub, and succulent shrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitat. Breeding for this species peaks from May to July, but it may breed as early as January under ideal conditions.

Suitable habitat for this species occurs in the Proposed Project area within the Montebello Hills, and along the Rio Hondo and San Gabriel River corridors. No CNDDB occurrences are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and one CNDDB occurrence is documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

6.5 SENSITIVE NATURAL COMMUNITIES

6.5.0 Special-Status Natural Communities

Special-status natural communities are defined as communities that are of limited distribution statewide or within a county or region, and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status species or their habitats. The most current version of the CDFG's List of California Terrestrial Natural Communities indicates which natural communities are of special status (CDFG 2003). Communities with a state ranking of 1 to 3 are considered special-status. The rankings are defined as follows:

- S1, Critically Imperiled: Critically imperiled in the State because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province

- S2, Imperiled: Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province

- S3, Vulnerable: Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation

6.5.1 Riparian Communities

Many riparian communities are considered sensitive natural communities in California because of the habitat they provide for special-status plant and wildlife species and their limited distribution in California. Riparian vegetation occurs along perennial or intermittent drainages that typically are subject to seasonal flooding. Most natural riparian vegetation in Southern California has been lost or degraded by the following:

- Land use conversions to agricultural, urban, and recreational uses
- Channelization for flood control
- Sand and gravel mining
- Groundwater pumping
- Water impoundments

Disturbed riparian woodland was documented along ephemeral drainages in the vicinity of Mesa Substation and East Markland Drive. This vegetation community is highly disturbed and consists of a preponderance of non-native species, including Brazilian pepper tree, date palm, and Mexican fan palm. Only a few native species were present, including willow and mulefat. As a result of its disturbed nature, this vegetation community would not be considered a sensitive habitat.

Several stands of southern sycamore-alder riparian woodland occur within the Rio Hondo and San Gabriel River corridors. The southern sycamore-alder riparian woodland association is currently designated by the CDFW as S3 or rarer.

6.5.2 California Walnut Woodland

California walnut woodland was identified within the Proposed Project area, specifically in the Montebello Hills and the San Gabriel River corridor and. California walnut woodland is regarded by the CDFW as an S3 vegetation type.

6.6 CRITICAL HABITAT

Under the FESA, and to the extent prudent and determinable, the USFWS is required to designate critical habitat for endangered and threatened species (16 U.S.C. § 1533 [a][3]). Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. The critical habitat designation delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species.

Critical habitat within 5 miles of the Proposed Project area is depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map and Figure 9: Goodrich Substation Critical Habitat Map. Critical habitat for coastal California gnatcatcher is present within the Proposed Project area, specifically in the Montebello Hills and the Rio Hondo and San

Gabriel River corridors. Critical habitat for Braunton's milk-vetch (*Astragalus brauntonii*) is present within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.7 WILDLIFE MIGRATION CORRIDORS

Wildlife corridors are defined as areas that connect suitable habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features—such as canyon drainages, ridgelines, or areas with vegetation cover—provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high-population-density areas; and facilitate gene flow between populations. Wildlife corridors are considered sensitive by resource and conservation agencies.

Terrestrial wildlife species tend to travel along natural drainages or stretches of land that simultaneously provide protective cover from predators and a foraging source. The Proposed Project area contains one drainage supporting riparian habitat that could provide cover for migrating wildlife. In addition, designated critical habitat and scrub vegetation communities are located within the Proposed Project area, which have direct connectivity to larger stretches of similar habitat. This could provide local migration corridors for birds, mammals, and reptiles while providing foraging opportunities.

The Proposed Project is located in the Pacific Flyway, a major north-south avian migratory corridor that extends along the West Coast from Alaska to Patagonia, and provides suitable foraging habitat for many resident and migratory avian species. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas and, therefore, is utilized by an abundance of bird species during migration. The Rio Hondo and San Gabriel River corridors and the Montebello Hills would support a number of avian species utilizing the Pacific Flyway.

6.8 HCP/NCCP

Based on a review of the USFWS Conservation Plans and Agreements Database (USFWS 2013) and the CDFW NCCP program (CDFW 2013), it was determined that the Proposed Project is not located in areas with HCP or NCCP coverage.

6.9 COUNTY OF LOS ANGELES SIGNIFICANT ECOLOGICAL AREAS

The County of Los Angeles General Plan describes SEAs as lands having important biological resources. This classification includes habitats of rare and endangered species, sites with critical fish and wildlife, relatively undisturbed areas of typical natural habitat, and regionally scarce biotic resources.

As depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map, the Puente Hills SEA is located in the Puente Hills in the southeastern portion of the Los Angeles County, a portion of which overlaps with the Proposed Project area. The SEA includes portions of the Whittier Narrows Dam Recreation Area and Flood Control Basin, and much of the undeveloped land throughout the Puente Hills. A portion of the SEA also overlaps with coastal California gnatcatcher critical habitat.

Figure 9:
Goodrich Substation
Critical Habitat Map

Mesa 500 kV Substation Project

Proposed Project Area

5-Mile Buffer

Braunton's milk-vetch Critical Habitat

SOUTHERN CALIFORNIA EDISON
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INSIGNIA ENVIRONMENTAL

1:72,000

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6.10 AQUATIC RESOURCES

The Proposed Project area contains a total of 9 water features—one intermittent drainage and 8 ephemeral drainages—that may be subject to regulation by the USACE, RWQCB, and CDFW. For the sake of consistency, nomenclature from the TRTP delineation reports was used to identify the mapped features. For this reason, 2 of the 8 ephemeral drainages have been mapped in segments. One ephemeral drainage has been mapped as three segments with feature identification (ID) numbers 7-38-S-1, 7-39-S-1, and 11-138-S-100. A second ephemeral drainage has been mapped as two segments, with feature ID numbers 11-136-S-100 and 11-136-S-101. In addition to the 9 potentially jurisdictional features, 18 non-jurisdictional features were identified, including five man-induced wetlands, 11 man-made ditches, and two erosional channels. Table 9: Potentially Jurisdictional Waters within the Proposed Project Area provides the location and approximate size of the potentially jurisdictional water features in the Proposed Project area. These features are depicted in Figure 5: Biological Resources Observations Map. All water features are described further in Attachment D: Supplemental Jurisdictional Delineation Report.

7 – IMPACTS

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and waters of the U.S. and the State—that may occur in the Proposed Project area. Each impact discussion is accompanied by APMs that would be implemented during the Proposed Project to avoid and/or reduce the potential for and/or level of impacts to each resource. A complete list of APMs that have been proposed has been included in Section 8 – Applicant-Proposed Measures. With the implementation of the APMs, all impacts are anticipated to be reduced to less than significant pursuant to CEQA.

7.0 SIGNIFICANCE CRITERIA

Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the Proposed Project would:

- 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

- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS

- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means

- 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

Table 9: Potentially Jurisdictional Waters within the Proposed Project Area

Feature Number[12]	Feature Location	Mapbook Page(s)[13]	Feature Type	Approximate Size (Acreage)[14]
7-38-S-1	Within and east of Mesa Substation site	4, 5, 7	Ephemeral Drainage	0.13
7-39-S-1				0.81
11-138-S-100				0.17
7-39-S-2	Within Mesa Substation site	4, 5	Ephemeral Drainage	0.35
7-39-S-3	Southeast of Mesa Substation	5, 7	Ephemeral Drainage	0.35
7-39-S-5	Southwest of Mesa Substation	2	Ephemeral Drainage	0.24
7-39-S-6	Within Mesa Substation site	4	Ephemeral Drainage	0.04
11-94-S-2	Within Mesa Substation site	4, 6	Ephemeral Drainage	0.05
11-94-S-5	Within Mesa Substation site	3	Ephemeral Drainage	1.16
11-136-S-100	North of Mesa Substation	11	Ephemeral Drainage	0.11
11-136-S-101				0.12
7-39-S-11 (Rio Hondo)	East of Mesa Substation site	15	Intermittent Drainage	1.04

[12] Feature locations are depicted in Attachment A: Wetlands and Waters Map of Attachment D: Supplemental Jurisdictional Delineation Report.
[13] Mapbook page numbers refer to map numbers in Attachment A: Wetlands and Waters Map of Attachment D: Supplemental Jurisdictional Delineation Report.
[14] Drainage acreage is measured based on the distance between TOBs.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP

7.1 GENERAL VEGETATION IMPACTS

A variety of vegetation communities occur in the Proposed Project area. Construction of the Proposed Project would result in temporary impacts and minor permanent impacts to these vegetation communities, primarily through vegetation removal and disturbance from construction activities. Potential temporary impacts include vegetation clearing and vehicle use in work areas, pull sites, staging areas/helicopter landing zones, and contractor storage yards, as well as establishing and/or improving temporary access roads. Potential temporary impacts to vegetation communities also include the introduction or spread of noxious weeds, which outcompete native species and cause declines in native plant populations. The majority of the work would be conducted where disturbed conditions and noxious weeds are predominant. Where work would be conducted within native vegetation, impacts are anticipated to be minor, as described in the paragraphs that follow. As such, Proposed Project impacts are not anticipated to have a significant effect on native plant species.

Permanent direct loss involves long-term impacts associated with the construction of permanent Proposed Project features (e.g., new transmission towers, new poles, and a new substation). The expansion of Mesa Substation would result in the permanent removal of vegetation. Permanent vegetation impacts would also occur as a result of the construction of new poles and towers. The temporary and permanent impacts are summarized in Table 10: Vegetation Impacts.

Chapter 8.52 City Tree and Tree Protection Ordinance (Ordinance 6896§ 2) of the City of Pasadena Municipal Code protects all native, specimen, landmark, landmark-eligible, or mature trees in the City of Pasadena. This ordinance is further described in Section 4.0.1 Relevant Regulations. Coast live oak trees are present on the northwest portion of the 220 kV line loop-in at Goodrich Substation in the City of Pasadena, approximately 220 feet from potential work areas. Removal of the coast live oak trees is not anticipated. The Oak Tree Ordinance for the County of Los Angeles is designed to preserve and maintain healthy oak trees in unincorporated portions of the county. A discretionary tree permit is required by the City of Pasadena for the removal of trees protected under the ordinance. The removal of any oak trees within unincorporated portions of Los Angeles County would also require a discretionary tree permit, and removed oak trees would be replaced at a 2-to-1 ratio. However, local discretionary permits are preempted by the CPUC for projects under its jurisdiction. In accordance with APM-BIO-02, impacts to native trees would be minimized to the extent possible. Should the removal of oak trees be unavoidable within the City of Pasadena or the unincorporated portions of the County of Los Angeles, a Revegetation Plan would be prepared that incorporates the mitigation requirements of the City of Pasadena and/or the County of Los Angeles, as applicable. As a result, impacts would be less than significant.

Table 10: Vegetation Impacts

Natural Vegetation Community	Approximate Area (Acres)	Approximate Temporary Impacts (Acres)	Approximate Permanent Impacts (Acres)
Replacement of existing Lattice Steel Tower on Goodrich – Laguna Bell 220 kV Transmission Line			
Ruderal	5.40	1.11	0.00
Temporary 220 kV Loop-in at Goodrich Substation			
Coast live oak woodland	0.26	0.00	0.00
Disturbed/developed areas	8.80	1.48	0.00
Mesa Substation			
Coastal Sage Scrub	0.16	0.16	0.00
Disturbed/developed areas	54.63	4.50	50.13
Ephemeral drainages	2.50	0.68	1.82
Mulefat scrub	0.33	0.13	0.20
Non-native woodland	9.17	1.08	8.09
Riparian woodland	0.18	0.04	0.14
Ruderal	19.24	9.14	10.10
Street Light Source Conversion from Overhead to Underground			
Disturbed/developed areas	1.22	0.00	0.00
Telecom. Reroute and Additions			
California annual grassland	17.32	15.72	1.56
California walnut woodland	1.87	0.00	0.00
Coastal sage scrub	3.06	0.33	0.00
Disturbed/developed areas	240.22	92.39	2.92
Mulefat scrub	13.86	1.41	0.00
Non-native giant reed	0.15	0.00	0.00
Non-native woodland	34.24	8.59	0.27
Riparian woodland	1.19	0.37	0.02
Ruderal	47.26	33.98	1.46
Southern sycamore-alder riparian woodland	2.79	0.37	0.00
Ephemeral drainages	0.64	0.57	0.01
Intermittent drainage	1.98	0.00	0.00

Natural Vegetation Community	Approximate Area (Acres)	Approximate Temporary Impacts (Acres)	Approximate Permanent Impacts (Acres)
Man-induced wetlands	0.04	0.04	0.00
Total	**466.51**	**172.09**	**76.72**

To ensure that no vegetation impacts would occur outside of the Proposed Project area, all work activities, access routes, and laydown areas would be clearly delineated in the field to restrict crew members from accessing areas outside of the designated workspace. During construction, SCE would minimize vegetation removal where feasible, as described in APM-BIO-02. As described in APM-BIO-02 and APM-BIO-03, SCE would develop and implement a Revegetation and Monitoring Plan, if necessary, for native vegetation that may be impacted by construction activities. In addition, disturbed areas would be returned to their pre-existing contours and conditions. These APMs are presented and discussed in Section 8 – Applicant-Proposed Measures. Implementation of APMs would reduce impacts to vegetation to a less-than-significant level.

7.2 IMPACTS TO SPECIAL-STATUS PLANT SPECIES

Implementation of the Proposed Project would result in potential impacts to special-status plant species in the Proposed Project area. Two special-status plant species—California black walnut and Nevin's barberry—have been identified as present in the Proposed Project area. However, California black walnut is a CNPS CRPR 4.2 species that does not require CEQA review. California black walnut occurs in the cities of Monterey Park and Montebello, and in unincorporated areas of Los Angeles County; however, mitigation or compensation for the removal of California black walnut trees is not required by these jurisdictions. As such, impacts to California black walnut would not be considered significant.

Nevin's barberry is a federally and state-listed endangered species and a CNPS CRPR 1.2 species. As described in APM-BIO-01, Nevin's barberry would be marked or flagged and impacts to this species would be avoided during all construction activities. As such, there would be no impacts to Nevin's barberry.

Three special-status plant species—southern tarplant, Plummer's mariposa-lily and intermediate mariposa-lily—have a moderate potential to occur on within the Proposed Project area. Fifteen special-status plant species have a low potential to occur on the Proposed Project area, as listed in Table 7: Special-Status Plant Species. If present, special-status plant species could be impacted during vegetation clearing and construction of Mesa Substation. Grading or other heavy disturbance also has the potential to bury or otherwise remove topsoil, which may contain viable seeds of special-status plant species. Grading or other disturbances may also introduce invasive species into an area where special-status plant species occur. To ensure that special-status plant species are not impacted as a result of the Proposed Project, SCE would implement APM-BIO-01, by conducting pre-construction special-status plant surveys in accordance with CDFW (2009), USFWS (1996) and CNPS (2001) guidelines. In addition, as described in APM-BIO-02, SCE would develop and implement a Revegetation and Monitoring Plan, if necessary, for native vegetation that may be impacted by construction activities. The Revegetation Plan would include post-construction invasive weed management measures. As a result, the implementation of APM-BIO-01 and APM-BIO-02 would reduce impacts to special-status plant species to a less-than-significant level.

7.3 GENERAL WILDLIFE SPECIES

Construction activities could potentially impact non-sensitive wildlife species. Direct impacts to wildlife may include mortality from vehicle collisions, vegetation removal, or entrapment. Permanent impacts may include the removal of potential foraging habitat, destruction of burrows, or injury or mortality from construction activities. Temporary impacts may include the disruption of normal behavior due to a temporary increase in noise from construction equipment and vehicles. To ensure that wildlife does not become trapped in excavations or construction materials, SCE would implement additional protection for wildlife species, as described in the paragraphs that follow.

Additional Protection for General Wildlife Species

- **Worker Environmental Awareness Program Training:** Prior to construction, a qualified biologist or other qualified resource specialist would develop an environmental training for all Proposed Project personnel. The training would cover all pertinent Proposed Project APMs, permit conditions, and any other required environmental compliance measures. In addition, the environmental training would familiarize all Proposed Project personnel with special-status species that may occur within the construction areas. All Proposed Project personnel would attend the training prior to starting work on the Proposed Project. Upon completion of the training, each attendee would sign a form stating that he/she participated in the training and understood the material presented.

- **Special-Status Wildlife Species:** If a special-status wildlife species is identified on site, crews would immediately stop work and contact an on-site biological monitor and SCE. Work would not proceed in the immediate area until the animal has traveled off site on its own or has been relocated by an approved biologist. If the identified special-status wildlife species is a federally and/or state-listed species, the USFWS and/or CDFW (depending upon the listing status) would be notified.

- **Holes, Trenches, and Escape Routes for Wildlife:** All excavated, steep-walled holes or trenches more than 6 inches deep would either be covered at the end of each workday, or a ramp would be built to provide a means of escape for trapped animals. Before the holes or trenches are filled, they would be thoroughly inspected.

Implementation of these additional protection measures would reduce impacts to general wildlife species to a less-than-significant level.

7.4 IMPACTS TO SPECIAL-STATUS WILDLIFE SPECIES

7.4.0 Invertebrate Species

No special-status invertebrate species are anticipated to occur in the Proposed Project area. Therefore, no impacts to special-status invertebrate species are anticipated.

7.4.1 Fish Species

No special-status fish species are anticipated to occur in the Proposed Project area. Therefore, no impacts to special-status fish species are anticipated.

7.4.2 Amphibian Species

One special-status amphibian species—western spadefoot—has a moderate potential to occur within the Montebello Hills and the Rio Hondo and San Gabriel River corridors. This species could be crushed by construction vehicles or by vegetation removal. To ensure western spadefoot is not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires that biological monitors are present during construction in areas where this species may occur. SCE would also implement additional protection for wildlife species that would require that open trenches and excavations are covered or secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status amphibian species to a less-than-significant level.

7.4.3 Reptile Species

One special-status reptile species—Belding's orange-throated whiptail—was observed in the Proposed Project area. In addition, western pond turtle has a moderate potential to occur within the Rio Hondo and San Gabriel River corridors. These species could be crushed by construction vehicles or by vegetation removal. To ensure special-status reptile species are not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires biological monitors to monitor construction in areas where these species may occur. SCE would also implement additional protection for wildlife species (as described in Section 7.3 General Wildlife Species) that would require that open trenches and excavations are covered and secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status reptile species to a less-than-significant level.

7.4.4 Avian Species

Six special-status avian species were observed during surveys conducted for the TRTP in 2009, 2010 and 2011, and during surveys conducted by Insignia and RBC in 2014. The coastal California gnatcatcher was observed foraging and nesting in disturbed ruderal habitat in the Proposed Project area to the south of the existing Mesa Substation, on the proposed substation expansion area. In addition, the coastal California gnatcatcher was observed foraging in the Montebello Hills and the Rio Hondo and San Gabriel River corridors. The least Bell's vireo has been observed nesting along the Rio Hondo corridor within the Proposed Project area. This species has also been observed foraging in the Montebello Hills and the San Gabriel River corridor. Records of least Bell's vireo and coastal California gnatcatcher nesting observations from 2014 were also provided to Insignia biologists by the Whittier Narrows Nature Center. The remaining four species—American peregrine falcon, Swainson's hawk, loggerhead shrike, and yellow warbler—were observed foraging in the Proposed Project area. In addition, western burrowing owl has a moderate potential to occur in grassland vegetation within the Proposed Project area. Impacts to coastal California gnatcatcher, listed as threatened under the FESA; least Bell's vireo, listed as endangered under the FESA and the CESA; and other nesting birds protected by the MBTA and the California Fish and Game Code may occur as a result of

Proposed Project construction. In addition, construction could impact foraging habitat for coastal California gnatcatcher and least Bell's vireo. These impacts are described in the following subsections.

Coastal California Gnatcatcher

Permanent and direct impacts to coastal California gnatcatcher may include the removal of nesting or foraging habitat and/or the removal of some food sources. No direct take of individual birds is anticipated. Direct permanent impacts to approximately 14.21 acres of coastal California gnatcatcher nesting and foraging habitat are anticipated due to the construction of the Proposed Project, as shown in Table 11: Potential Impacts to Coastal California Gnatcatcher Habitat. Permanent impacts to coastal California gnatcatcher habitat would be to ruderal vegetation and a small area of coastal sage scrub in the Mesa Substation site. Temporary impacts of up to 12.09 acres of coastal California gnatcatcher nesting and foraging habitat are anticipated due to the construction of the Proposed Project. Temporary impacts would occur primarily along one of the proposed telecommunication line routes which traverses through designated critical habitat for this species. Temporary impacts of up to 1.69 acres of coastal California gnatcatcher critical habitat are anticipated. At this location, work would be conducted on existing subtransmission or distribution lines along an existing paved road. The location of the temporary and permanent impacts that would occur is shown in Figure 10: Potential Impacts to Suitable Coastal California Gnatcatcher Habitat Map.

Table 11: Potential Impacts to Coastal California Gnatcatcher Habitat

Location	Approximate Impact Area (Acres)	Approximate Temporary Impacts[15] (Acres)	Approximate Permanent Impacts (Acres)
Mesa Substation site	23.45	9.24	14.21
Associated transmission, subtransmission, distribution, and telecommunications lines	2.85	2.85	0.0
Totals	**26.30**	**12.09**	**14.21**
Impacts within Coastal California Gnatcatcher Critical Habitat	**1.69**	**1.69**	**0.0**

Indirect temporary impacts may include the disruption of nesting behavior due to a temporary increase in the presence of humans, dust and noise from construction equipment and vehicles.

[15] A portion of SCE's temporary impact acreage located north and west of Greenwood Avenue is located within areas analyzed by the Monterey Park Market Place Final Environmental Impact Report and found to have permanent impacts. Consequently, SCE's temporary impact acreage is estimated. This area has been condemned by the City of Monterey Park, resulting in limited use by SCE. Therefore, once the Monterey Park Market Place is developed, SCE would modify the temporary impact acreage accordingly.

Impacts would be most significant during the nesting season, which is generally March through August for this particular species. In accordance with APM-BIO-04, SCE would coordinate with USFWS to obtain necessary permits under the FESA, and would reduce impacts to coastal California gnatcatcher by implementing the following measures:

- conducting protocol-level surveys prior to the start of construction;
- implementing no-work buffers, as appropriate, if nesting birds are found;
- ensuring that a USFWS-approved biological monitor is present;
- limiting work in close proximity to active nests until after the chicks have fledged; and
- mitigating for the permanent loss of occupied coastal California gnatcatcher habitat.

In addition, SCE would implement APM-AIR-01 (as described in Section 4.3, Air Quality of the PEA), which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce impacts to coastal California gnatcatcher to a less-than-significant level.

Least Bell's Vireo

Indirect temporary impacts to least Bell's vireo would include the disruption of nesting behavior due to a temporary increase in the presence of humans, dust, and noise from construction equipment and vehicles. Impacts would be most significant during the nesting season, which is generally March through September for this particular species. In accordance with APM-BIO-05, SCE would coordinate with USFWS and CDFW to obtain necessary permits under the FESA and CESA, and would reduce impacts to least Bell's vireo by implementing the following measures:

- avoiding activities during the nesting season to the extent feasible;
- conducting protocol-level surveys prior to the start of construction;
- implementing no-work buffers as appropriate if nesting birds are found
- ensuring that a USFWS-approved biological monitor is present;
- limiting work in close proximity to active nests until after the chicks have fledged; and
- mitigating for the permanent loss of occupied least Bell's vireo habitat.

In addition, SCE would implement APM-AIR-01 as described in Section 4.3, Air Quality, which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce impacts to least Bell's vireo to a less-than-significant level.

Other Avian Species

Direct impacts are expected to occur to unoccupied nesting bird habitat through vegetation clearing and grading of suitable ground-nesting bird habitat. Indirect temporary impacts may include the disruption of nesting behavior due to a temporary increase in human presence, and noise and dust from construction equipment and vehicles. As described in APM-BIO-06, SCE would reduce impacts to nesting bird species by implementing the following measures:

- avoiding activities during the nesting season to the extent feasible;
- conducting pre-construction nesting bird surveys;
- implementing no-work buffers, as appropriate, if nesting birds are found; and
- limiting work in close proximity to active nests until after the chicks have fledged.

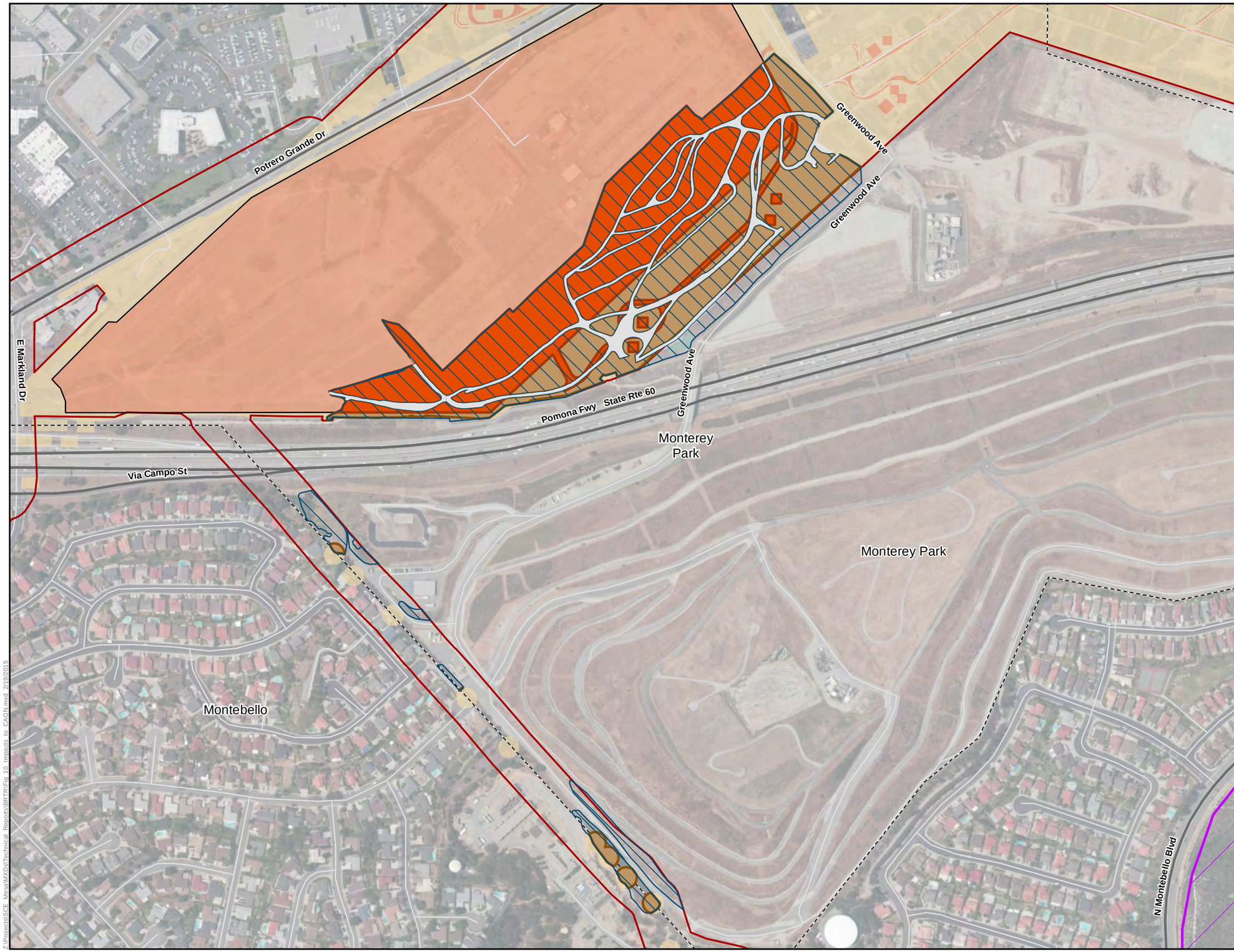

Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 1 of 3

Mesa 500 kV Substation Project

- Survey Area/Proposed Project
- Proposed Substation Perimeter Wall
- City Boundary
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat
- Existing Access Road (Non-Suitable Habitat)

Project Impacts

- Temporary
- Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

- Temporary
- Permanent

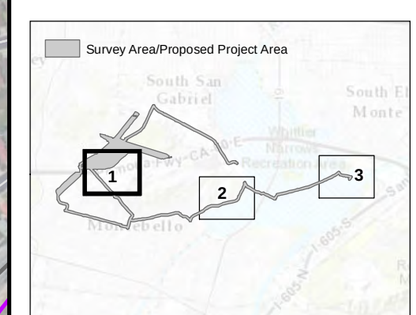

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Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 2 of 3

Mesa 500 kV Substation Project

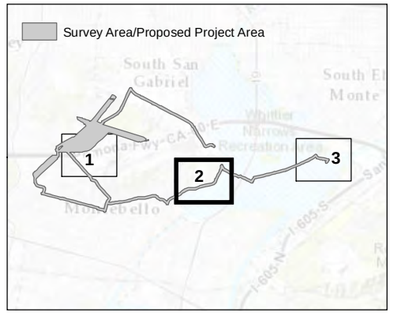
- Survey Area/Proposed Project
- Proposed Substation Perimeter Wall
- City Boundary
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat
- Existing Access Road (Non-Suitable Habitat)

Project Impacts

- Temporary
- Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

- Temporary
- Permanent



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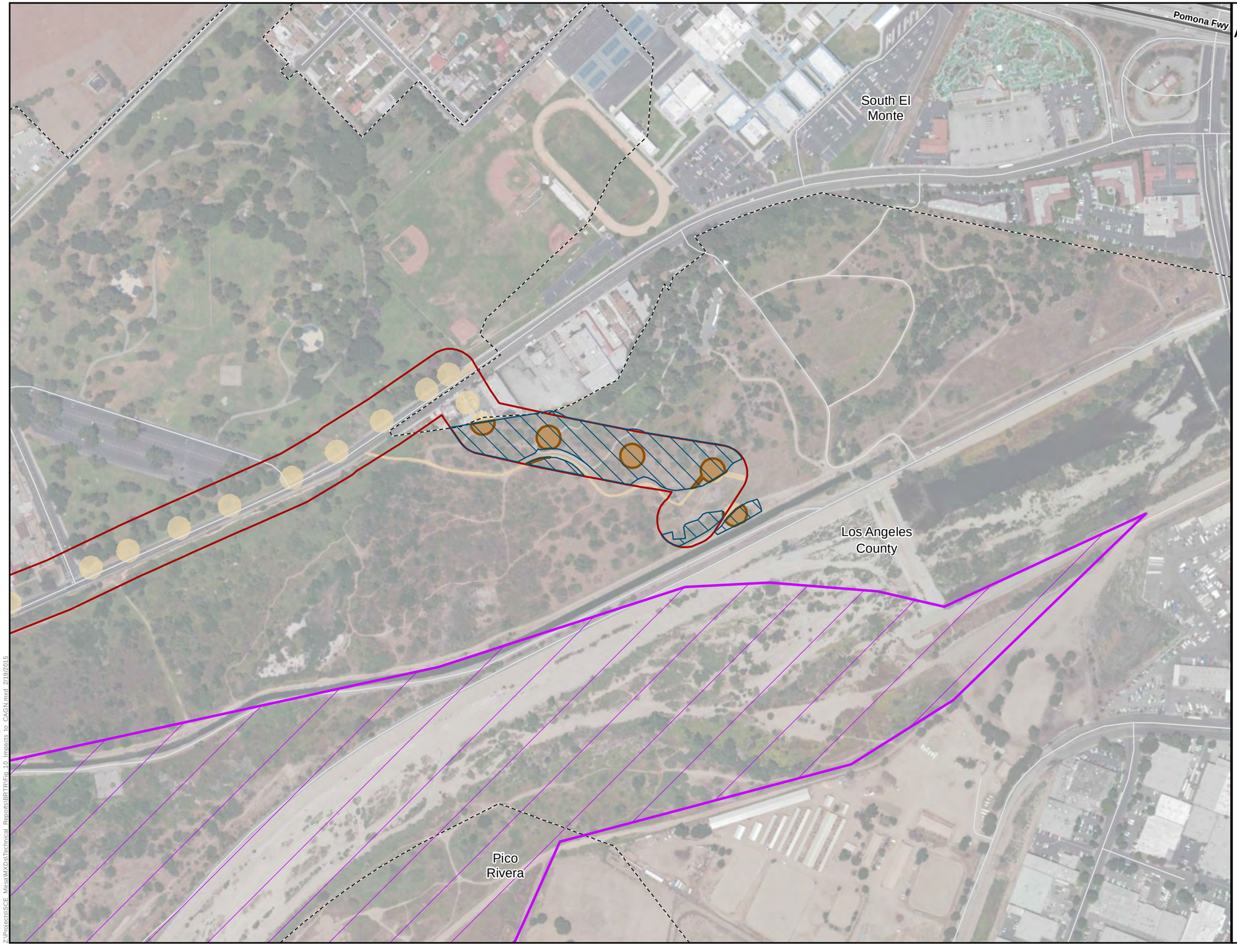


Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 3 of 3

Mesa 500 kV Substation Project

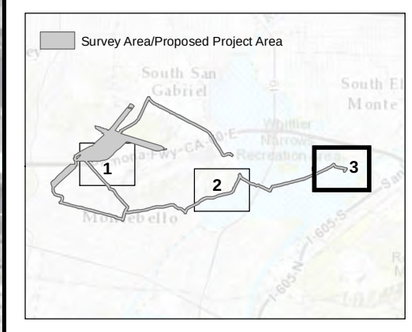
- Survey Area/Proposed Project
- Proposed Substation Perimeter Wall
- City Boundary
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat
- Existing Access Road (Non-Suitable Habitat)

Project Impacts

- Temporary
- Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

- Temporary
- Permanent



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In addition, SCE would implement APM-AIR-01, which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce the impacts to nesting avian species to a less-than-significant level.

Permanent impacts to foraging habitat for all avian species would be limited, because the majority of habitat where permanent impacts are anticipated has been previously disturbed and is in a degraded state. Therefore, permanent construction impacts to foraging avian species would be less-than-significant.

SCE plans to incorporate avian protection measures into the Proposed Project's engineering design through the implementation of APM-BIO-07, which ensures that SCE's facilities are in compliance with APLIC's *Suggested Practices for Raptor Protection on Power Line: The State of the Art in 2006* (APLIC 2006). Implementation of this APM would reduce the impacts to avian species to a less-than-significant level.

Power lines and other structures also provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. In areas where current perching sites are few or rare, the construction of a new power line may increase the potential for raptors perching, and thus increase predation opportunities in the area. However, due to the undergrounding of the 66 kV circuits at Mesa Substation and the prevalence of existing electrical facilities, trees and other perching structures in the area, construction of the Proposed Project is anticipated to have less-than-significant impacts on potential increased predation of smaller wildlife species.

7.4.5 Mammal Species

One special-status mammal species—southern grasshopper mouse—has a moderate potential to occur within the Montebello Hills and the Rio Hondo and San Gabriel River corridors. This species could be crushed by construction vehicles or by vegetation removal. To ensure southern grasshopper mouse is not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires that biological monitors are present during construction in areas where this species may occur. SCE would also implement additional protection for wildlife species (as described in Section 7.3 General Wildlife Species) that would require that open trenches and excavations are covered or secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status mammal species to a less-than-significant level.

7.5 IMPACTS TO SENSITIVE NATURAL VEGETATION COMMUNITIES

Two sensitive vegetation communities occur within the Proposed Project area, including southern sycamore-alder riparian woodland and California walnut woodland. Southern sycamore-alder riparian woodland association is currently designated by the CDFW as S3 or rarer. California walnut woodland is regarded by CDFW as S3. These sensitive vegetation communities could be impacted during vegetation clearing. SCE would implement APM-BIO-02, which would minimize impacts and permanent loss to sensitive vegetation communities. If impacts are unavoidable, SCE would implement a Revegetation Plan to restore vegetation to its pre-construction condition. Implementation of APM-BIO-02 would reduce impacts to sensitive vegetation communities to a less-than-significant level.

7.6 IMPACTS TO CRITICAL HABITAT

As depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map, approximately 3.80 acres of the Proposed Project area are designated as coastal California gnatcatcher critical habitat. The Proposed Project activities would result in approximately 1.69 acres of temporary impacts to coastal California gnatcatcher critical habitat, along a 1.1 mile length of the proposed telecommunication line route that traverses the Montebello Hills and the Rio Hondo and San Gabriel River corridors. At this location, work would be conducted on existing subtransmission or distribution lines along an existing paved road. The temporary disturbance of this critical habitat due to ground-disturbing activities could result in direct impacts to coastal California gnatcatcher. Shrubs and other vegetation used by coastal California gnatcatcher may be destroyed in these areas, resulting in the loss of foraging and nesting habitat.

In order to minimize impacts to coastal California gnatcatcher critical habitat, a Revegetation Plan would be prepared and implemented to ensure that construction areas would be restored, in accordance with APM-BIO-02. Demarcating the boundaries of construction areas along the telecommunications routes would minimize the potential for impacts to critical habitat to occur outside of approved work areas. Avoiding impacts to vegetation, when feasible, would preserve nesting and foraging habitat within critical habitat. Restoring temporarily impacted construction areas, as appropriate, would minimize the duration of impacts to critical habitat and would more quickly return these areas to near pre-construction conditions. With the implementation of this APM, impacts to coastal California gnatcatcher critical habitat would be less than significant.

7.7 IMPACTS TO WILDLIFE MIGRATION CORRIDORS

The Proposed Project would involve construction activities within an existing transmission corridor, and would include the construction of only one large, permanent structure—the proposed Mesa Substation. The proposed Mesa Substation would be constructed in an area that is disturbed and does not have potential to be used as a wildlife migration corridor. As previously discussed, up to 53 wood poles would be replaced. As these activities involve the replacement of existing wood poles, they would not create a barrier to wildlife migration corridors. The remaining Proposed Project activities would occur within small, discontinuous areas and, therefore, would not create a barrier for terrestrial species. As a result, no impacts to wildlife migration corridors are anticipated.

7.8 IMPACTS TO HCP/NCCP

Construction of the Proposed Project would not occur within an area with HCP or NCCP coverage. As a result, no impacts to areas covered under an HCP or NCCP would occur as a result of the Proposed Project.

7.9 IMPACTS TO COUNTY OF LOS ANGELES SIGNIFICANT ECOLOGICAL AREAS

A portion of construction activities associated with the Proposed Project would occur within an area designated as an SEA by the County of Los Angeles. However, these activities would occur within an existing transmission corridor and do not involve the construction of large facilities. Within the SEA, up to 53 existing wood poles could be replaced as part of the Proposed Project, depending on the results of wind-load testing. As these activities would replace existing wood

poles, no permanent impacts to the SEA are anticipated. The remaining Proposed Project activities would occur within small, discontinuous areas and therefore are not anticipated to impact the SEA. As a result, no impacts to the County of Los Angeles SEA are anticipated.

7.10 IMPACTS TO AQUATIC RESOURCES AND RIPARIAN HABITAT

The construction of the Proposed Project would result in direct temporary impacts of approximately 0.09 acre and direct permanent impacts of 0.55 acre to waters potentially under the jurisdiction of the USACE and RWQCB. Construction of the Proposed Project would also result in direct temporary impacts of approximately 1.56 acres and direct permanent impacts of approximately 2.76 acres to waters and riparian habitat potentially under the jurisdiction of the CDFW. Only ephemeral, non-wetland waters would be impacted by the Proposed Project If water features cannot be avoided, SCE would mitigate for impacts as required by the USACE, CDFW, and RWQCB, as described in APM-BIO-08 in Section 8 – Applicant-Proposed Measures, which stipulates that authorizations must be obtained from the appropriate jurisdictional agencies and mitigation must be implemented for permanent impacts to jurisdictional waters. With the implementation of this APM, impacts to jurisdictional water features would be reduced to less-than-significant levels.

A summary of temporary and permanent impact areas by water type is shown in Table 12: Water Features to be Impacted by the Proposed Project. An overview of the impacts to wetland and non-wetland water features are shown in Figure 11: Potential Impacts to Waters Map. More information is provided in Attachment D: Supplemental Jurisdictional Delineation Report. SCE would avoid on-site wetlands to the extent practicable.

Indirect impacts to wetlands and waters could also result from spillage of construction materials, as well as erosion and sedimentation. These potential impacts would be avoided and minimized through implementation of the Proposed Project's SWPPP and Spill Prevention, Control and Countermeasure Plan, which are both required by law. The SWPPP would require that vehicles be checked daily and maintained in accordance with manufacturer's specifications to minimize the potential for leaks, and refueling and maintenance of vehicles would occur at least 50 feet from the edge of any aquatic feature. In addition, SCE would implement APM-BIO-02 and APM-BIO-08 to further minimize indirect impacts to wetlands and waters. With the implementation of these APMs and with adherence to applicable regulations, impacts to jurisdictional water features would be less than significant.

Construction of the Proposed Project may also result in direct and temporary impacts to riparian vegetation, including disturbed riparian woodland and sycamore-alder riparian woodland. Riparian vegetation within the Proposed Project area are potentially under the jurisdiction of the CDFW. Proposed Project activities that could adversely affect riparian vegetation include earth-moving/grading, tree trimming, and tree removal. SCE would avoid riparian vegetation to the extent feasible. If riparian vegetation cannot be avoided, SCE would mitigate for impacts, as described in APM-BIO-08 in Section 8 – Applicant-Proposed Measures, which stipulates that authorizations must be obtained from the appropriate jurisdictional agencies and mitigation must be implemented for permanent impacts to riparian vegetation. With the implementation of these APMs, impacts to riparian vegetation would be reduced to less-than-significant levels.

Table 12: Water Features to be Impacted by the Proposed Project

Water Feature Type	Approximate Temporary Impact Area (Acres)			Approximate Permanent Impact Area (Acres)		
	USACE and SWRCB/ RWQCB	CDFW	Non-Jurisdictional	USACE and SWRCB/ RWQCB	CDFW	Non-Jurisdictional
Jurisdictional Water Features						
Ephemeral Drainage	0.09	1.05	N/A	0.55	2.56	N/A
Intermittent Drainage	0.00	0.00	N/A	0.00	0.00	N/A
Riparian Canopy	N/A	0.51	N/A	N/A	0.20	N/A
Totals	**0.09**	**1.56**	**N/A**	**0.55**	**2.76**	**N/A**
Non-Jurisdictional Water Features						
Erosional Feature	N/A	N/A	<0.01	N/A	N/A	0.01
Man-Made Ephemeral Ditch	N/A	N/A	0.26	N/A	N/A	0.98
Man-Induced Wetland	N/A	N/A	0.04	N/A	N/A	<0.01
Total	**N/A**	**N/A**	**0.30**	**N/A**	**N/A**	**0.99**

Note: N/A = Not Applicable. Waters that are potentially jurisdictional for USACE and SWRCB/RWQCB are a subset of waters that are jurisdictional for CDFW.

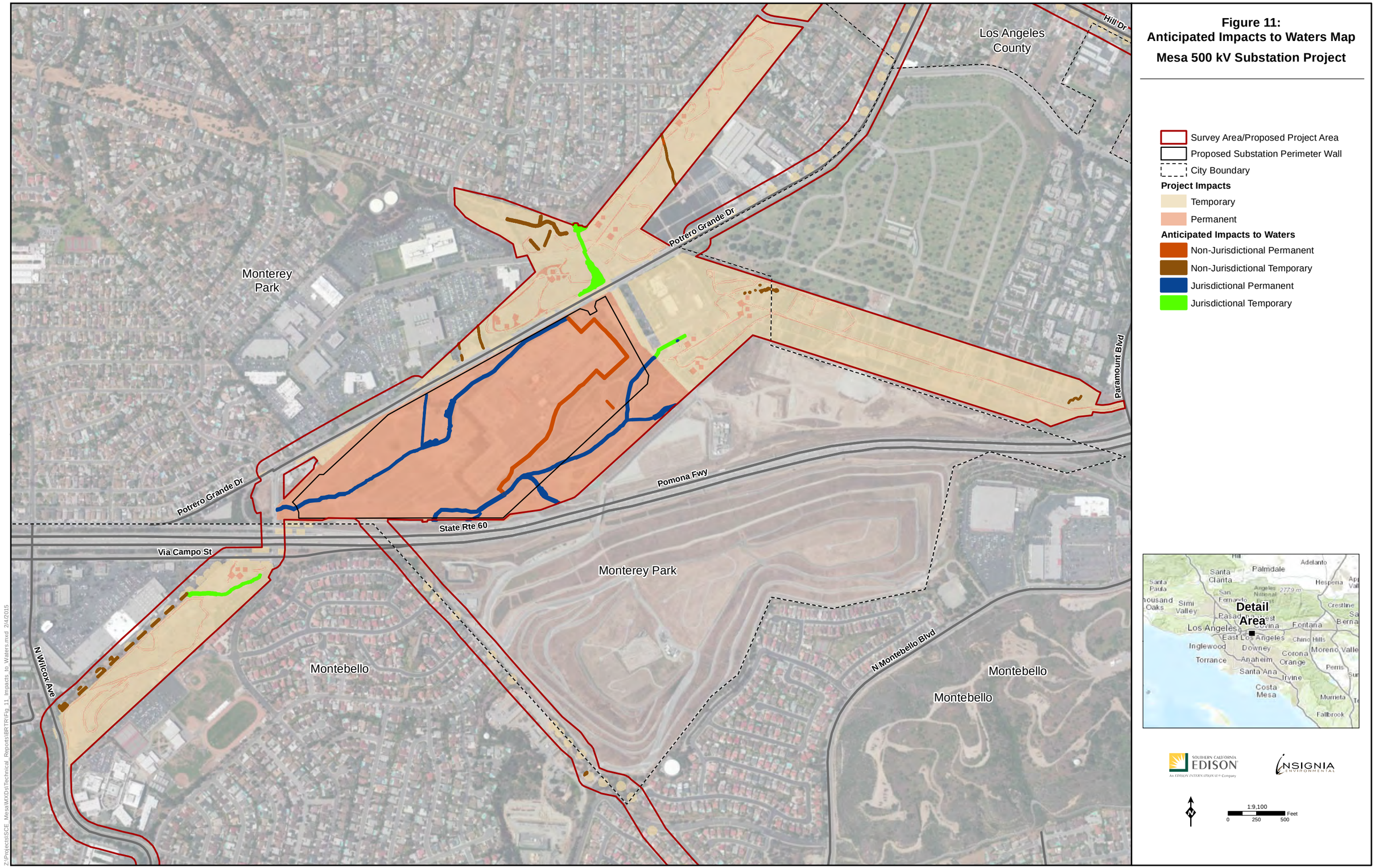

Figure 11:
Anticipated Impacts to Waters Map
Mesa 500 kV Substation Project

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8 – APPLICANT-PROPOSED MEASURES

The following APMs would be implemented by SCE in order to reduce any potential impacts to biological resources to a less-than-significant level. Specifically, the APMs have been designed to minimize or eliminate potential impacts to special-status plant and wildlife species, as well as more common native wildlife species that are present in the surrounding area of the Proposed Project. Specific implementation of these APMs is discussed with the applicable impacts described previously in Section 7 – Impacts.

- **APM-BIO-01: Special-Status Plant Species.** During the appropriate phenological periods, formal pre-construction surveys for rare plants would be conducted in areas where special-status plants have the potential to occur within the construction areas. Prior to construction, the locations of any special-status plants identified during the surveys would be marked or flagged for avoidance. This boundary would be maintained during work at these locations and would be avoided during all construction activities to the extent possible. Impacts to Nevin's barberry would be avoided. Where disturbance to these areas cannot be avoided, SCE would develop and implement a Revegetation Plan. The Revegetation Plan would include measures for transplanting and replacing special-status plant species that may be impacted by construction of the Proposed Project. This plan would also include general measures in the event that special-status plant species are encountered prior to construction of the Proposed Project as well as post-construction invasive weed management measures, where necessary, to ensure successful revegetation back to pre-construction conditions or to equivalent conditions of representative habitat immediately adjacent to the affected area.

- **APM-BIO-02: Revegetation Plan.** To the extent feasible, SCE would minimize impacts and permanent loss to riparian habitat, native trees, and other vegetation that is regulated by federal, state or local agencies, and/or that provides suitable habitat for special-status species. Impacts would be minimized at construction sites by flagging native vegetation to be avoided. If unable to avoid impacts to protected vegetation, a Revegetation Plan would be prepared in coordination with the appropriate agencies for areas of native habitat temporarily and/or permanently impacted during construction. The Revegetation Plan would describe, at a minimum, which vegetation restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Proposed Project's SWPPP) would be implemented in the Proposed Project area. The Revegetation Plan would also include the species or habitats that could be impacted, the replacement or restoration ratios (as appropriate), the restoration methods and techniques, and the monitoring periods and success criteria, as identified in each measure.

- **APM-BIO-03: Biological Monitoring.** To the extent feasible, biological monitors would monitor construction activities in areas with special-status species, native vegetation, wildlife habitat, or unique resources to ensure that such resources are avoided.

- **APM-BIO-04: Coastal California Gnatcatcher Protection.** A USFWS-approved biologist would conduct pre-construction surveys for coastal California gnatcatcher no more than seven days prior to the start of ground-disturbing activities, if this work would

commence between February 1 and August 30. Surveys for coastal California gnatcatcher would be conducted in suitable nesting habitat within approximately 500 feet of the Proposed Project area. If a breeding territory or nest is confirmed, the USFWS would be notified and in coordination with the USFWS, an exclusion buffer would be established around the nest. Construction activities in occupied coastal California gnatcatcher habitat would be monitored by a full-time USFWS-approved biologist. Unless otherwise authorized by the USFWS, no Proposed Project activities would occur within the established buffer until it is determined by the biologist that the young have left the nest. Temporary and permanent impacts to coastal California gnatcatchers and their habitat would be mitigated as required by the USFWS.

- **APM-BIO-05: Least Bell's Vireo Protection.** SCE would avoid ground-disturbing activities within suitable habitat for least Bell's vireo during the nesting season to the extent possible. In the event that activities within least Bell's vireo nesting habitat are unavoidable, a USFWS-approved biologist would conduct pre-construction surveys for least Bell's vireo no more than seven days prior to the start of ground-disturbing activities, if this work would commence between March 15 and September 30. Surveys for least Bell's vireo would be conducted in suitable nesting habitat within approximately 500 feet of the Proposed Project area. If a breeding territory or nest is confirmed, the USFWS and CDFW would be notified and in coordination with the USFWS and CDFW, an exclusion buffer would be established around the nest. Construction activities in occupied least Bell's vireo habitat would be monitored by a full-time USFWS- and CDFW-approved biologist. Unless otherwise authorized by the USFWS and CDFW, no Proposed Project activities would occur within the established buffer until it is determined by the biologist that the young have left the nest. Temporary and permanent impacts to least Bell's vireo, and their habitat would be mitigated as required by the USFWS and CDFW.

- **APM-BIO-06: Nesting Birds.** SCE would conduct pre-construction clearance surveys no more than seven days prior to construction to determine the location of nesting birds and territories, during the nesting bird season (typically February 1 to August 31, 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-07: Avian Protection.** Electrical facilities would be designed in accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

- **APM-BIO-08**: **Compensation for Permanent Impacts.** Permanent impacts to all jurisdictional water resources would be compensated at a 1:1 ratio, or as required by the USACE, CDFW, and RWQCB.

9 – PERMITS AND AUTHORIZATIONS

Several regulatory approvals, authorizations, or permits are required for the Proposed Project, as provided in Table 13: Anticipated Biological Resource Permits and Authorizations. These approvals may include conditions that afford additional protection to species and/or their habitat. In addition to implementing the APMs for the Proposed Project, SCE would comply with all mitigation measures and permit conditions that result from these regulatory reviews and approvals.

Table 13: Anticipated Biological Resource Permits and Authorizations

Permit/Approval/Consultation	Agency	Purpose of Permit/Approval
Federal Agencies		
CWA Section 404 Nationwide or Individual Permit	USACE	Permanent fill and temporary impacts to waters of the U.S., including wetlands
FESA Section 7 Consultation/Biological Opinion	USFWS	Potential incidental take and habitat modification for coastal California gnatcatcher and least Bell's vireo
State Agencies		
Permit to Construct	CPUC	Overall project approval and CEQA review
CWA Section 401 Water Quality Certification	Los Angeles RWQCB	Impacts to waters of the State
CWA Section 402 NPDES General Construction Permit	Los Angeles RWQCB	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (Water Quality Order No. 2003-0003-DWQ)	Los Angeles RWQCB	Groundwater discharges associated with construction activities
California Fish and Game Code Section 1600 Lake or Streambed Alteration Agreement	CDFW	Construction within a stream or channel, including temporary impacts to streams, as well as potential impacts to riparian vegetation
2081 Incidental Take Permit	CDFW	Potential incidental take of least Bell's vireo

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ATTACHMENT A: REPRESENTATIVE PHOTOGRAPHS

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ATTACHMENT A: REPRESENTATIVE PHOTOGRAPHS

Photograph 1:
Nevin's Barberry (*Berberis nevinii*), a federal- and state-listed endangered species, at the Whittier- Narrows Nature Center in the San Gabriel River corridor.

Photograph 2:
Representative photograph of California annual grassland habitat at the Mesa Substation site.

Photograph 3:
Representative photograph of California walnut woodland in the San Gabriel River corridor.

Photograph 4:
Representative photograph of coastal sage scrub south of the Montebello Hills area.

Photograph 5:
Representative photograph of disturbed coast live oak woodland habitat at the Goodrich Substation site.

Photograph 6:
Representative photograph of ruderal grassland and disturbed/developed habitat at the Mesa Substation site.

Photograph 7:
Representative photograph of exotic giant reed at Rio Hondo.

Photograph 8:
Representative photograph of mulefat scrub habitat at the Mesa Substation site.

Photograph 9:
Representative photograph of non-native woodland at the Mesa Substation site.

Photograph 10:
Representative photograph of disturbed riparian habitat at the Mesa Substation site.

Photograph 11:
Representative photograph of southern sycamore-alder riparian woodland in the San Gabriel River corridor.

Photograph 12:
Representative photograph of ruderal habitat at the Mesa Substation site.

Photograph 13:
Representative photograph of an ephemeral drainage at the Mesa Substation site.

Photograph 14:
Representative photograph of intermittent drainage, Rio Hondo.

	Photograph 15: Representative photograph of disturbed/developed habitat at the Goodrich Substation site.

ATTACHMENT B: PLANT SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

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ATTACHMENT B: PLANT SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

Gymnosperms

Cupressaceae - Cypress Family

Hesperocyparis sp.	Cypress
Juniperus californica	California juniper

Pinaceae - Pine Family

Pinus radiata	Monterey pine

Angiosperms - Dicots

Adoxaceae - Muskroot Family

Sambucus nigra subsp. *caerulea*	Blue elderberry

Aizoaceae - Fig-Marigold Family

**Carpobrotus chilensis*	Sea fig

Anacardiaceae - Cashew or Sumac Family

Malosma laurina	Laurel sumac
Rhus ovata	Sugar bush
**Schinus molle*	Peruvian pepper tree
**Schinus terebinthifolius*	Brazilian pepper tree
Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Conium maculatum*	Poison hemlock
**Foeniculum vulgare*	Sweet fennel

Apocynaceae - Dogbane/Milkweed Family

Asclepias sp.	Milkweed
**Nerium oleander*	Oleander

Araliaceae - Ginseng Family

**Hedera helix*	English ivy

Asteraceae (Compositae) - Sunflower Family

**Ambrosia artemisiifolia*	Common ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. *consanguinea*	Coyote brush
Baccharis salicifolia subsp. *salicifolia*	Mule fat
**Carduus pycnocephalus* subsp. *pycnocephalus*	Italian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
Helianthus annuus	Common sunflower
**Helminthotheca echioides*	Bristly ox-tongue
Heterotheca grandiflora	Telegraph weed
**Lactuca serriola*	Prickly lettuce
**Silybum marianum*	Milk thistle

Berberidaceae - Barberry Family

Berberis nevinii	Nevin's barberry

Betulaceae - Birch Family

Alnus rhombifolia	White alder

Brassicaceae (Cruciferae) - Mustard Family

**Brassica nigra*	Black mustard
**Hirschfeldia incana*	Short-podded mustard
**Lepidium latifolium*	Broadleaf pepperweed
**Raphanus sativus*	Wild radish
Cactaceae - Cactus Family	
**Opuntia ficus-indica*	Indian-fig
Chenopodiaceae - Goosefoot Family	
**Chenopodium* sp.	Goosefoot
**Salsola tragus*	Russian-thistle
Convolvulaceae - Morning-Glory Family	
Calystegia macrostegia	Morning-glory
**Convolvulus arvensis*	Bindweed
Cuscuta sp.	Dodder
Crassulaceae - Stonecrop Family	
**Crassula ovata*	Jade plant
Cucurbitaceae - Gourd Family	
Cucurbita foetidissima	Calabazilla
Euphorbiaceae - Spurge Family	
Croton setigerus	Turkey mullein
Euphorbia crenulata	Chinese caps
**Ricinus communis*	Castor bean
Fabaceae (Leguminosae) - Legume Family	
**Acacia* sp.	Acacia
Acmispon brachycarpus	Woolly trefoil
**Albizia julibrissin*	Silk tree
**Melilotus albus*	White sweetcover
**Senna* sp.	Senna
Fagaceae - Oak Family	
Quercus agrifolia var. *agrifolia*	Coast live oak
Geraniaceae - Geranium Family	
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
Grossulariaceae - Gooseberry Family	
Ribes aureum var. *gracillimum*	Golden currant
Hamamelidaceae - Witch Hazel Family	
**Liquidambar styraciflua*	Liquidambar
Juglandaceae - Walnut Family	
Juglans californica	Southern California black walnut
**Juglans regia*	English walnut
Lamiaceae (Labiatae) - Mint Family	
**Rosmarinus officinalis*	Rosemary
Salvia apiana	White sage
Salvia mellifera	Black sage
Lauraceae - Laurel Family	
Umbellularia californica	California bay
Lythraceae - Loosestrife Family	
**Lagerstroemia indica*	Crape-myrtle

Malvaceae - Mallow Family	
**Malva parviflora*	Cheeseweed
Moraceae - Mulberry Family	
**Ficus carica*	Common fig
Myrtaceae - Myrtle Family	
**Callistemon citrinus*	Crimson bottlebrush
**Eucalyptus globulus*	Blue gum
**Eucalyptus pulverulenta*	Silver-leaved gum
**Eucalyptus tereticornis*	Forest red gum
**Eucalyptus viminalis*	Manna gum
Oleaceae - Olive Family	
**Fraxinus* sp.	Ash
**Olea europaea*	Olive
Onagraceae - Evening Primrose Family	
Epilobium ciliatum	Hairy willow-herb
Papaveraceae - Poppy Family	
Eschscholzia caespitosa	Tufted poppy
Passifloraceae - Passion Flower Family	
**Passiflora caerulea*	Blue passion flower
Plantaginaceae - Plantain Family	
**Plantago lanceolata*	English plantain
Platanaceae - Plane Tree Family	
Platanus racemosa	Western sycamore
Plumbaginaceae - Leadwort Family	
**Limonium sinuatum*	Wavy-leaf sea-lavender
Polygonaceae - Buckwheat Family	
Eriogonum fasciculatum	California buckwheat
**Rumex crispus*	Curly dock
Rhamnaceae - Buckthorn Family	
Frangula californica subsp. californica	California coffeeberry
Rosaceae - Rose Family	
Heteromeles arbutifolia	Toyon
Prunus ilicifolia subsp. *ilicifolia*	Holly-leafed cherry
**Pyracantha* sp.	Pyracantha
Salicaceae - Willow Family	
Salix gooddingii	Goodding's black willow
Salix lasiolepis	Arroyo willow
Sapindaceae - Soapberry Family	
Acer macrophyllum	Big-leaf maple
Acer negundo	California box elder
Scrophulariaceae - Figwort Family	
**Verbascum thapsus*	Woolly mullein
Simaroubaceae - Quassia Family	
**Ailanthus altissima*	Tree of heaven
Solanaceae - Nightshade Family	
Datura wrightii	Thornapple
**Nicotiana glauca*	Tree tobacco
**Physalis philadelphica*	Tomatillo

Tamaricaceae - Tamarisk Family

**Tamarix ramosissima*	Saltcedar

Ulmaceae - Elm Family

**Ulmus parvifolia*	Chinese elm

Urticaceae - Nettle Family

**Urtica urens*	Dwarf nettle

Verbenaceae - Vervain Family

Verbena sp.	Verbena

Vitaceae - Grape Family

Vitis girdiana	Desert wild grape

Angiosperms -Monocots

Agavaceae - Agave Family

Hesperoyucca whipplei	Our Lord's candle

Arecaceae (Palmae) - Palm Family

**Phoenix dactylifera*	Date palm
**Washingtonia robusta*	Mexican fan palm

Asphodelaceae - Asphodel Family

**Aloe* sp.	Aloe

Cyperaceae - Sedge Family

Cyperus eragrostis	Tall flatsedge

Poaceae (Gramineae) - Grass Family

**Arundo donax*	Giant reed
**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Bromus madritensis* subsp. *rubens*	Red brome
**Bromus tectorum*	Cheat grass
**Cortaderia selloana*	Selloa pampas grass
**Cynodon dactylon*	Bermudagrass
**Ehrharta erecta*	Panic veldt grass
**Festuca perennis*	Italian ryegrass
**Hordeum murinum*	Foxtail barley
**Pennisetum ciliare*	Buffel grass
**Pennisetum setaceum*	Crimson fountain grass
**Polypogon monspeliensis*	Rabbit's-foot grass

Typhaceae - Cattail Family

Typha latifolia	Broad-leaved cattail

ATTACHMENT C: WILDLIFE SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

ATTACHMENT C: WILDLIFE SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

Invertebrates

Red swamp crawfish	*Procambarus clarkii*

Reptiles

Western fence lizard	*Sceloporus occidentalis*
Orange-throated whiptail	*Aspidoscelis hyperythrus*

Birds

Great blue heron	*Ardea herodias*
Snowy egret	*Egretta thula*
Turkey vulture	*Cathartes aura*
Canada goose	*Branta canadensis*
Cooper's hawk	*Accipiter cooperii*
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
American peregrine falcon	*Falco peregrinus anatum*
American coot	*Fulica americana*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Greater roadrunner	*Geococcyx californianus*
Black-chinned hummingbird	*Archilochus alexandri*
Anna's hummingbird	*Calypte anna*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Western kingbird	*Tyrannus verticalis*
Loggerhead shrike	*Lanius ludovicianus*
Least Bell's vireo	*Vireo bellii pusillus*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Bushtit	*Psaltriparus minimus*
Bewick's wren	*Thryomanes bewickii*
coastal California gnatcatcher	*Polioptila californica californica*
Western bluebird	*Sialia mexicana*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
Yellow warbler	*Dendroica petechia*
Yellow-rumped warbler	*Dendroica coronata*
California towhee	*Pipilo crissalis*
Song sparrow	*Melospiza melodia*
White-crowned sparrow	*Zonotrichia leucophrys*
House finch	*Carpodacus mexicanus*

Mammals	
Audubon's cottontail	*Sylvilagus audubonii*
California ground squirrel	*Spermophilus beecheyi*
Eastern fox squirrel	*Sciurus niger*
Botta's pocket gopher	*Thomomys bottae*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*

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ATTACHMENT D: SUPPLEMENTAL JURISDICTIONAL DELINEATION REPORT

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Supplemental Jurisdictional Delineation Report

for the

Mesa 500 kilovolt Substation Project

Prepared for:

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Prepared by:

INSIGNIA ENVIRONMENTAL

February 2015

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1 – INTRODUCTION

Southern California Edison Company (SCE) retained Insignia Environmental (Insignia) to review and verify the wetlands and waters on the Mesa 500 kilovolt (kV) Substation Project (Proposed Project) sites, which were previously mapped for the Tehachapi Renewable Transmission Project (TRTP). The Proposed Project area overlaps with portions of Segments 7, 8, 9, and 11 of the TRTP. In addition, Insignia documented any previously unmapped water features that were identified in the Proposed Project area. The Proposed Project area is located primarily in the city of Monterey Park, with additional components in Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, and in portions of unincorporated Los Angeles.

The purpose of this report is to provide the following:

- A summary of the methods and findings of the TRTP jurisdictional waters and wetlands delineation surveys
- Information regarding any changes to the TRTP findings documented by Insignia during June, September, and December 2014 site visits to the Proposed Project area
- Information on additional water features that were identified in the Proposed Project area

2 – PROJECT OVERVIEW

The main activity associated with the Proposed Project involves the construction of the proposed, approximately 69.4-acre 500/220/66/16 kV Mesa Substation and demolition of the existing, approximately 21.6-acre 220/66/16 kV Mesa Substation on SCE fee-owned property. The proposed Mesa Substation would be a staffed substation operating at 3,360 megavolt-ampere (MVA) with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV. The existing Mesa Substation occupies approximately 21.6 acres, which are within the same approximately 69.4-acre property on which the proposed Mesa Substation would be constructed.

SCE currently operates various 220 kV transmission lines, 66 kV subtransmission lines, 16 kV distribution lines, and telecommunications lines that connect to the existing Mesa Substation. As part of the Proposed Project, SCE would replace existing structures and lines as necessary, to allow these existing circuits to connect to the proposed Mesa Substation configuration. In addition, the Proposed Project involves the loop-in of one existing 500 kV circuit and two existing 220 kV circuits.

An overview of the Proposed Project area is provided in Figure 1: Project Overview Map. The Proposed Project would include the following main components:

- Demolition of the existing Mesa Substation and construction of the proposed Mesa Substation within the City of Monterey Park

- Removal, relocation, modification, and/or construction of transmission, subtransmission, distribution, and telecommunications structures within the cities of Monterey Park,

Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County

- Conversion of an existing street source line from overhead to underground between three street lights on Loveland Street within the City of Bell Gardens
- Installation of a temporary 220 kV line loop-in at Goodrich Substation within the City of Pasadena

3 – PROJECT BACKGROUND

Prior to the formal wetland delineation conducted by Insignia for the Proposed Project, several formal delineations were conducted for the TRTP that covered the majority of the Proposed Project area. A jurisdictional waters and wetlands delineation survey was conducted for Segment 7 and Segment 8 of the TRTP from September to November 2009 by ICF International (ICF). In addition, ICF conducted jurisdictional waters and wetlands delineation surveys for Segment 11 of the TRTP from November 2009 to July 2010, and also on April 4 and 5, 2011. During these surveys, all wetlands and waters that potentially met the United States (U.S.) Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), and California Department of Fish and Wildlife (CDFW) guidance criteria for jurisdictional waters were delineated. An in-depth discussion of the survey methods and results, as well as field data forms and photographs, were previously submitted to the USACE in 2010 with the *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 7 and 8* and the *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 6 and 11*. In addition, based on changes to the final engineering design for the TRTP, ICF prepared the *Tehachapi Renewable Transmission Project Segment 11A Goodrich to Mesa Transmission Line Jurisdictional Delineation and Impact Analysis Report*, which documented additional waters and wetlands on Segment 11 of the TRTP.

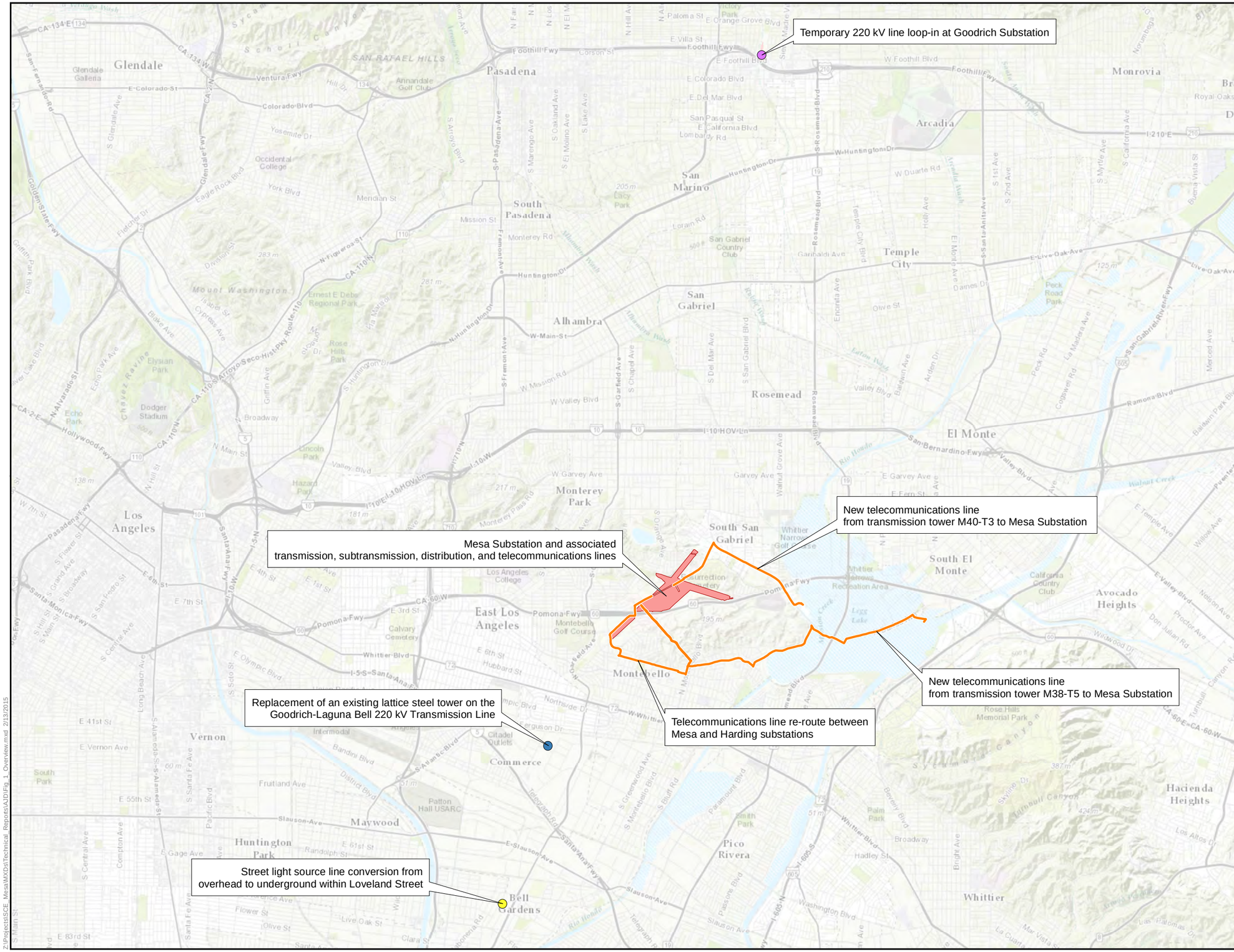
4 – METHODOLOGY OVERVIEW

4.0 LITERATURE REVIEW

4.0.0 TRTP Wetland Delineations

Before conducting the TRTP wetland delineations, ICF conducted a review of relevant literature pertaining to the TRTP prior to the initiation of the jurisdictional waters and wetlands delineation. The literature review included a review of aerial photographs of the TRTP, as well as U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles to identify potential drainage features in the TRTP survey area based on site characteristics, such as changes in vegetation types, topographic changes, or visible drainage patterns. In addition, ICF reviewed the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey soil survey maps (NRCS 2014). During this review, it was determined that specific soil series were not available throughout much of the TRTP alignment. Therefore, ICF was unable to determine if any soil series mapped on the Field Office Official List of Hydric Soil Map Units were present. More general soil information was obtained from the State Soil Geographic Database.

Figure 1:
Project Overview Map
Mesa 500 kV Substation Project



Main Component Study Areas

- Mesa Substation Study Area
- Proposed Telecommunications Study Area
- Goodrich Substation Study Area
- Goodrich-Laguna Bell 220 kV Tower Replacement Study Area
- Distribution Street Light Undergrounding Study Area

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4.0.1 Insignia Wetland Delineation

Before conducting the wetland delineation for the Proposed Project area in June, September, and December 2014, Insignia biologists reviewed U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory maps (USFWS 2014) and color aerial photographs (both recent and past) of the survey area and surrounding area. In order to verify the wetlands and waters that were documented for the TRTP, Insignia conducted a review of relevant literature pertaining to the Proposed Project prior to the site visit. The literature review included an analysis of the following reports (hereafter referred to as the "TRTP reports"):

- *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*
- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 7 and 8*
- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 6 and 11*
- *Tehachapi Renewable Transmission Project Segment 11A Goodrich to Mesa Transmission Line Jurisdictional Delineation and Impact Analysis Report*, which documented additional waters and wetlands on Segment 11 of the TRTP

The biologists also reviewed the soil survey of the study area from the USDA NRCS Web Soil Survey (NRCS 2014) in the El Monte and Mount Wilson USGS 7.5-minute quadrangles. The following USGS topographic maps were also reviewed for historical hydrological information:

- Pasadena (1896, 1900)
- Los Angeles (1894, 1900, 1949, 1955, 1959, 1966, 1975, 1979)
- Southern California Sheet No 1 (1901, 1904)
- Alhambra (1924, 1926)
- El Monte (1953, 1966, 1972, 1981, 1991, 1994)
- Sierra Madre (1928, 1933, 1941)
- Mount Wilson (1953, 1966, 1972, 1988, 1991, 1995)

4.1 JURISDICTIONAL DELINEATION AND VERIFICATION

4.1.0 Tehachapi Renewable Transmission Project Wetland Delineations

ICF wetland biologists performed the field investigation for the delineation from September to November 2009; November 2009 to July 2010; and on April 4 and 5, 2011. The delineation was conducted in accordance with the USACE's *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (USACE 2008a). During the delineation work, the TRTP was evaluated to identify wetlands and waters and their connection to off-site hydrological resources. Wetlands were identified by observing the presence of wetland parameters, including hydrophytic vegetation, wetland hydrology, and hydric soils. Waters were delineated by identifying the ordinary high water mark (OHWM) of the feature, the top of bank (TOB), and if applicable, the extent of riparian vegetation. Data was recorded on wetland field

data forms, and a submeter-accurate Global Positioning System (GPS) unit was used to record the boundaries and/or centerlines of the wetlands and waters.

4.1.1 Insignia Wetland Delineation

A preliminary jurisdictional wetland delineation of the Proposed Project area was conducted by the following Insignia biologists on the following dates:

- June 3 and 4, 2014 by Isabelle de Geofroy and Lauren Huff
- June 18 and 19, 2014 by Lauren Huff
- September 4 and 5, 2014 by Lauren Huff and Sheryl Creer
- December 15 through December 18, 2014 by Isabelle de Geofroy and Christina Sousa

The purpose of the delineation was to verify the jurisdictional waters and wetlands identified for the TRTP and to document any additional waters and wetlands in the Proposed Project area. The wetland delineation was conducted according to the USACE's *Wetlands Delineation Manual* (Environmental Laboratory 1987) in conjunction with the Arid West Supplement (USACE 2008a). Nomenclature used for plant names follows *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin 2012). Nomenclatural changes made after the publication date of this manual follow the Jepson eFlora (2014) website. Vegetation, hydrology, and soils information were taken at 12 data points to verify the boundaries of the wetlands identified in the Proposed Project site. Data points were mapped using a Trimble Pro-XR GPS unit with submeter accuracy. The delineation map was made from the GPS files using ArcMap 10.1. All spatial data were projected into the California State Plane, NAD 83 coordinate system, Zone 5. Using GPS technology, the boundaries (within 30 inches) of each delineated wetland were transferred to an aerial photograph of the Proposed Project area.

For an area to be defined as a wetland under normal circumstances, the USACE's routine on-site determination methods call for the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. Evidence supporting the jurisdictional determination at each data point was recorded on field data forms. Photographs were also taken at each data point.

The vegetation communities and descriptions documented in the TRTP reports were confirmed. The location, OHWM width (if applicable), and TOB width (if applicable) of all water features observed were recorded using a submeter-accurate GPS unit. For the sake of consistency, nomenclature from the TRTP delineation reports was used to identify the mapped features. For this reason, 2 of the 8 drainages have been mapped into segments. One ephemeral drainage has been mapped as three segments with feature identification (ID) numbers 7-38-S-1, 7-39-S-1, and 11-138-S-100. A second ephemeral drainage has been mapped as two segments, with feature ID numbers 11-136-S-100 and 11-136-S-101.

A preliminary wetland delineation map and a Request for an Approved Jurisdictional Determination were prepared in compliance with the following USACE documents:

- The 2001 Minimum Standards for Acceptance for Preliminary Delineations
- The 2007 Jurisdictional Determination Form Instructional Guidebook
- The 2012 Final Map and Drawing Standards for the South Pacific Division Regulatory Program

5 – RESULTS

5.0 ENVIRONMENTAL SETTING

The Proposed Project is located within the Los Angeles River Hydrological Unit. The elevation of the Proposed Project ranges from 130 feet to 750 feet above mean sea level, with the lower elevations in the southwest portion of the Proposed Project area, and the higher elevations at the northeast portion of the Proposed Project area. Between 1981 and 2010, rainfall records from the nearest climatological station (which is in the City of Montebello) to the Proposed Project area show an average annual rainfall of approximately 15.3 inches. Between 1981 and 2010, the average annual temperature for this area was approximately 67.4 degrees Fahrenheit (°F), with a minimum temperature of 55.4°F and a maximum temperature of 79.4°F.

Vegetation community descriptions and their locations within the TRTP survey boundaries were taken from the TRTP analysis provided in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*. Vegetation communities were added or revised by Insignia following surveys. The majority of the plant communities were characterized according to R.F. Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The remaining plant communities were characterized by TRTP or by Insignia. Vegetation communities that were observed during the 2014 field visits include the following:

- California annual grassland
- California walnut woodland
- Coast live oak woodland
- Coastal sage scrub
- Disturbed/developed areas
- Mulefat scrub
- Non-native giant reed
- Non-native woodland
- Riparian woodland
- Ruderal
- Southern sycamore-alder riparian woodland
- Ephemeral drainages
- Intermittent drainage
- Man-induced wetlands

Riparian vegetation generally consisted of native species (e.g., willow [*Salix* spp.] and mulefat [*Baccharis salicifolia*]) and non-native species (e.g., Brazilian pepper tree [*Schinus terebinthifolius*], date palm [*Phoenix dactylifera*], English walnut [*Juglans regia*], Chinese elm [*Ulmus parvifola*], and Mexican fan palm [*Washingtonia robusta*]).

5.1 WETLANDS AND WATERS

A preliminary wetland delineation map of the Proposed Project area is depicted in Attachment A: Preliminary Wetland Delineation Map. Photographs of hydrological features are included as Attachment B: Photographs of Hydrological Features. No jurisdictional waters were identified by Insignia on the Goodrich Substation site. On the Mesa Substation site, Insignia biologists visited

20 water features previously documented for the TRTP. Of these, field conditions for 15 features were different than described in the TRTP reports. In addition, Insignia mapped 17 new water features in the portion of the Proposed Project area that was outside of the original TRTP survey area. Table 1: Wetlands and Waters provides the following information:

- A description of each wetland and water feature described in the TRTP reports
- A description of each wetland and water feature documented by Insignia during the June, September, and December 2014 site visits
- A description of any additions and changes to the wetlands and waters observed by Insignia since the preparation of the TRTP reports
- Information regarding the acreage of wetlands and waters that fall within the jurisdiction of the USACE, SWRCB, and/or CDFW in the TRTP reports

Table 1: Wetlands and Waters

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-39-S-7	1, 2 (Not Applicable [N/A])	N/A (N/A)	N/A (N/A)	N/A (N/A)	Non-native woodland (Not described)	Man-made ditch (Not described)	This feature is a man-made concrete-lined ditch that collects direct precipitation and runoff. This ditch drains into the storm water system.	**Change.** This is a new feature that was not previously identified in the TRTP reports.
7-39-S-5	2 (N/A)	0.24 (N/A)	0.04 (N/A)	0.04 (N/A)	Ruderal/Disturbed/ Developed (Not described)	Ephemeral drainage (Not described)	This feature is an ephemeral drainage surrounded by disturbed riparian woodland. Water enters this feature through a large box culvert under Via Campo Road. This feature continues to flow southwest and across an existing access road via sheet flow. To the west of the access road, the drainage is ephemeral. The drainage exits the Proposed Project area to the west under a fence. A retaining wall was constructed on the east bank of this drainage just east of the existing access road. The average OHWM width for this feature is approximately 2 feet. The average OHWM depth for this feature is approximately 2 inches. The average TOB width for this feature is approximately 10 feet. The average TOB depth for this feature is approximately 5 feet.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.
11-94-S-5	3, 4, 6, 7 (11-93, 94)	1.16 (N/A)	0.27 (N/A)	0.27 (N/A)	Disturbed/Developed/ Riparian-disturbed/ Non-native woodland (Not described)	Ephemeral drainage (Not described)	This drainage is depicted as intermittent on the 1924 USGS topographic maps. Historically, the drainage connected to the Los Angeles River. The 1981 USGS topographic map for El Monte also depicts this drainage, which has since been partially channelized where it parallels the Mesa Substation footprint. The western portion of the drainage is dirt-lined and is surrounded by ornamental/non-native vegetation. This drainage is fed by runoff from Mesa Substation via a man-made ditch (Feature 11-94-S-1). It also receives runoff from Potrero Grande Drive, surrounding lands, and direct precipitation. It flows northeast to southwest, where it closely follows the perimeter of the substation footprint. To the west of Mesa Substation, the drainage flows through a series of culverts under SCE access roads, and into a culvert under East Markland Drive. It then continues to the west of East Markland Drive where it meets a raised landform and dissipates.	**Change.** The conditions of this feature were verified to be similar to those described in the TRTP reports. However, this drainage was combined with 11-94-S-1. This portion of the drainage is not concrete-lined and appears to be historical.

[1] TRTP mapbook page numbers starting with "7-" are taken from ICF 2010b; pages starting with "11-" are taken from ICF 2010a; and pages starting with "11A-" are taken from ICF 2011.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
11-94-S-2	3, 4, 6 (N/A)	0.05 (N/A)	0.02 (N/A)	0.02 (N/A)	Disturbed/Developed/ Non-native woodland (Not described)	Ephemeral drainage (Not described)	This feature is an ephemeral drainage that enters the Proposed Project area at Potrero Grande Drive and flows south until it connects with Feature 11-94-S-1. The feature is surrounded by ornamental vegetation. The average OHWM width for this feature is approximately 2 feet. The average OHWM depth for this feature is approximately 2 inches. The average TOB width for this feature is approximately 7 feet. The average TOB depth for this feature is approximately 3 feet.	**Change.** This feature was not described in the TRTP reports; however, it was mapped during the TRTP surveys as an "Other Potential (Avoid)" feature.
7-38-S-1 7-39-S-1 11-138-S-100	4, 7, 8 (7-43, 7-45, 11A-136)	0.13 (0.077)	0.01 (0.035)	0.01 (0.035)	Disturbed/Developed (Unvegetated/Disturbed and/or developed)	Ephemeral drainage (Concrete ephemeral drainage)	This drainage is a concrete-lined, constructed drain fed by runoff from the adjacent nursery and parking lot, and by direct precipitation. It flows southwest and empties into a culvert under Greenwood Avenue, discharging directly into 7-39-S-1.	**No Change.** This feature was verified to be similar to the conditions described in the TRTP reports.
		0.81 (0.514)	0.08 (0.049)	0.08 (0.049)	Ruderal (California annual grassland)	Ephemeral drainage (An urban canyon intermittent drainage that is unvegetated in portions and contains riprap with concrete in portions. This portion of the drainage has an adjacent wetland.)	This drainage is a continuation of Feature 7-38-S-1, and is depicted as intermittent on historical USGS topographic maps as far back as 1924. In the 1981 USGS topographic map for El Monte, this drainage is no longer mapped. It receives runoff from surrounding lands; direct precipitation; and, farther downstream, man-made ditch 11-94-S-1 and drainages 7-39-S-2 and 7-39-S-3. At the southwest corner of the Mesa Substation footprint, this drainage continues as Feature 11-138-S-100. The drainage is dirt-bottomed, but highly manipulated in places. Mulefat is growing intermittently along this drainage.	**Change**. This feature was completely dry at the time of the June 2014 site visit and was documented as an ephemeral drainage instead of an intermittent drainage. It is likely that hydrological conditions at the Proposed Project area have changed since this feature was described for the TRTP reports. In addition, TOB measurements may be different than those calculated for the TRTP reports.
		0.17 (0.154)	0.06 (0.06)	0.06 (0.06)	Disturbed/Developed (Ruderal-castor bean dominated)	Ephemeral drainage (Ephemeral drainage)	This feature is a manipulated ephemeral drainage. Feature 7-39-S-1 drains into this feature via two approximately 4-foot-diameter corrugated metal pipe (CMP) culverts. Two approximately 5-foot-diameter CMP culverts convey water downstream from this feature under an existing access road. This feature extends off site along the southern boundary of the Proposed Project area.	**Change.** This feature was verified to be similar to the conditions described in the TRTP reports. However, the feature extends farther west than the feature provided in the TRTP reports.
7-39-S-1	-- (7-45)	N/A (0.043)	N/A (N/A)	N/A (N/A)	Mulefat scrub (Mulefat scrub)	N/A (Riparian canopy)	The vegetation at the northern portion of the drainage is disturbed mulefat scrub.	**Change.** This vegetation was verified to be similar to the conditions described in the TRTP reports. However, the mulefat scrub is highly disturbed and sparse.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-39-S-6	3 (N/A)	0.04 (N/A)	0.03 (N/A)	0.03 (N/A)	Disturbed/Developed (Not described)	Ephemeral drainage (Not described)	This feature is an ephemeral drainage. An approximately 3-foot-diameter CMP culvert is located at the east end of the drainage; however, the culvert does not appear to connect this feature to another water feature. This is likely due to ground disturbance in the area surrounding the feature. The feature extends to the west and connects to Feature 11-138-S-100. The average OHWM width for this feature is approximately 2 feet. The average OHWM depth for this feature is approximately 3 inches. The average TOB width for this feature is approximately 6 feet. The average TOB depth for this feature is approximately 1.5 feet.	**Change.** This feature was not described in the TRTP reports; however, it was mapped during the TRTP surveys as an "Other Potential (Avoid)" feature.
7-39-S-1	-- (7-45)	-- (0.050)	N/A (N/A)	N/A (N/A)	Ruderal (Ruderal wetland/ Disturbed and/or developed)	N/A (Riparian canopy)	Ruderal vegetation was observed along the majority of this drainage.	**Change.** This vegetation was verified to be similar to the conditions described in the TRTP reports. However, the vegetation is highly disturbed and sparse.
7-39-W-1	-- (7-45)	- (0.117)	N/A (0.117)	N/A (0.117)	N/A (Mulefat scrub)	Ephemeral drainage (Wetland associated with Feature 7-39-S-1)	The data point for this wetland was taken by ICF within Feature 7-39-S-1 where ponding occurs immediately downstream of a culvert that carries water from Feature 7-38-S-1 under Greenwood Avenue. The soils in this area were dry. In addition, there was no vegetation in the sample area. The previous description for Feature 7-39-S-1 provides more information.	**Change.** Conditions at this feature were verified to be similar to those described in the TRTP reports. However, this feature is part of ephemeral drainage 7-39-S-1.
11-94-S-1	4, 5, 6, 7 (11A-135, 136)	(N/A) (1.095)	(N/A) (0.371)	(N/A) (0.371)	Non-native woodland/ Disturbed/Developed/ Ruderal (Ornamental)	Man-made ditch (Ephemeral drainage)	This feature is a concrete perimeter drain constructed along the northern, eastern and southern borders of Mesa Substation, capturing and diverting storm water runoff from the substation. The drain is bifurcated on the eastern side of the substation, and runoff is discharged from northern and southern locations. Beyond these two discharge points run off is carried within separate earthen channels, both draining to the southwest. The northernmost channel retains the label 11-94-S-1, while the southern channel confluences with the southern reach of channel 7-39-S-1, described above. Runoff from the perimeter drain is discharged from the southern portion of the drain, where it confluences with Feature 7-39-S-1 and continues in the feature labeled7-39-S-1. Adjacent vegetation is ornamental, non-native woodland.	**Change.** The conditions of this feature were verified to be similar to those described in the TRTP reports. However, the TRTP reports combined the man-made portion of this ditch with the historical ephemeral drainage. This ditch is separate from Feature 11-94-S-5.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-39-S-2	4, 5 (7-45)	0.35 (0.224)	0.05 (0.082)	0.05 (0.082)	Riparian woodland-disturbed/ Disturbed/Developed (California annual grassland/ Ruderal grassland)	Ephemeral drainage (An urban canyon intermittent drainage that contains riprap with concrete)	Flows from this drainage enter the Proposed Project area from the south, then travel via sheet flow to the northwest across an SCE access road. The drainage then becomes channelized and flows through a culvert to the west, where it connects to Feature 7-39-S-1. This drainage is fed by runoff from the landfill south of State Route 60, from direct precipitation, and from surrounding lands. The southern portion of Feature 7-39-S-2 is concrete- and riprap-lined in places, and dirt-lined in its eastern reach. The drainage supports riparian canopy mostly comprised of non-native trees and shrubs.	**Change.** This feature was completely dry at the time of the June 2014 site visit and was documented as an ephemeral drainage instead of an intermittent drainage. It is likely that hydrological conditions at the Proposed Project area have changed since this feature was described in the TRTP reports.
7-39-S-2	N/A (7-45)	N/A (0.117)	N/A (0.000)	N/A (0.117)	Ruderal (Ruderal wetland/ Ruderal grassland)	Ephemeral drainage (An urban canyon intermittent drainage that is densely vegetated with a mix of non-native and native riparian vegetation)	Ruderal vegetation was observed along the majority of this drainage.	**No Change.** This vegetation was verified to be similar to the conditions described in the TRTP reports.
7-39-S-3	5, 7 (7-43, 45)	0.35 (0.010)	0.34 (0.000)	0.34 (0.002)	Disturbed/Developed (Unvegetated/ Ruderal grassland)	Ephemeral drainage (An urban canyon intermittent drainage channel with a sandy bottom and concrete rubble)	Flows from this drainage enter the Proposed Project area via a culvert from a landfill to the southeast and empty into Feature 7-39-S-3. A portion of the drainage immediately downstream from the first culvert is lined with riprap and concrete. The remainder of the drainage is dirt-lined. This drainage is fed by runoff via a culvert from the landfill across Greenwood Avenue, from surrounding lands, and from direct precipitation. Mule fat is scattered along the dirt-lined portion of this drainage.	**Change.** This feature was completely dry during the June 2014 site visit and was documented as an ephemeral drainage instead of an intermittent drainage. Hydrological conditions near this feature have changed since this feature was described in the TRTP reports because the eastern slope above the drainage is no longer subject to irrigation. In addition, it is likely a USACE-jurisdictional feature because an OHWM is present throughout the majority of the drainage, water flows into this feature through a culvert under Greenwood Avenue, and the feature is connected to Feature 7-39-S-1.
7-39-S-3	5, 7 (7-43, 45)	N/A (0.046)	N/A (0.000)	N/A (0.024)	N/A (Ruderal wetland/ Ruderal grassland)	N/A (An urban canyon intermittent drainage that is sparsely vegetated with mostly non-native riparian vegetation)	See previous description.	See previous description.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-39-W-2	5, 7 (7-43, 45)	N/A (0.120)	N/A (0.120)	N/A (0.120)	N/A (Mulefat scrub)	N/A (Wetland associated with Feature 7-39-S-2)	This area does not appear to be a wetland. The TRTP data sheet states that at the time of the September 2009 delineation, the eastern slope of the drainage was subject to irrigation associated with slope revegetation efforts. At the time of the June 2014 site visit, the irrigation system was no longer in place, and no hydrology or evidence of water ponding was observed in this area. Therefore, this area was determined to be a part of the drainage and is no longer considered a wetland. The previous description for Feature 7-39-S-3 provides more information.	**Change.** This wetland is no longer present. Hydrological conditions near this feature have changed since the feature was described in the TRTP reports. The eastern slope above the drainage is no longer subject to irrigation. This area should be remapped to be a part of Feature 7-39-S-3.
7-39A-S-2	5, 7 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Disturbed/Developed (Not described)	Erosional channel (Not described)	This feature is an erosional feature that has no connectivity to any other feature.	**N/A.** This feature was mapped during the TRTP delineations; however, it was not described in the TRTP reports. This feature is not USACE-jurisdictional because it is an erosional feature that drains wholly within an upland and is not connected to another water feature.
11-135-S-101	6 (11A-135)	N/A (0.015)	N/A (0.008)	N/A (0.008)	Developed/Disturbed/ Non-native woodland (Disturbed/Developed)	Man-made ditch (Ephemeral drainage)	This feature is a concrete man-made ditch. The feature runs along the top of a steep slope at the base of a row of ornamental trees. The feature collects runoff from the slope and directs it down into a storm drain along Potrero Grande Drive.	**Change.** This feature was verified to be similar to the conditions described in the TRTP reports. However, it is a man-made ditch and is therefore non-jurisdictional.
11-135-S-102	6 (11A-135)	N/A (0.061)	N/A (0.020)	N/A (0.020)	Disturbed/Developed (Disturbed/Developed)	Man-made ditch (Ephemeral drainage)	This feature is a concrete man-made ditch that collects runoff from a parking lot to the north of the Proposed Project area and directs it to a storm drain along Potrero Grande Drive.	**Change.** This feature was verified to be similar to the conditions described in the TRTP reports. However, it is a man-made ditch and is therefore non-jurisdictional.
11-136-S-100	7, 11 (11A-135)	0.11 (0.046)	0.02 (0.052)	0.02 (0.052)	Disturbed/Developed (Ruderal grassland/ Non-native woodland)	Ephemeral Drainage (Ephemeral drainage)	The southern portion of this drainage is a concrete ephemeral drainage. An approximately 3-foot-diameter concrete culvert carries water out of the Proposed Project area under Saturn Street. The upstream portion of this drainage appears to be an eroded ephemeral gully. Water from the gully passes under an existing access road through an approximately 2-foot-diameter CMP. OHWM and TOB measurements may be different than calculated for the TRTP reports. The northern portion of this drainage also contains riparian woodland.	**Change.** This feature was verified to be similar to the conditions described in the TRTP reports. However, Insignia's OHWM and TOB measurements may be different than what was calculated for the TRTP reports.
11-136-S-101		0.12 (N/A)	0.02 (N/A)	0.02 (N/A)	Disturbed/Developed (Not described)	Ephemeral drainage (Not described)	This drainage is a continuation of Feature 11-136-S-100, north of Saturn Street. This drainage is dirt-lined and is associated with a dense riparian canopy of black elderberry (*Sambucus nigra* ssp. *caerulea*), mulefat, Mexican fan palm, and Brazilian pepper tree. It exits the site to the south via a culvert at Potrero Grande Drive. Although the culvert outlet could not be located, the drainage most likely empties into a storm drain that appears to flow into the Rio Hondo and eventually into the Los Angeles River.	**Change.** This feature was not mapped in the TRTP reports.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
11-134-S-100	8, 13, 15 (11-134)	N/A (0.034)	N/A (0.011)	N/A (0.011)	Ruderal (Ruderal grassland)	Man-made ditch (Ephemeral drainage)	This feature is a concrete man-made ditch. Concrete was broken or absent on portions of the ditch. The southern portion of this drainage passes under an existing access road via an approximately 2-foot-diameter CMP culvert. The downstream portion of this drainage exits the Proposed Project area via an approximately 2-foot-diameter CMP culvert.	**Change.** This feature was verified to be similar to the conditions described in the TRTP reports. However, it is a man-made ditch and is therefore non-jurisdictional.
Wetland (W) 1	8 Not Applicable (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (Not described)	Man-induced wetland (Not described)	This water feature appears to have developed as a result of a leaking underground irrigation pipe associated with Mejia's Nursery. A Mejia's Nursery employee stated that the pipe will be repaired. This feature contained a small amount of standing water, supporting wetland vegetation that included tall flatsedge (*Cyperus eragrostis*), broad-leaved cattail (*Typha latifolia*), and hairy willowherb (*Epilobium ciliatum*).	**Change.** This is a new feature that was not previously identified in the TRTP reports.
W2	8 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (Not described)	Man-induced wetland (Not described)	This water feature appears to have developed as a result of a leaking underground irrigation pipe associated with Mejia's Nursery. A Mejia's Nursery employee stated that the pipe will be repaired. This feature supports wetland vegetation, including tall flatsedge, broad-leaved cattail, broadleaf pepperweed (*Lepidium latifolium*), and hairy willowherb.	**Change.** This is a new feature that was not previously identified in the TRTP reports.
W5	8 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (Not described)	Man-induced wetland (Not described)	This water feature appears to have developed as a result of a leaking underground irrigation pipe associated with Mejia's Nursery. A Mejia's Nursery employee stated that the pipe will be repaired. This feature contained standing water. In addition, wetland vegetation was present, including tall flatsedge, broadleaf peppergrass, rabbit's-foot grass (*Polypogon monspeliensis*), and hairy willowherb.	**Change.** This is a new feature that was not previously identified in the TRTP reports.
W3	8 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (Not described)	Man-induced wetland (Not described)	This water feature appears to have developed as a result of a leaking underground irrigation pipe associated with Mejia's Nursery. A Mejia's Nursery employee stated that the pipe will be repaired. This feature supports wetland vegetation, including tall flatsedge, broad-leaved cattail, broadleaf pepperweed, and hairy willowherb.	**Change.** This is a new feature that was not previously identified in the TRTP reports.
W4	8 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (Not described)	Man-induced wetland (Not described)	This water feature appears to have developed as a result of a leaking underground irrigation pipe associated with Mejia's Nursery. A Mejia's Nursery employee stated that the pipe will be repaired. This feature contained standing water. In addition, wetland vegetation was present, including tall flatsedge, broadleaf peppergrass, rabbit's-foot grass, and hairy willowherb.	**Change.** This is a new feature that was not previously identified in the TRTP reports.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-37-S-1	10 (7-42)	N/A (0.014)	N/A (0.014)	N/A (0.014)	Ruderal (Ruderal grassland)	Erosional channel (Incised ephemeral drainage)	This is an erosional feature that drains road runoff. The feature appears to end downhill, and no connectivity to another feature was observed during the June 3 and 4, 2014 site visit.	**Change.** This is an erosional feature that is not USACE-jurisdictional because it drains wholly within an upland, carries road runoff during significant storm events, and is not connected to another water feature.
11-136-S-102 11-136-S-103	11, 12 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Ruderal (Not described)	Man-made ditch (Not described)	This man-made ditch drains runoff from a residential area. It flows south, down a disturbed terraced hillside and drains into Feature 11-136-S-103. This man-made ditch flows west to east, parallel to a dirt access road. It is partially lined with cement and carries runoff from a disturbed terraced hillside and residential area.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.
11-136-S-105	11, 12 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Ruderal (Not described)	Man-made ditch (Not described)	This man-made ditch drains runoff from a disturbed terraced hillside. It flows northwest to southeast.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.
11-136-S-104	11, 12 (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Ruderal (Not described)	Man-made ditch (Not described)	This man-made ditch flows northeast to southwest, draining a disturbed terraced hillside.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.
7-39-S-10 7-39-S-9 7-39-S-8	25	N/A (N/A)	N/A (N/A)	N/A (N/A)	Non-native woodland (Not described)	Man-made ditch (Not described)	Feature 7-39-S-8 is a concrete- and riprap-lined ditch that drains runoff from a landfill. This feature flows from east to west, through a culvert under a dirt access road, and drains into Feature 7-39-S-9. This feature then flows from northeast to southwest, and converges with Feature 7-39-S-10 into the storm drain system. Feature 7-39-S-10 is a concrete-lined ditch that collects run-off from a gas facility. This feature flows from northwest to southeast and drains into a culvert under a paved access road where it then enters the storm drain system.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.

Feature Number	Insignia Mapbook Page(s) (TRTP Mapbook Page[s][1])	Approximate Jurisdiction Insignia Estimate (TRTP Estimate) (Acres)			Insignia Vegetation Type Description (TRTP Vegetation Type Description)	Insignia Feature Type (TRTP Feature Type)	Insignia Description	Insignia Verification (Change/No Change from TRTP Conditions)
		CDFW	USACE	SWRCB				
7-39-S-11 (Rio Hondo)	39	1.04 (N/A)	0.15 (N/A)	0.15 (N/A)	Southern sycamore-alder riparian woodland/Non-native giant reed/Mulefat scrub (Not described)	Intermittent Drainage (Not described)	Rio Hondo is an intermittent drainage that traverses the Proposed Project area under North San Gabriel Road. This feature drains into the Los Angeles River approximately 9 miles to the southwest of North San Gabriel Road. The Rio Hondo is generally dry in the summer months, flowing after the start of winter rains. The bed of the drainage is sandy and sparsely vegetated with polygonum (*Polygonum* sp.). The banks are vegetated with giant reed (*Arundo donax*), Goodding's black willow (*Salix gooddingii*), mulefat, castor bean (*Ricinus communis*), dwarf nettle (*Urtica urens*), and California buckwheat (*Eriogonum fasciculatum*), among others. The average OHWM width for this feature is approximately 45 feet. The average OHWM depth for this feature is approximately 1.5 feet. The average TOB width for this feature is approximately 275 feet. The average TOB depth for this feature is approximately 16 feet.	**Change.** This is a new feature that was not previously identified in the TRTP reports because it is outside the limits of the TRTP survey area.
N/A	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Ruderal (Not described)	Isolated man-made ditch (Other)	This feature is an isolated man-made concrete ditch. The feature conveys runoff from a steep slope into a topographic depression vegetated by giant reed.	**Change.** This feature was not described in the TRTP reports; however, it was mapped during the TRTP surveys as an "Other Potential (Avoid)" feature. This feature does not have connectivity to another water feature and is therefore non-jurisdictional.
N/A	N/A (N/A)	N/A (N/A)	N/A (N/A)	N/A (N/A)	Ruderal (Not described)	N/A (Other)	This feature is a topographic depression vegetated by giant reed. A sample pit was dug in this area and no hydric soils were present. In addition, no evidence of hydrology was observed. Therefore, this feature does not meet the USACE criteria for a wetland.	**Change.** This feature was not described in the TRTP reports; however, it was mapped during the TRTP surveys as an "Other Potential (Avoid)" feature. Insignia determined that this feature is an upland area and not a wetland.

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ATTACHMENT A: PRELIMINARY WETLAND DELINEATION MAP

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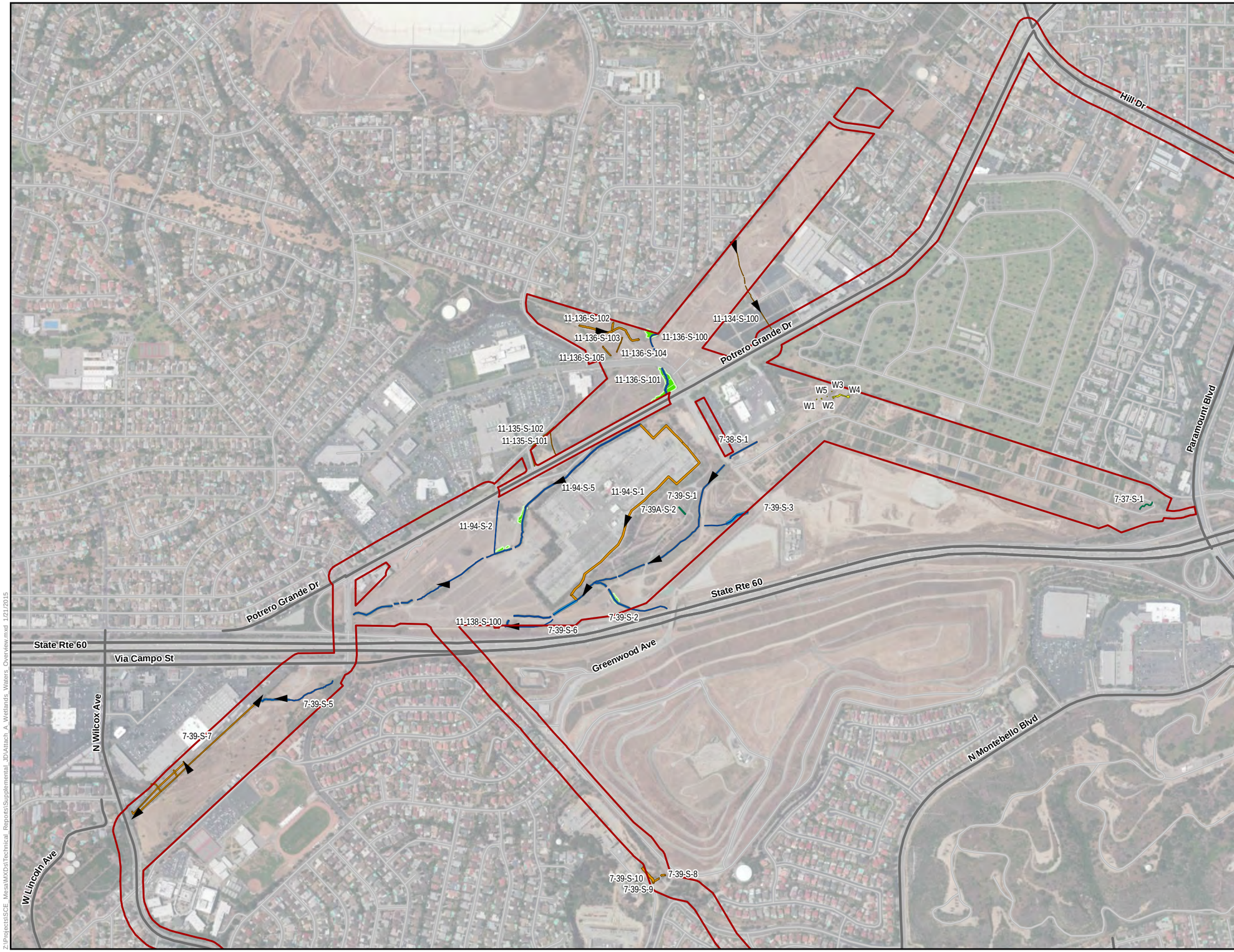
Attachment A: Preliminary Wetland Delineation Map Overview

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)

Riparian (0.71 acre)

Non-Jurisdictional Waters

Man-Induced Wetland (0.04 acre)

Man-Made Ditch

Erosional Channel

Note: Some drainages mapped by the TRTP may be partially outside the survey area

*Please note that unnamed features in this report are labeled as "Other Potential (Avoid)". This designation was provided with the TRTP Geographic Information System data. The TRTP Jurisdictional Delineation Reports do not further describe these features.

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Attachment A: Preliminary Wetland Delineation Map 1 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

Man-Induced Wetland (0.04 acre)
Man-Made Ditch
Erosional Channel

Note: Some drainages mapped by the TRTP may be partially outside the survey area

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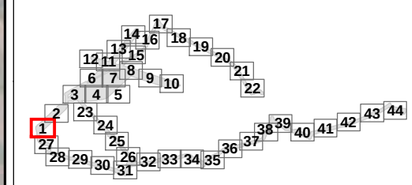
Survey Area



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Attachment A: Preliminary Wetland Delineation Map 2 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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- Riparian (0.71 acre)

Non-Jurisdictional Waters

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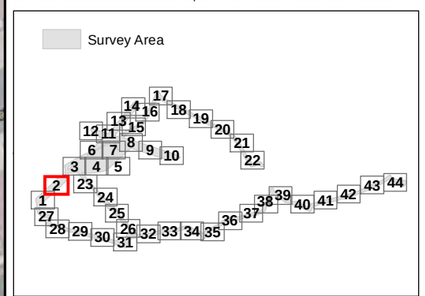

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Attachment A: Preliminary Wetland Delineation Map 3 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

Culvert

Sample Point

Storm Drain

Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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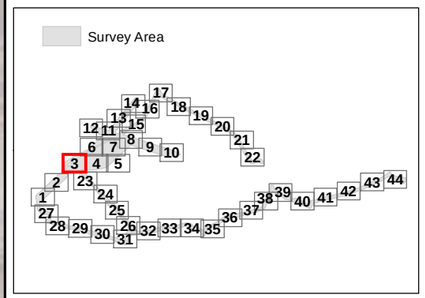

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Attachment A: Preliminary Wetland Delineation Map 4 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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Riparian (0.71 acre)

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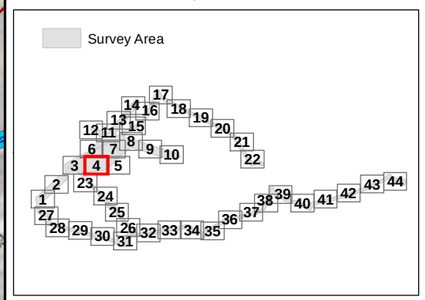

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Attachment A: Preliminary Wetland Delineation Map 5 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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- Riparian (0.71 acre)

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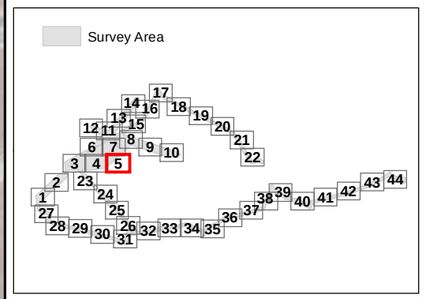

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Attachment A: Preliminary Wetland Delineation Map 6 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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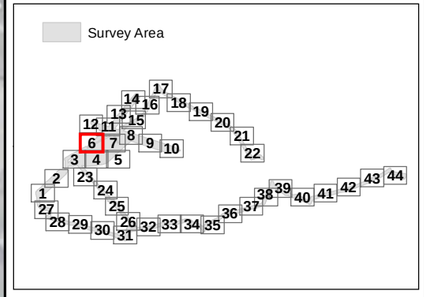

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Attachment A: Preliminary Wetland Delineation Map 7 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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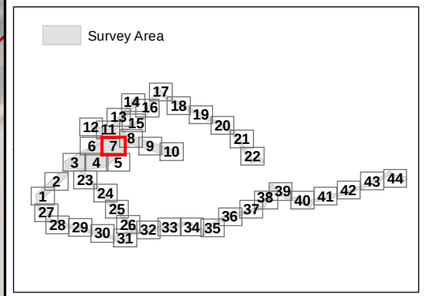

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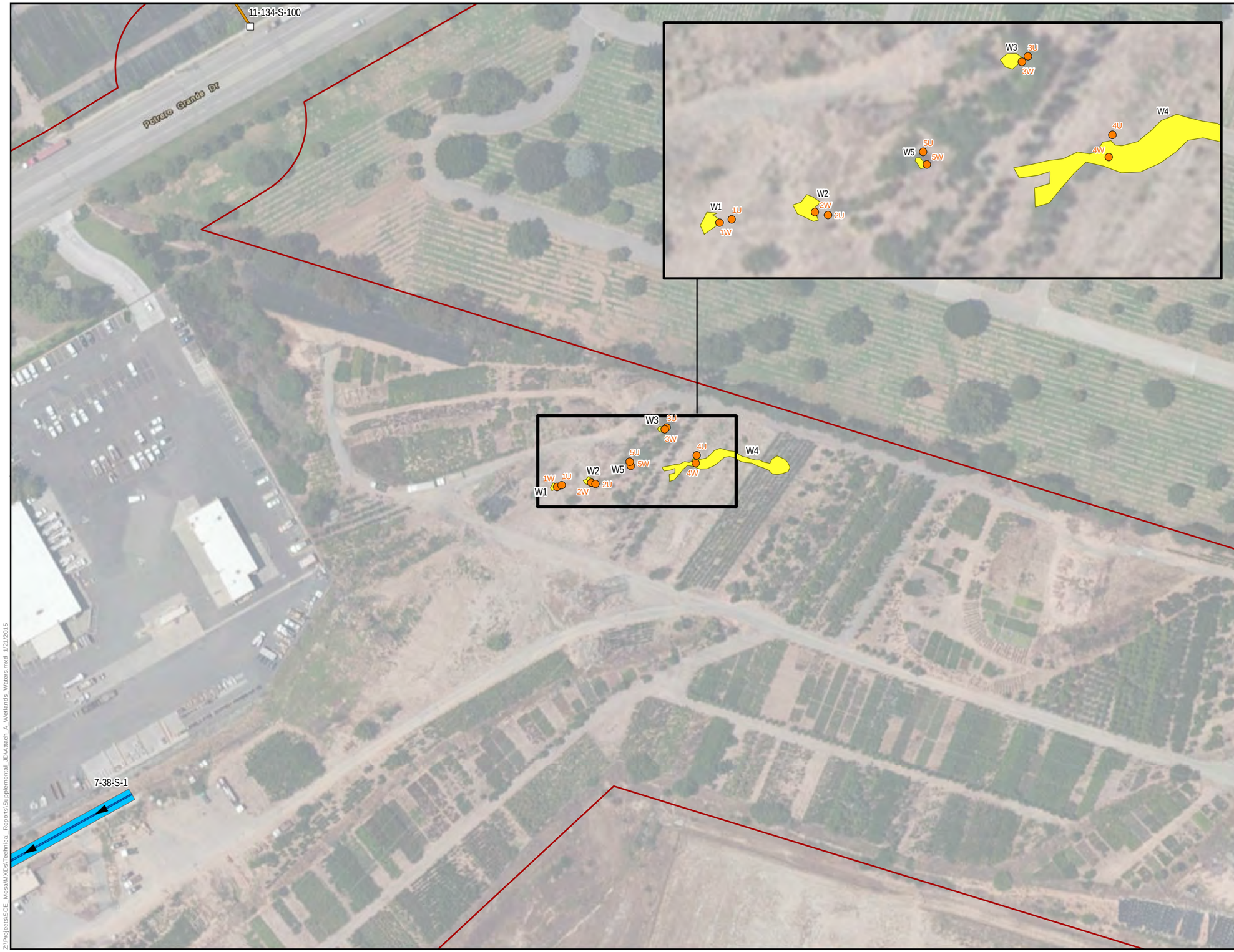

Attachment A: Preliminary Wetland Delineation Map 8 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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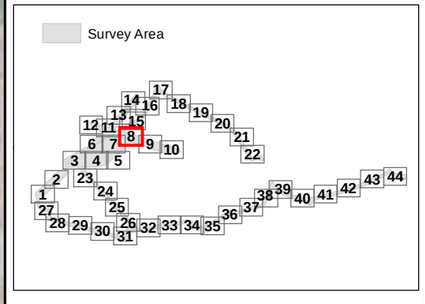

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Attachment A: Preliminary Wetland Delineation Map 9 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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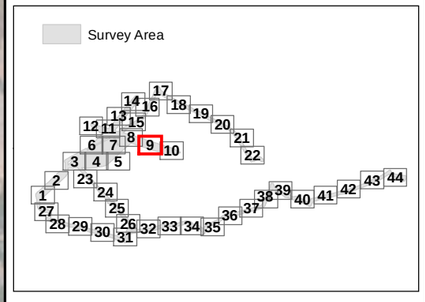

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Attachment A:
Preliminary Wetland Delineation Map 10 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

Culvert

Sample Point

Storm Drain

Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

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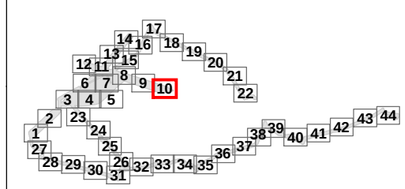

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Attachment A: Preliminary Wetland Delineation Map 11 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

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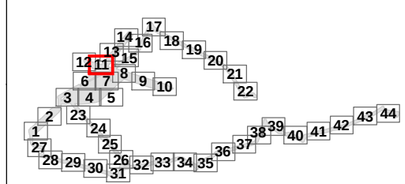
Survey Area



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Attachment A:
Preliminary Wetland Delineation Map 12 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

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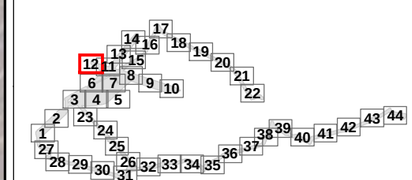

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Attachment A: Preliminary Wetland Delineation Map 13 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

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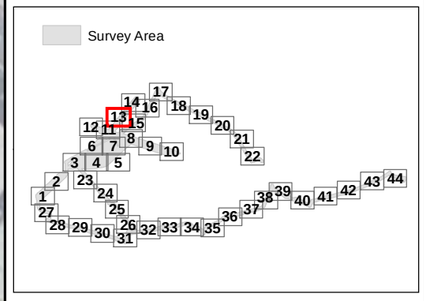

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Attachment A: Preliminary Wetland Delineation Map 14 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

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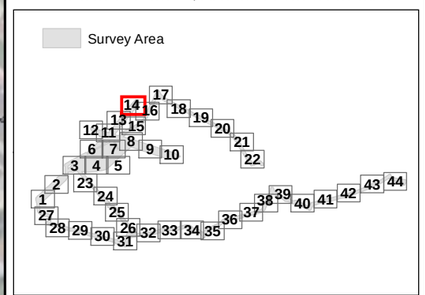

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Attachment A: Preliminary Wetland Delineation Map 15 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

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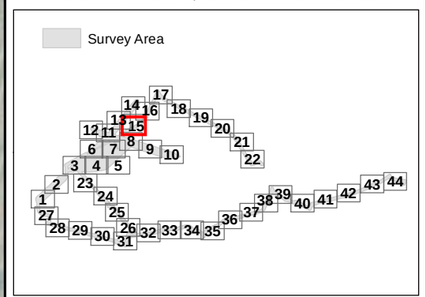

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Attachment A: Preliminary Wetland Delineation Map 16 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

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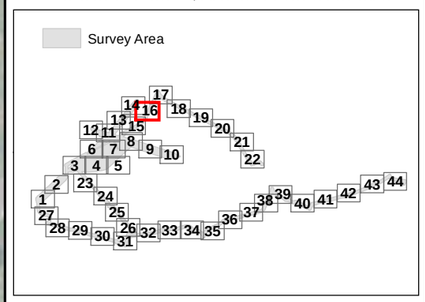

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Attachment A: Preliminary Wetland Delineation Map 17 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

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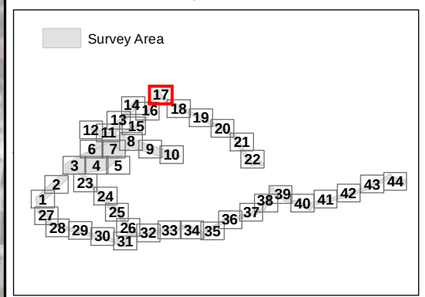

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Attachment A: Preliminary Wetland Delineation Map 18 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
- Riparian (0.71 acre)

Non-Jurisdictional Waters

- Man-Induced Wetland (0.04 acre)
- Man-Made Ditch
- Erosional Channel

Note: Some drainages mapped by the TRTP may be partially outside the survey area

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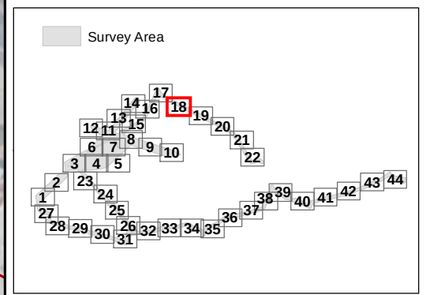

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Attachment A: Preliminary Wetland Delineation Map 19 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

Man-Induced Wetland (0.04 acre)
Man-Made Ditch
Erosional Channel

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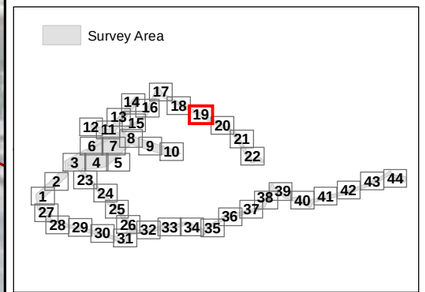

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Attachment A: Preliminary Wetland Delineation Map 20 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
- Riparian (0.71 acre)

Non-Jurisdictional Waters

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- Man-Made Ditch
- Erosional Channel

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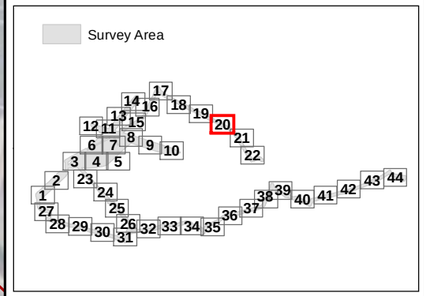

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Attachment A: Preliminary Wetland Delineation Map 21 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
- Riparian (0.71 acre)

Non-Jurisdictional Waters

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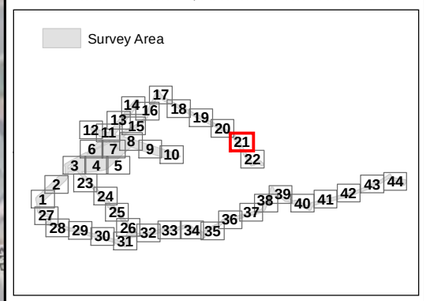

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Attachment A: Preliminary Wetland Delineation Map 22 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

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Erosional Channel

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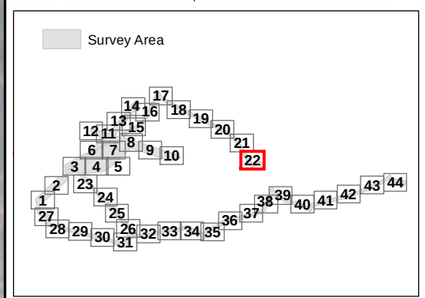

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Attachment A: Preliminary Wetland Delineation Map 23 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
- Riparian (0.71 acre)

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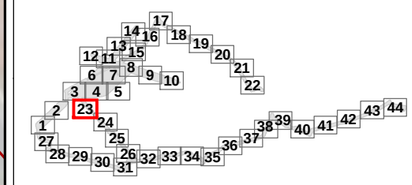
Survey Area



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Attachment A: Preliminary Wetland Delineation Map 24 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

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Man-Made Ditch
Erosional Channel

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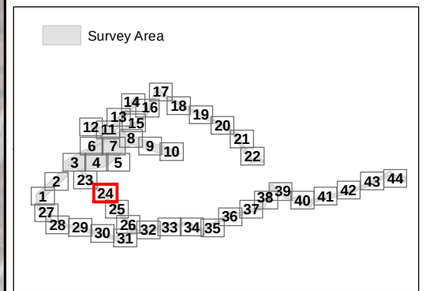

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Attachment A: Preliminary Wetland Delineation Map 25 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
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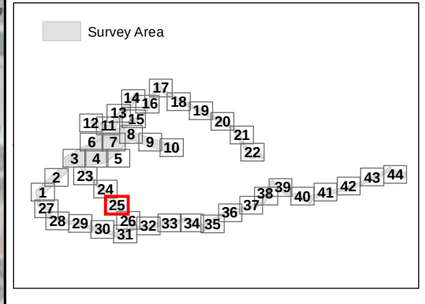

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Attachment A: Preliminary Wetland Delineation Map 26 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

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Erosional Channel

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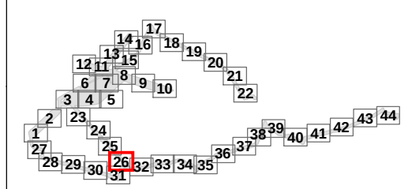
Survey Area



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Attachment A: Preliminary Wetland Delineation Map 27 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

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Man-Made Ditch
Erosional Channel

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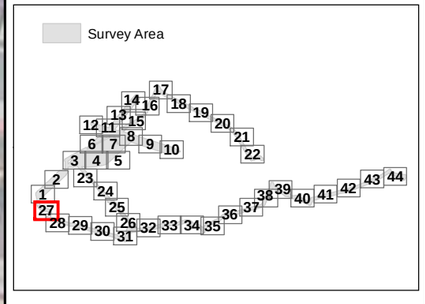

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Attachment A: Preliminary Wetland Delineation Map 28 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
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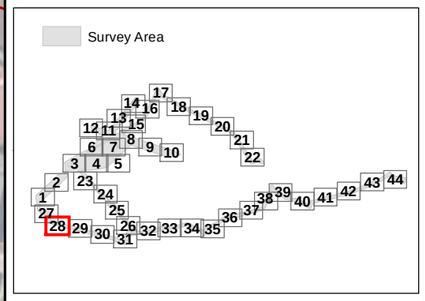

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Attachment A: Preliminary Wetland Delineation Map 29 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

- Top of Bank Width (3.10 acres)
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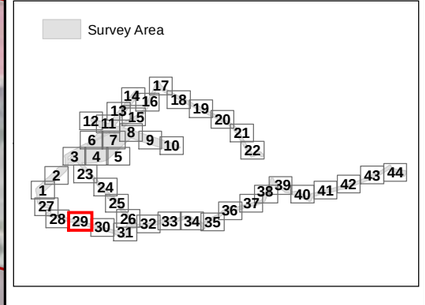

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Attachment A: Preliminary Wetland Delineation Map 30 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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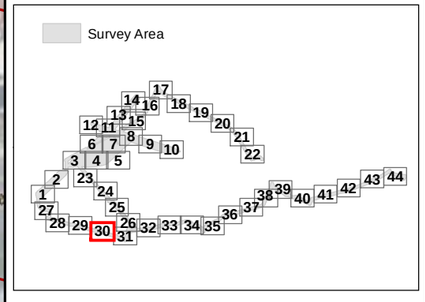

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Attachment A: Preliminary Wetland Delineation Map 31 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

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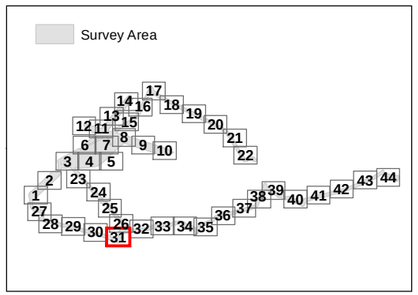

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Attachment A: Preliminary Wetland Delineation Map 32 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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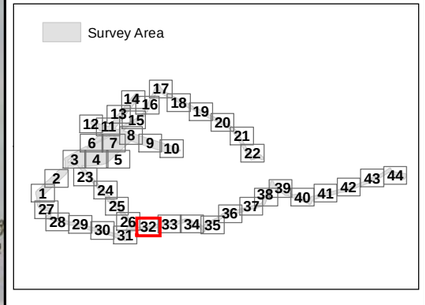

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Attachment A: Preliminary Wetland Delineation Map 33 of 44

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- Culvert
- Sample Point
- Storm Drain
- Flow Direction

Potential Waters of the U.S./State

- Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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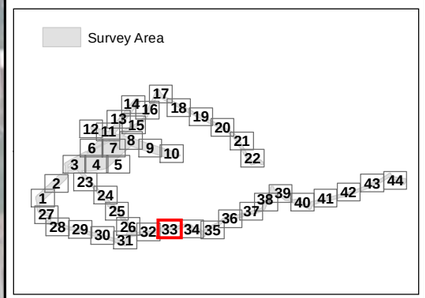

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Attachment A: Preliminary Wetland Delineation Map 34 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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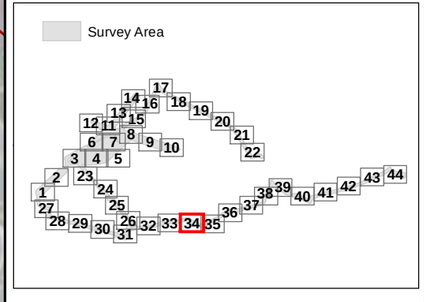

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Attachment A: Preliminary Wetland Delineation Map 35 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

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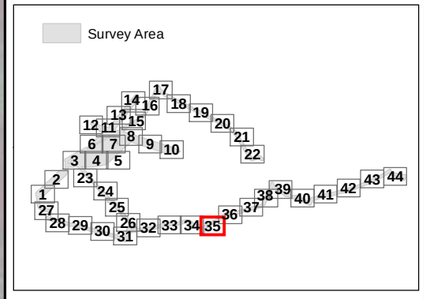

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Attachment A: Preliminary Wetland Delineation Map 36 of 44

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Culvert
Sample Point
Storm Drain
Flow Direction

Potential Waters of the U.S./State

Potential Other Waters of the U.S. (0.64 acre)

CDFW Jurisdiction

Top of Bank Width (3.10 acres)
Riparian (0.71 acre)

Non-Jurisdictional Waters

Man-Induced Wetland (0.04 acre)
Man-Made Ditch
Erosional Channel

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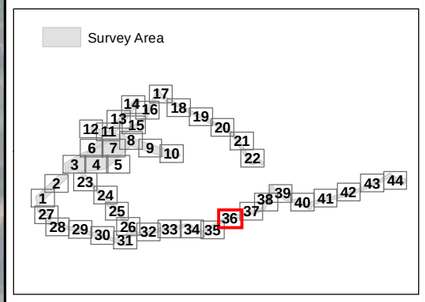

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Attachment A: Preliminary Wetland Delineation Map 37 of 44

Mesa 500 kV Substation Project

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- Culvert
- Sample Point
- Storm Drain
- Flow Direction

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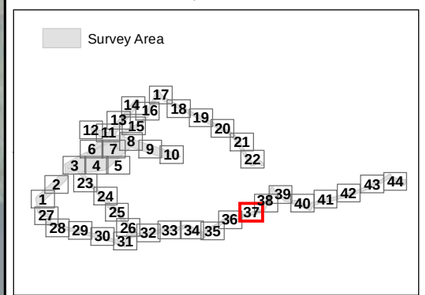

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Attachment A: Preliminary Wetland Delineation Map 38 of 44

Mesa 500 kV Substation Project

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- Sample Point
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- Flow Direction

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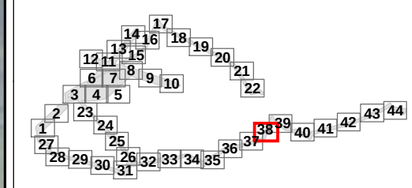

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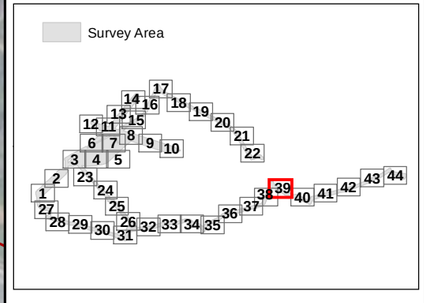

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Attachment A: Preliminary Wetland Delineation Map 40 of 44

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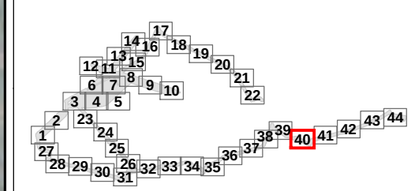

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Attachment A: Preliminary Wetland Delineation Map 41 of 44

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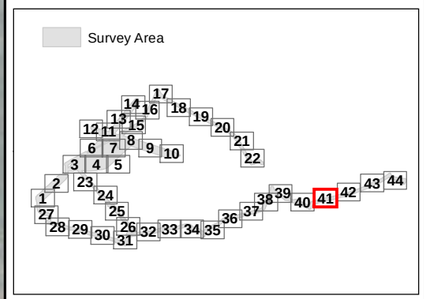

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Attachment A: Preliminary Wetland Delineation Map 42 of 44

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Storm Drain
Flow Direction

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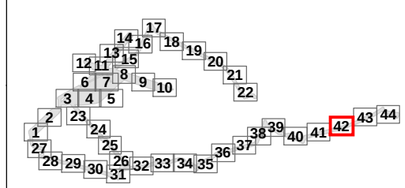

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Attachment A: Preliminary Wetland Delineation Map 43 of 44

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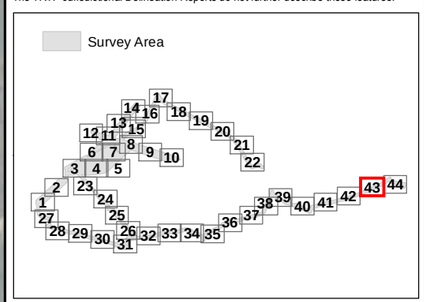

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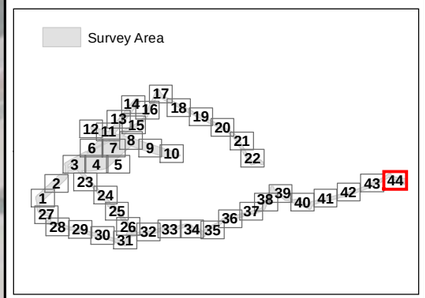

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	Photograph 51: Drainage 7-39-S-11, facing downstream/southwest.

ATTACHMENT D: BIOLOGICAL ASSESSMENT

Biological Assessment

Mesa 500 kilovolt Substation Project

Los Angeles County, California

Prepared for

United States Army Corps of Engineers

Prepared by

INSIGNIA ENVIRONMENTAL

258 High Street
Palo Alto, CA 94301

On behalf of

SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

June 2015

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1.0 EXECUTIVE SUMMARY

1.1 Project Summary

Southern California Edison Company (SCE) proposes to construct the Mesa 500 kilovolt (kV) Substation Project (Project) to provide safe and reliable electrical service and to address reliability concerns resulting from the recent retirement of the San Onofre Nuclear Generation Station and from Once Through Cooling shutdowns expected by December 31, 2020. This Project will allow greater flexibility in the siting of future generation projects to meet local reliability needs in the Western Los Angeles Basin while reducing the total amount of new generation required by providing additional transmission import capability. Construction of the proposed Mesa Substation and demolition of the existing Mesa Substation will occur within the City of Monterey Park. Removal, relocation, modification, and/or construction of transmission, subtransmission, distribution, and telecommunications structures will occur within the cities of Monterey Park, Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County. In addition, conversion of an existing street light source line from overhead to underground will take place within the City of Bell Gardens, and installation of a temporary 220 kV line loop-in at Goodrich Substation will occur within the City of Pasadena. Construction is anticipated to begin in June 2016 and end by December 31, 2020.

1.2 Purpose of the Biological Assessment

This biological assessment (BA) has been prepared in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA) (16 United States [U.S.] Code 1536[c]) to address the potential effects of the Project on federally listed threatened and endangered species, designated critical habitat, and proposed/candidate species for ESA protection. The U.S. Army Corps of Engineers (USACE) is the lead federal agency for the ESA Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS). Specifically, this BA addresses the potential effects associated with the construction of the Project on the coastal California Gnatcatcher (*Polioptila californica californica*), least Bell's Vireo (*Vireo bellii pusillus*), and Nevin's barberry (*Berberis nevinii*). The analysis has determined that the Project "may affect and is likely to adversely affect" the coastal California Gnatcatcher and will have no effect on least Bell's Vireo and Nevin's barberry (Table 1: *Determination of Effects*).

Least Bell's Vireo, a federally listed endangered species, is known to nest within riparian vegetation along the telecommunications route for the Project. Habitat exists near and adjacent to the telecommunications route in riparian areas associated with the Rio Hondo waterway. However, Project activity at this location will be limited to the existing roads, will not result in vegetation removal in riparian habitat, and will take place outside of the nesting season, which occurs from approximately March 1 through August 31. Therefore, work along the telecommunications route will have no effect on least Bell's Vireo.

On the Mesa Substation site, south of the existing Mesa Substation, ephemeral drainages support sparse mulefat scrub, but are primarily dominated by non-native and ornamental plant species. The plant communities associated with the ephemeral drainages south of Mesa

Substation are either non-native, non-habitat, or are characterized by riparian scrub that is too small, patchy, and/or marginal habitat for least Bell's Vireo. Further, least Bell's Vireo was not identified on the Mesa Substation site during four years of monitoring for the Tehachapi Renewable Transmission Project (TRTP) which is adjacent to and overlaps with portions of the Project. For these reasons, it has been determined that the Project will have "no effect" on least Bell's Vireo and this species is not discussed further.

Table 1: Determination of Effects

Species	Federal Listing Status	Determination	Details
Coastal California Gnatcatcher (*Polioptila californica californica*)	Threatened	May Affect, Likely to Adversely Affect	Direct impacts are expected to be minimized through the implementation of minimization and monitoring measures detailed in Section 3.2 Minimization and Monitoring Measures of this BA
Least Bell's Vireo (*Vireo bellii pusillus*)	Endangered	No Effect	No impacts
Nevin's barberry (*Berberis nevinii*)	Endangered	No Effect	No impacts

Nevin's barberry, a federally listed endangered species, has been identified at the Whittier Narrows Natural Area within the Project area. One individual shrub of this species appears to have been planted as part of a demonstration garden. Work at this location will be limited to stringing overhead lines, which will not require any ground disturbance in the vicinity of this species' location. Work within the area of this shrub will be limited to walking new overhead cables between poles and climbing the poles to install the cables. This individual shrub will be flagged and avoided during work within this area. For these reasons, it has been determined that the Project will have "no effect" on Nevin's barberry and this species is not discussed further.

2.0 PROJECT DESCRIPTION

2.1 Regional Setting

The Project is located within the northwestern portion of the Peninsular Ranges geomorphic province in the foothills of the San Gabriel Mountains, near where the Peninsular and Transverse ranges meet. The Project spans the San Gabriel Valley, and the terrain surrounding the Project ranges from level ground to rolling foothills. The Project is situated at elevations ranging from 130 feet to 750 feet above mean sea level. The Project is located in the California Floristic Province, as described in *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). In addition, the Project is situated within the Los Angeles River watershed.

2.2 Project Area

The Project overlaps with portions of Segments 7, 8, 9, and 11 of the TRTP. SCE is currently constructing the TRTP to provide the electrical facilities necessary to interconnect new wind turbine-based electrical generation from the Tehachapi Wind Resource Area. The TRTP consists of a series of new and upgraded high-voltage transmission lines and substation facilities that will deliver electricity from renewable wind energy generators in eastern Kern County, California to the Los Angeles Basin. The TRTP consists of eight segments—Segment 4 through Segment 11. The Mesa Substation site includes the southern portion of Segment 11, the southwestern portion of Segment 7, and the northwestern portion of Segment 8. In addition, Segment 9 includes an upgrade to Mesa Substation. The former TRTP laydown area was located within the Mesa Substation site. Additional work areas within the Mesa Substation site, including the southwestern portion of the site, do not overlap with TRTP.

The Project is located within Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated portions of Los Angeles County (Figure 1: *Overview and Action Area*). The construction of Mesa Substation will occur in the City of Monterey Park. The City of Monterey Park is generally urban and developed with a few areas of open space or parkland. Land uses in the area surrounding the Project are industrial and commercial to the north, State Route (SR-) 60 to the south, the SCE Montebello Service Center to the east, the Resurrection Cemetery to the northeast, and low-density residential and commercial zones to the west.

A large retail shopping center—Monterey Park Market Place—is currently in the entitlement phase and is proposed to be located directly east of the Project site on the Operating Industries, Inc. (OII) Landfill. A portion of the SCE right-of-way (ROW) south of the existing Mesa Substation has a restricted use covenant with the California Department of Toxic Substances Control, enforced by the Environmental Protection Agency (EPA). As such, no grading or vegetation removal will occur for this Project within this restricted use area.

The proposed telecommunications route is located in the City of Montebello; however, portions of the telecommunications route are within the cities of Monterey Park, Rosemead, South El Monte, and unincorporated areas of Los Angeles County, including the community of South San Gabriel. The transmission, subtransmission, distribution, and telecommunications work will occur within existing SCE ROWs on existing overhead lines and conduits. The following three telecommunications routes will travel along existing lines and conduits:

- The first route will extend east of Mesa Substation along Potrero Grande Drive and then south along San Gabriel Boulevard before ending at an existing lattice steel tower (LST) adjacent to the Rio Hondo waterway.

- The second route—a cutoff route—will extend south of Mesa Substation along the edge of an existing landfill, through a residential area, and then south along North Montebello Boulevard where it will connect to the third route.

- The third route will extend west of Mesa Substation along Markland Drive and a wide ROW before turning south along Wilcox Avenue. It will then travel in an eastward direction along Lincoln Avenue, North Montebello Boulevard, and Avenida de la Merced, and finally southeast along San Gabriel Boulevard/Durfee Avenue where it will cross the Rio Hondo waterway and terminate at an LST near the channel that connects the San Gabriel River to the Rio Hondo waterway.

The area surrounding the telecommunications route in the cities of Monterey Park, Montebello, and Rosemead and in the community of South San Gabriel predominately consists of industrial, commercial, and residential uses, which includes the Don Bosco Technical Institute. An approximately 1.1-mile portion of the telecommunications route will be located within the Whittier Narrows Natural Area, which is located within unincorporated areas of Los Angeles County and an approximately 160-foot segment within the City of South El Monte. Whittier Narrows Natural Area includes property owned by the USACE and managed by the Los Angeles County Department of Parks and Recreation. The existing land in the vicinity of Whittier Narrows is characterized by native habitat and crosses the Whittier Narrows Recreation Area, the Whittier Narrows Water Reclamation Plant, the USACE Los Angeles District offices, commercial and residential uses, an agricultural field used for strawberries, and a trucking storage yard.

A staging area will be located within an existing ROW east of Mesa Substation, and will be bordered by a third-party landscape nursery, a cemetery, and residential uses to the northeast, and by a vacant former landfill and SR-60 to the south. A staging area will be located to the southwest of Mesa Substation within an existing ROW, and will be bordered by SR-60 to the north, Schurr High School to the south and east, a third-party landscape nursery to the southwest, and a shopping center to the west.

Within the City of Commerce, an existing transmission tower will be replaced within an SCE ROW approximately 2.1 miles north of Laguna Bell Substation and approximately 2.4 miles southwest of Mesa Substation. Within the City of Bell Gardens, a source line connecting three existing streetlights will be converted from an overhead to underground configuration approximately 0.2 mile south of Laguna Bell Substation. The installation of a temporary 220 kV line loop-in at Goodrich Substation will be located in the City of Pasadena. The proposed work within the cities of Commerce, Bell Gardens, and Pasadena consist of improvements within existing developed or ruderal lands and will not impact biological resources; therefore, Project elements within the cities of Commerce, Bell Gardens, and Pasadena are not further discussed in this BA.

2.3 Project Study Area

The Project study area to assess the biological resources for the Project is defined as the locations where work may be performed, as described in Section 2.2 Project Area, plus a 100-foot buffer. The study area represents the potential disturbance area associated with work at the substation and the associated transmission, subtransmission, distribution, and

telecommunications lines. The study area for the Project coincides with areas investigated in the course of preparing the Proponent's Environmental Assessment for the Project (SCE 2015).

2.4 Project Action Area

For the purpose of this BA, the Project action area is defined as all areas that may be affected, directly or indirectly, by the Project activities for which SCE is requesting take coverage. The action area includes the Project area (and the associated potential direct impacts to federally listed species), plus a 100-foot buffer (and the associated potential indirect impacts to those species) (Figure 1: *Overview and Action Area*). The "action area" is legally described in the implementing regulations of Section 7(a)(2) of the ESA as all areas affected directly or indirectly by the federal action and not merely the immediate area affected by the Project (50 Code of Federal Regulations § 402.02). The action area is the area of potential direct or indirect effects of the proposed action and any interrelated or interdependent human activities, and the direct and indirect effects of these activities include associated physical, chemical, and/or biological effects of considerable likelihood (USFWS and National Oceanic and Atmospheric Administration National Marine Fisheries Service [NOAA Fisheries] 1998).

Based on a review of the USFWS Conservation Plans and Agreements Database (USFWS 2013) and the California Department of Fish and Wildlife (CDFW) Natural Community Conservation Planning (NCCP) program (CDFW 2013), it was determined that the Project is not located in areas with Habitat Conservation Plan or NCCP coverage.

3.0 PROPOSED ACTION

Land disturbance will include all areas affected by construction of the Project. It is estimated that the total permanent land disturbance for the Project will be approximately 76.7 acres, and approximately 141.4 acres will be temporarily disturbed (Table 2: *Project Estimated Land Disturbance*). Approximately 20 acres of on-site vegetation will be removed during the clearing, grubbing, and grading for the construction of the proposed Mesa Substation, including trees along the frontage and within the fence line of the existing Mesa Substation site.

SCE anticipates that construction of the Project will take approximately 56 months. Construction of the Project is anticipated to begin in June 2016, and the substation will be completed and energized in December 2020. Construction will commence following approval from the California Public Utilities Commission (CPUC), final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

Table 2: Project Estimated Land Disturbance

Project Feature	Approximate Area Disturbed During Construction (acres)	Approximate Area Temporarily Disturbed (acres)	Approximate Area Permanently Disturbed (acres)
Mesa Substation	82.9	13.5	69.4
Transmission Project Features	17.7	17.1	0.6
Subtransmission Project Features	13.9	13.9	<0.1
Telecommunications Project Features	0.8	0.8	<0.1
Distribution	0.5	0.5	<0.1
Staging Areas	11.3	11.3	0.0
Access Roads and/or Spur Roads	26.2	19.6	6.6
General Disturbance	64.7	64.7	0.0
Total Estimated for Project	**218.0**	**141.4**	**76.7**

Notes:

1. Disturbance calculations presented for the transmission, subtransmission, distribution, and telecommunications structures only account for areas outside of the approximately 69.4-acre Mesa Substation site. All disturbance within the Mesa Substation site has been attributed to this Project component. Due to the proximity of the Project components, overlapping portions of the work areas have been removed in the Approximate Area Disturbed During Construction column.
2. This table includes the removal of existing conductors, teardown of existing structures, and the removal of foundations to at least 2 feet below ground surface.
3. This table includes structure assembly and erection, and conductor and overhead optical ground wire installation. Permanently disturbed areas will measure approximately 0.25 acre for LSTs, and 0.06 acre for tubular steel poles (TSPs).
4. This table is based on the approximate length of roads in miles, with a drivable road width of approximately 14 feet and an approximately 2-foot berm on each side.
5. This table includes improving existing roads to current standards. It also assumes an existing improved road width of approximately 10 feet and an additional width of 4 feet, plus an approximately 2-foot berm on each side of the road.
6. The disturbed acreage calculations are estimates based on SCE's preferred area of use for the described Project feature, the width of the existing ROW, or the width of the proposed ROW.
7. Staging area acres and locations subject to change based on availability.

3.1 Project Components and Construction Description

Project Components

The main activity associated with the Project involves the construction of an approximately 69.4-acre, 500/220/66/16 kV substation (i.e., Mesa Substation) in place of the existing, approximately 21.6-acre, 220/66/16 kV Mesa Substation on approximately 86.2 acres of SCE fee-owned property. Construction of the proposed Mesa Substation will occur in phases, and a new 220/66/16 kV switchrack will be built next to the existing switchrack (to ensure that power is not lost from the existing substation), and the existing 220/66/16 kV structures will be demolished to accommodate the 500/220/66/16 kV switchracks.

SCE currently operates various 220 kV transmission lines, 66 kV subtransmission lines, 16 kV distribution lines, and telecommunications lines that connect to the existing Mesa Substation. As part of the Project, SCE will replace existing structures and lines, as necessary, to allow these existing circuits to connect to the proposed Mesa Substation configuration. In addition, the Project involves the loop-in of one existing 500 kV circuit and two existing 220 kV circuits, which currently pass by the existing Mesa Substation property on various 500 kV transmission lines and 220 kV transmission lines. The Project includes the following elements:

- Mesa Substation: Construct the 500/220/66/16 kV Mesa Substation. This substation will be constructed on the existing 220/66/16 kV Mesa Substation site. Mesa Substation will be a staffed, automated substation operating at 3,360 megavolt-ampere (MVA) at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV, with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV at ultimate build-out.

- Transmission lines immediately adjacent to Mesa Substation: Remove, relocate, and construct new transmission, subtransmission, and distribution structures within existing SCE transmission and substation fee-owned properties, ROWs, and franchise areas to accommodate the new Mesa Substation configuration.

- Telecommunications routes: Install new telecommunications lines and remove old telecommunications lines on existing subtransmission and distribution structures.

- Staging areas: Temporary areas in support of construction activities.

- Access roads: Potential improvements to existing access roads.

Mesa Substation

The areas directly adjacent to Mesa Substation—which include areas included in the description of the transmission lines—will be graded, and vegetation will be removed prior to construction.

Brief Description of Major Elements

Mesa Substation will be a 500/220/66/16 kV staffed, automated substation, operating at 3,360 MVA at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV. The substation capacity will have the potential to expand to 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV, as necessary. The proposed Mesa Substation will be constructed on approximately 69.4 acres within approximately 86.2 acres of SCE fee-owned property. The existing Mesa Substation occupies approximately 21.6 acres within the same approximately 69.4-acre area where the proposed Mesa Substation will be constructed. The dimensions of the substation parcel and the placement and orientation of the major components that will be included in the construction of Mesa Substation have been included in this BA (Figure 2: *Proposed Substation Layout*).

The monitoring equipment for the operation of Mesa Substation and portions of the SCE system will be located in a permanent Operations Building structure that will typically be a pre-engineered metal building shell. SCE anticipates the Operations Building will have prefinished metal panel exterior walls in earth-tone colors; green-tinted, glazed windows; and metal doors painted to match the metal siding of the adjacent exterior building. An exterior patio will be constructed at the northeast corner with translucent roof panels and perforated metal panel windscreens. The Operations Building will measure approximately 100 feet wide, 150 feet long, and 25 feet high. Several ancillary facilities will also be built, including two Mechanical and Electric Equipment Rooms and an approximately 35-foot-tall Test and Maintenance Building with restrooms.

In the event of a fire on the substation site, water provided by firefighting efforts will flow toward the detention pond in the southwest corner of the substation site (Figure 2: *Proposed Substation Layout*). The detention pond will be approximately one acre with a capacity of approximately 455,000 gallons, and will be constructed from mulch, gravel, soil, and geotextile membrane layers. In the event of a fire within the 500/220 kV transformer bank area, water provided by firefighting efforts will flow into a catch basin system installed around each transformer, which connects to a drainage pipe that flows into a concrete-lined detention basin measuring approximately 100 feet long, 50 feet wide, and 20 feet deep.

Primary access to the proposed Mesa Substation will be provided from Potrero Grande Drive via a new asphalt and/or concrete access driveway. Secondary access will be provided via a new access driveway off of East Markland Drive. The entrance at Potrero Grande Drive will be approximately 150 feet wide, and the entrance at East Markland Drive will be approximately 25 feet wide. Gates will be installed at both driveway entrances (Figure 2: *Proposed Substation Layout*).

Substation Grading and Drainage

Prior to construction, the Mesa Substation site will be cleared and graded to prepare the site for construction. Approximately 83.3 acres of the site will be graded. Approximately 20 acres of on-site vegetation will be removed during the clearing, grubbing, and grading for the

construction of the proposed Mesa Substation, including trees along the frontage and within the fence line of the existing Mesa Substation site. Mowers, excavators, front-end loaders, and/or D-9 bulldozers will be utilized to conduct the clearing and vegetation removal activities. The existing Mesa Substation property will be over-excavated, the on-site soil will be re-compacted to prepare the area for site development, and grading will ensue. Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. Construction of Mesa Substation will require 580,000 cubic yards (CY) of fill and 595,000 CY of cut.

SCE will prepare and implement a drainage plan to comply with the requirements of the jurisdictional agency, as well as to minimize surface water and erosion impacts. Existing drainage structures, facilities, and devices may need to be modified, removed, replaced, and/or relocated to meet post-development hydrology conditions. The substation pad area will be finish-graded from a high point elevation at the east end of the pad to the perimeter at a slope of approximately 1 percent. Drainage inlets and pipes will be constructed to collect and divert storm water runoff. The surrounding area will be re-graded, and the low points will be filled to provide positive surface drainage to the southwest. Currently, the property generally drains by sheet flow to ephemeral drainages at the southwest corner of the site. These ephemeral drainages connect to storm drains that connect to the Rio Hondo Channel, which flows into the Los Angeles River. A detention pond will be constructed in the southwest corner of the new substation site, and other site and source control best management practices (BMPs) will be included in the design to help mitigate surface runoff. Drainage systems will be constructed along the perimeter of the substation to direct interior surface runoff to the detention pond.

Transmission Lines Immediately Adjacent to Mesa Substation

Construction along the transmission lines will occur immediately adjacent to Mesa substation, primarily within areas characterized by ruderal vegetation (i.e., non-native grasses and mustard); however, coastal California Gnatcatcher has been observed near these Project elements south of the existing Mesa Substation. Vegetation around the transmission lines is expected to be removed prior to the work described in the following subsections.

500/220 kV Transmission Lines

The Project will remove an existing overhead portion of the Mira Loma-Vincent 500 kV Transmission Line and up to four LSTs immediately adjacent to Mesa Substation (Figure 3: *Project Overview (Transmission)*). Then the existing overhead, single-circuit Mira Loma-Vincent 500 kV Transmission Line will be looped into the new 500 kV switchrack, and the existing overhead transmission line alignment to Mesa Substation will be realigned with up to three new LSTs.

The Project will include removal of portions of the existing overhead 220 kV transmission lines, including up to 35 existing single- and double-circuit LSTs and approximately four TSPs immediately adjacent to Mesa Substation (Figure 2: *Proposed Substation Layout*). Following, the existing overhead Goodrich-Laguna Bell and Laguna Bell-Rio Hondo 220 kV transmission

lines will be looped into the new 220 kV switchrack by constructing new overhead getaways—supported by new double-circuit LST—from the existing transmission line alignment to Mesa Substation. In addition, eight existing overhead 220 kV transmission lines will be relocated to the new 220 kV switchrack by constructing new overhead getaways, which will be supported by approximately 25 new double-circuit LSTs and approximately six new single- or double-circuit TSPs. The one existing 220 kV LST will be replaced with a new 220 kV LST to increase the capacity rating of the existing Goodrich-Laguna Bell and Mesa-Redondo 220 kV transmission lines.

66 kV Subtransmission Lines

The Project will relocate 16 overhead 66 kV subtransmission circuits into the new 66 kV switchrack with new underground getaways (Figure 4: *Project Overview (Subtransmission)*). Relocating the existing 66 kV lines to Mesa Substation will involve the following:

- removal of existing overhead structures,
- installation of new underground line segments in new duct banks and vault structures, and
- the installation of new overhead line segments supported by single- and double-circuit TSPs and lightweight steel poles.

16 kV Distribution Lines

The Project will relocate five existing underground 16 kV distribution lines into the new 16 kV switchracks with new underground getaways (Figure 5: *Project Overview (Distribution)*). Within the proposed Mesa Substation, five initial 16 kV distribution circuits will be placed in an underground conduit system. At ultimate build-out, the proposed substation could accommodate up to twelve 16 kV distribution circuits. Additional electrical distribution circuits will be constructed from the proposed substation to areas of demand on an as-needed basis.

Access Roads and/or Spur Roads

The existing access roads occur immediately south of Mesa Substation, primarily within areas characterized by ruderal vegetation (i.e., non-native grasses and mustard); however, coastal California Gnatcatcher has been observed near this Project element. These roads are expected to be removed during initial site grading and replaced or modified at the end of construction.

Where required, a network of existing access roads could be improved and new roads will be constructed to current SCE road specifications to support the construction of the Project. Approximately 5.6 miles of existing dirt access roads on SCE property and existing ROWs will be used to access the Project work areas. Typical construction activities associated with rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities to provide a surface that is capable of supporting heavy construction equipment. Existing

unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Helicopter Access

Helicopters will be used to support construction activities. Specifically, SCE currently anticipates helicopters will be utilized during conductor-stringing activities for the 500 kV and 220 kV transmission lines. SCE will consider the Institute of Electrical and Electronics Engineers Standards 524-2003, Guide to the Installation of Overhead Transmission Line Conductors, for the construction of the Project. Helicopters will be based at an existing aviation facility and will fly to the Project sites from that location. For the Project, helicopters may use the potential staging yard locations as needed and will most likely be based out of the El Monte and Chino airports, where refueling will occur.

Helicopter operations and support areas typically include helicopter staging and material yards, storage and maintenance sites, and ground locations in close proximity to conductor pulling, tensioning, and splice sites, and/or within previously disturbed areas near construction sites. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during off-days, helicopters and their associated support vehicles and equipment will be based at a local airport for safety and security concerns.

Telecommunications Route

There is no vegetation clearing associated with the telecommunications route. A majority of the telecommunications route will occur along roadways and/or sidewalks on existing poles; however, there is native vegetation where the telecommunications route crosses the Montebello Hills and Whittier Narrows Natural Area. Portions of these areas are also classified as critical habitat for coastal California Gnatcatcher (Figure 6: *Coastal California Gnatcatcher Habitat and Designated Critical Habitat*). Generally, work within coastal California Gnatcatcher critical habitat consists of a worker walking between poles with a rope that will be used to pull the cable. Pull/tension locations along the telecommunications route are located in developed areas, outside of habitat for coastal California Gnatcatcher. In the event that a pole cannot be reached by a truck from an existing paved road, the worker will climb the pole to attach the new cable to the pole. As such, there will be no impacts to vegetation in coastal California Gnatcatcher critical habitat. Further, work will occur during the non-breeding season in order to avoid impacts to least Bell's Vireo. The following work description applies only to activities within native vegetation.

Telecommunications

Telecommunications infrastructure, which includes direct current power, LightWave, data, and channel equipment, will be added to existing overhead and underground structures. New impacts will occur at the end of the route where the telecommunications infrastructure is expected to be connected and spliced to the existing telecommunications route on LSTs. The new impacts are not within coastal California Gnatcatcher habitat, but are located within

disturbed areas around the LSTs where cable will be placed underground; however, the cable may connect overhead, thereby eliminating any ground disturbance. The telecommunications line will be installed on existing wood poles, lightweight steel poles, and LSTs. These structures will support 0.5-inch-diameter fiber optic cable. The lowest cable will be 20 to 30 feet above ground. The average span length between overhead structures will be 150 to 200 feet.

Staging Areas

Staging areas occur in ROWs adjacent to Mesa Substation and within areas characterized by ruderal vegetation that are not habitat for coastal California Gnatcatcher. Vegetation around the staging areas is expected to be removed prior to the start of construction.

Staging Areas Description

Construction of the Project will require the establishment of temporary staging yards (Figure 7: *Conductor Installation and Removal Work Areas*). Two types of staging yards will be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards will be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yards may have construction trailers for supervisory and clerical personnel to serve as office and meeting locations. Staging yards may be lit for security purposes. Normal maintenance and refueling of construction equipment will also be conducted at these yards. SCE anticipates using one or more of the possible locations. Typically, the preferred acreage for each yard will be 5 to 25 acres in size, depending on land availability and intended use. Preparation of the staging yards will include temporary perimeter fencing and—depending on existing ground conditions at the site—clearing, grubbing, and/or minor grading may be required to provide a plane and dense surface for the application of gravel or crushed rock in some locations. Land disturbed at the staging yards will either be returned to pre-construction, weedy conditions or left without revegetating.

Materials commonly stored at substation construction staging yards will include, but will not be limited to:

- electrical equipment (e.g., circuit breakers, disconnect switches, lightning arresters, transformers, and vacuum switches)
- steel beams
- rebar
- foundation cages
- conduit
- insulators
- conductor and cable reels
- pull boxes
- line hardware

Materials and equipment commonly stored at the transmission, subtransmission, distribution, and/or telecommunications construction staging yards will include, but will 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 (e.g., fuel and filler compound)
- waste materials for salvaging, recycling, or disposal
- BMP materials (e.g., straw wattles, gravel, and silt fences)

3.2 Minimization and Monitoring Measures

The following subsections describe the minimization and monitoring measures proposed by SCE to avoid and minimize the potential adverse effects to biological resources resulting from construction of the Project. The following general measures and measures developed for coastal California Gnatcatcher will be implemented during construction and are intended to avoid or minimize take.

General Measure

General Measure-01: **Pre-construction Surveys**. At least 60 days prior to the initiation of ground-disturbing activities, SCE will designate a field contact representative(s) who will be responsible for overseeing compliance with the measures outlined in the USFWS's biological opinion for the Project.

Mitigation Measures

MM-01: Revegetation Plan. To the extent feasible, SCE will minimize impacts and permanent loss to riparian habitat, native trees, and other vegetation that is regulated by federal, state, or local agencies, and/or that provides suitable habitat for special-status species. Impacts will be minimized at construction sites by flagging native vegetation to be avoided. If SCE is unable to avoid impacts to protected vegetation, a Habitat Compensation and Revegetation Plan (HCRP) will be prepared in coordination with the appropriate agencies for areas of native habitat that are temporarily and/or permanently impacted during construction. The HCRP will describe, at a minimum, which vegetation restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Project's Storm Water Pollution

Prevention Plan) will be implemented in the Project area. The HCRP will also include the species or habitats that could be impacted, the replacement or revegetation ratios (as appropriate), and the revegetation methods and techniques

MM-02: Biological Monitoring. To the extent feasible, biological monitors will monitor construction activities in areas with special-status species, native vegetation, wildlife habitat, or unique resources to ensure that such resources are avoided.

MM-03: Coastal California Gnatcatcher Protection. A USFWS-approved biologist will conduct pre-construction surveys for coastal California Gnatcatcher no more than seven days prior to the start of ground-disturbing activities, if this work will commence between March 1 and August 30. Surveys for coastal California Gnatcatcher will be conducted in suitable nesting habitat within 100 feet of the Project area. Construction activities in occupied coastal California Gnatcatcher habitat will be monitored by a full-time USFWS-approved avian biologist. If a breeding territory or a nest with eggs or chicks are found, an exclusion buffer will be established around the nest. A standard buffer will be established for Project activities until an USFWS-approved avian biologist can determine a reduced buffer distance, based on proposed construction activities, or whether the young have left the nest. Temporary and permanent impacts to coastal California Gnatcatcher and their habitat will be mitigated as required by the USFWS.

MM-04: Nesting Birds. SCE will conduct pre-construction clearance surveys no more than seven days prior to construction to determine the location of nesting birds and territories during the nesting bird season. An avian biologist will establish a buffer area around active nests and will monitor the effects of construction activities to prevent failure of the active nest. The buffer will be established based on construction activities, potential noise disturbance levels, and the behavior of the species. Construction activities that have the potential to affect active nests will be monitored until the adjacent construction activities are complete or until the nest is no longer active.

Coastal California Gnatcatcher Mitigation Measures

MM-CAGN-01: Pre-construction Sweeps. In addition to conducting protocol-level surveys for coastal California Gnatcatcher (in accordance with MM-03) and nesting bird surveys (in accordance with MM-04), SCE will conduct pre-construction clearance surveys for coastal California Gnatcatcher within seven days prior to initiation of ground-disturbing activities during the breeding season (February 1 and August 30). The surveys are intended to detect coastal California Gnatcatcher that may take residence after the protocol-level surveys have been completed and/or where habitat is not previously determined to be occupied by coastal California Gnatcatcher. Surveys will be conducted by an Avian Biologist approved by SCE and USFWS. If nesting is behavior is observed, a California Gnatcatcher Specialist will monitor the species and install a buffer around any active nests, as needed.

MM-CAGN-02: Vegetation Removal. SCE will monitor vegetation clearing in coastal California Gnatcatcher habitat. Monitoring will be conducted by a biological monitor, which is a defined

as a wildlife biologist who has been approved by SCE to conduct surveys and monitoring for wildlife species. Vegetation removal will occur only after the California Gnatcatcher Specialist has confirmed that there are no active nests, the fledglings are no longer being fed by their parents, and/or the species has moved out of the work areas.

MM-CAGN-03: Coastal California Gnatcatcher Protection (Construction). A biological monitor will be present to ensure compliance with nest buffers during construction. Construction can occur within the buffers after the California Gnatcatcher Specialist confirms there are no active nests and/or the fledglings are no longer being fed by their parents. Construction monitoring for coastal California Gnatcatcher may be suspended if the California Gnatcatcher Specialist has determined that the species and their territories no longer overlap the Project.

MM-CAGN-04: Compensatory Mitigation. Permanent and temporary impacts to occupied coastal California Gnatcatcher breeding habitat will be mitigated at an off-site location, as agreed upon by the USFWS.

Additional Protection for Special-Status Wildlife Species

In addition to the APMs described previously, SCE will implement the following additional practices to minimize impacts to special-status species:

- **Worker Environmental Awareness Program Training:** Prior to construction, a qualified biologist or other qualified resource specialist will develop an environmental training for all Project personnel. The training will cover all pertinent Project APMs, permit conditions, and any other required environmental compliance measures. In addition, the environmental training will familiarize all Project personnel with special-status species that may occur within the construction areas. All Project personnel will attend the training prior to starting work on the Project. Upon completion of the training, each attendee will sign a form stating that he/she participated in the training and understood the material presented.

3.3 Monitoring and Reporting Plan

To mitigate impacts to species addressed in this BA, SCE will conduct biological monitoring of construction activities in the Project action area, including Mesa Substation; associated transmission, subtransmission, distribution, and telecommunications lines; and any area subject to Project disturbance. In addition to performing the duties detailed in Section 3.2 Minimization and Monitoring Measures, biological monitors will look for wildlife species addressed by this BA that may be located within or immediately adjacent to the construction areas. If coastal California Gnatcatcher is found, the biological monitor will stop work if necessary to prevent imminent harm to the animals and will report the occurrence, at minimum, to the SCE Biologist, Biology Project Manager, and California Gnatcatcher Specialist, who is an USFWS-approved biologist. The SCE Biologist, the Lead Biologist, and California Gnatcatcher Specialist will be responsible for implementing the appropriate minimization and monitoring measures. Monitoring notes and observations will be recorded daily.

During the construction of the Project, an annual report will be prepared, describing monitoring efforts and summarizing observations and actions taken. The SCE Biologist will coordinate with the contracted Biology Project Manager and the California Gnatcatcher Specialist to provide an annual written report to the USFWS detailing completed and ongoing construction-related compliance activities; any non-compliance issues pertaining to the coastal California Gnatcatcher; and any incidental observations of healthy, injured, or dead individuals of this species. SCE will notify the USFWS if any additional species listed under the ESA are observed during construction of the Project. SCE will prepare and provide the annual report by December 31 of each year of construction for the Project. The annual report will document compliance with the minimization and monitoring measures. Specifically, the annual report will describe the activities that were not in compliance with the minimization and monitoring measures and the corrective measures that were implemented to restore compliance.

3.4 Habitat Mitigation and Conservation

Coastal California Gnatcatcher

Coastal California Gnatcatcher at the Project site are nesting south of the existing Mesa Substation, primarily within a restored slope with coastal sage scrub, also referred to as "occupied breeding habitat" (Figure 8: *Coastal California Gnatcatcher Nest Locations*). Areas adjacent to the coastal sage scrub are within the territories for breeding coastal California Gnatcatcher but are being primarily used for foraging; however, because of the limited amount of coastal sage scrub on and adjacent to the Project site, historic breeding has occurred in areas that are considered atypical habitat and will be referred to as "occupied unsuitable habitat."

Although permanent impacts to the coastal sage scrub are minimal, there will be a temporal loss of occupied breeding habitat in coastal sage scrub for an excess of five years, which could affect the viability of the breeding individuals. Furthermore, a majority of the coastal sage scrub on areas adjacent to the Project, which includes the restricted use area and the OII Landfill, is expected to be converted into a shopping center within five years.

SCE will consider both the permanent and temporary impacts to coastal sage scrub as a permanent effect and will mitigate off site at a two-to-one ratio. Occupied breeding habitat that is to be permanently and temporarily impacted will be mitigated off site by purchasing credits of coastal sage scrub at Soquel Canyon, an approved mitigation bank held and managed by Land Veritas, or a comparable option. Once construction is complete, the occupied breeding habitat will be revegetated with native vegetation but not restored to coastal sage scrub, given that the Monterey Park Market Place development is expected to result in the long-term loss of viability of the species on site. The adjacent occupied unsuitable habitat will be revegetated to conditions similar to the current vegetation at a one-to-one ratio upon completion of construction. As stipulated under MM-01, SCE will prepare an HRCP to guide the implementation of revegetation for temporary impacts to occupied unsuitable habitat. Permanent impacts within occupied unsuitable habitat will not be mitigated given that this is not habitat for coastal California Gnatcatcher and, as further described in Section 4.1 Coastal

California Gnatcatcher, surveys from 2011-2015 have indicated that this species has not nested successfully in the atypical habitat where permanent impacts would occur.

Finally, there will be no impacts to coastal California Gnatcatcher habitat within critical habitat. However, if any temporary impacts were to occur unexpectedly to coastal California Gnatcatcher habitat along the telecommunications routes, then the HCRP will include guidelines and specifications to revegetate such habitat.

4.0 SPECIES AND HABITAT DESCRIPTION

4.1 Coastal California Gnatcatcher

Background Information

Coastal California Gnatcatcher is a federally threatened species and a state species of special concern. This species is a non-migratory songbird and is found west of the Peninsular and Transverse Ranges in coastal southern California. This species is primarily found at elevations below 800 feet along the coast and up to 1,600 feet inland. The largest populations of this species occur in San Diego, Orange, and Riverside counties, with smaller populations in Los Angeles County, southwestern San Bernardino County, and southern Ventura County (Atwood and Bontrager 2001). As of 1990, coastal California Gnatcatcher populations in California were estimated at 2,000 or fewer pairs (USFWS 2010). The coastal California Gnatcatcher occurs in the coastal sage scrub communities of southern California, especially in locations dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). Other shrubs in coastal sage scrub vegetation communities occupied by coastal California Gnatcatcher include California bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber*).

The breeding season for coastal California Gnatcatcher extends from approximately February 1 through August 31, with peak nesting activity occurring from mid-March through mid-May. The incubation period takes 14 days and the young fledge at eight to 13 days. The young are dependent on their parents for up to three or four weeks; however, fledglings may continue to associate with their parents for several months (USFWS 1997). Foraging by coastal California Gnatcatcher primarily consists of gleaning sessile prey from foliage while quickly moving through branches of shrubs. Larger prey items are beaten against a branch before being swallowed whole or fed to juveniles (Atwood and Bontrager 2001).

Presence in the Project Action Area

Focused coastal California Gnatcatcher surveys were conducted for the TRTP in 2011 (ICF International [ICF] 2011) within portions of the Project impact area, and then again for the Mesa 500 kV Substation Project in 2015. In addition, the species was monitored during construction of the TRTP. As a result, there are five years of monitoring data for the Project, which includes nesting locations from 2011 through 2015 (Figure 8: *Coastal California*

Gnatcatcher Nest Locations). Protocol-level coastal California Gnatcatcher surveys were conducted by Rocks Biological Consulting (RBC) on April 9 through May 15, 2015. Surveys were conducted in potential coastal California Gnatcatcher habitat identified by RBC.

Based on monitoring for the TRTP, this species was observed foraging and nesting immediately south of Mesa Substation from 2010 through 2014. Although most of the historic nests were within a restored area of coastal sage scrub south of Mesa Substation, several historic nests were within atypical habitat, which included isolated patches (two to four plants) of mulefat (*Baccharis salicifolius*) surrounded by ruderal vegetation (e.g., non-native mustards [*Brassica nigra*, *Hirschfeldia incana*, and *Raphanus sativus*], grasses [*Avena* spp. and *Bromus* spp.]) and ornamental/non-native shrubs and trees (e.g., bougainvillea [*Bougainvillea spectabilis*] and Peruvian pepper-tree [*Schinus molle*]). Coastal California Gnatcatcher also was observed historically foraging in the Montebello Hills and in the Rio Hondo and San Gabriel River corridors.

RBC surveyed the area immediately south of the existing Mesa Substation within areas previously determined by the TRTP to be both occupied suitable habitat (i.e., having breeding pairs in coastal sage scrub with the primary habitat components) and occupied unsuitable habitat (i.e., nesting in native vegetation within ruderal areas). The survey area also included the restricted use area within the SCE ROW, the telecommunications route where it crosses the Montebello Hills (including along the edge of the landfill and Lincoln Avenue), and the Rio Hondo and San Gabriel River corridors (Figure 6: *Coastal California Gnatcatcher Habitat and Designated Critical Habitat*).

A total of six pairs of breeding coastal California Gnatcatcher were observed during RBC's 2015 protocol surveys. Two nesting pairs and their nests were identified adjacent to the existing Mesa Substation in occupied breeding habitat. One of the nests was within ground-disturbing impact areas for the Project; the other nest was located outside the Project's ground-disturbing impact area on the adjacent OII Landfill parcel (Figure 8: *Coastal California Gnatcatcher Nest Locations*). The remaining four breeding pairs were observed along the telecommunications route in the Montebello Hills. Both pairs adjacent to the existing Mesa Substation fledged three offspring during the survey period. In the Montebello Hills area north of Lincoln Avenue, four pairs of coastal California Gnatcatcher exhibited nesting behavior but, due to access restrictions, the precise location of nests was not confirmed. Of those, three were observed with fledglings. No individuals exhibiting nesting activity were observed in the Rio Hondo or San Gabriel River corridors (Attachment A: *Coastal California Gnatcatcher Survey Report*).

Designated Critical Habitat

Critical habitat for coastal California Gnatcatcher occurs within the Project area along the telecommunications route, in the Montebello Hills, and in the Rio Hondo and San Gabriel River corridors (Figure 6: *Coastal California Gnatcatcher Habitat and Designated Critical Habitat*). Approximately 3.80 acres of the Project area are designated as coastal California Gnatcatcher critical habitat. As discussed in Section 3.1 Project Components and Construction Description, construction work along the telecommunications route consists of workers manually stringing

cable, which will occur outside of the nesting season and adjacent to existing paved roads. Thus, this work will not result in ground-disturbing activities.

5.0 BASELINE ENVIRONMENTAL CONDITIONS

5.1 General Site Conditions

The Project consists of urbanized development and natural areas, including several nurseries located within SCE ROWs. The Project area is located within the Los Angeles River Hydrological Unit. Elevation ranges from 130 feet to 750 feet above mean sea level, with the lower elevations in the southwest portion of the Project, and the higher elevations at the northeast portion. The climate is subtropical and Mediterranean. The nearest climatological station (in the City of Montebello) recorded an average annual rainfall of 15.3 inches between 1981 and 2010. Fourteen vegetation communities occur in the Project area (Figure 9: *Vegetation Communities*); however, coastal California Gnatcatcher has been observed in only five of these plant communities. Given that no impacts to vegetation will occur along the telecommunications route, it will not be discussed further in this section. The following vegetation communities are located within permanent and temporary impacts adjacent to the existing substation where the presence of coastal California Gnatcatcher has been documented:

- coastal sage scrub
- mulefat scrub
- ruderal (atypical habitat)
- ephemeral drainages

Coastal California Gnatcatcher

Coastal sage scrub is the typical habitat for coastal California Gnatcatcher and consists of low, mostly soft-woody shrubs with a sparse herbaceous layer. Stands may be dominated by California sagebrush or by California buckwheat. Coastal California Gnatcatcher is also known to occupy other vegetation communities. The Primary Constituent Elements (PCEs) for critical habitat, pursuant to the Final Rule (USFWS 2007), are defined as follows:

- Dynamic and successional sage scrub habitats (PCE 1): Venturan coastal sage scrub, Diegan coastal sage scrub, Riversidean sage scrub, maritime succulent scrub, Riversidean alluvial fan scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal, and foraging.

- Non-sage scrub habitats (e.g., chaparral, grassland, and riparian areas) in proximity to sage scrub habitats, as described for PCE 1, which provide space for dispersal, foraging, and nesting.

Coastal sage scrub occurs south of the existing Mesa Substation, along the southern boundary of the Project area and within a restricted use area, and extends off-site and further to the south along a restored cut and fill slope. The restored slope is dominated by California sagebrush and California buckwheat. In addition, ephemeral drainages in this area support scattered patches of low-quality mulefat scrub, which are intermixed with stands of castor bean (*Ricinis communis*), Peruvian pepper-tree, and an assemblage of other non-native and ornamental species.

The majority of the vegetation south of the Mesa Substation site is ruderal and highly disturbed, due to regular vegetation removal associated with substation and transmission corridor activities. In addition, the southern portion of the site was formerly occupied by a nursery, and supports an assembly of naturalized ornamental species. Much of the ground cover consists of mustards, Russian thistle (*Salsola tragus*), and non-native grasses. A few native and non-native shrubs are scattered in the mustard areas, but the majority of shrubs—where present—are within the ephemeral drainages.

As discussed in Section 4.1 Coastal California Gnatcatcher, protocol-level surveys conducted in 2015 identified two coastal California Gnatcatcher breeding pairs south of the existing Mesa Substation site. The nest of one breeding pair was observed within coastal sage scrub on the off-site restored slope (Figure 8: *Coastal California Gnatcatcher Nest Locations*). A second pair was observed nesting on site within coastal sage scrub adjacent to a dirt access road. Previous surveys conducted for the TRTP identified nests in coastal sage scrub, mulefat scrub, and ruderal vegetation that were primarily concentrated in the southernmost area of the Mesa Substation site. Occupied breeding habitat for coastal California Gnatcatcher was mapped based on these nest locations, the coastal California Gnatcatcher activity observed during the 2015 protocol-level surveys, and previous coordination with USFWS on TRTP regarding the definition of occupied habitat at the Mesa site (Figure 8: *Coastal California Gnatcatcher Nest Locations*).

6.0 EFFECTS OF THE PROPOSED ACTION

This section addresses the potential direct, indirect, and cumulative effects to the coastal California Gnatcatcher resulting from the construction of the Project. Impacts from construction will be minimized by implementing measures described in Section 3.2 Minimization and Monitoring Measures, and are considered in this analysis.

The Project will result in permanent and temporary impacts to occupied breeding habitat for coastal California Gnatcatcher (Figure 10: *Anticipated Impacts to Coastal California Gnatcatcher Habitat*). No direct impacts will occur to occupied breeding habitat within the restricted use area or on adjacent parcels, outside the Project area. There will be impacts to occupied unsuitable habitat that historically had nests but was used only for foraging in 2015. No direct take of individual birds is anticipated. No direct impacts will occur along the telecommunications route within coastal California Gnatcatcher habitat.

A minimal amount of permanent impact will occur within occupied breeding habitat; most permanent impacts will be to occupied unsuitable habitat within ruderal vegetation immediately south of the existing Mesa Substation. Temporary impacts are also expected immediately south of the existing Mesa Substation within both occupied breeding habitat and occupied unsuitable habitat, in ruderal vegetation, an ephemeral drainage, mulefat scrub, and a small area of coastal sage scrub. Occupied breeding habitat in coastal sage scrub will be temporarily impacted for an excess of five years. Individual birds will be able to use coastal sage scrub located in the restricted use area and on parcels adjacent to the Project after vegetation is removed during the initial clearing phase.[1] However, as construction of the Monterey Park Market Place will eventually result in permanent impacts to on-site and adjacent off-site occupied breeding habitat, temporary Project impacts will be considered to have a permanent effect resulting in the long-term loss of viability of coastal California gnatcatcher in the Project area. As such, permanent and temporary impacts to occupied breeding habitat will be mitigated off-site at a two-to-one ratio, and impacted areas will be revegetated with native vegetation but not restored to coastal sage scrub. Occupied unsuitable habitat will be revegetated upon construction completion to like conditions.

6.1 Coastal California Gnatcatcher

Direct Effects to Occupied Breeding Habitat

Direct impacts are expected to affect a total of 1.00 acre of occupied breeding habitat for coastal California Gnatcatcher south of the existing Mesa Substation (Table 3: *Anticipated Impacts to Occupied Breeding Habitat of Coastal California Gnatcatcher*). Permanent and direct impacts to occupied breeding habitat for coastal California Gnatcatcher will occur within 0.02 acre of coastal sage scrub. In addition, there will be a temporal loss in excess of five years to 0.98 acre of occupied breeding habitat for coastal California Gnatcatcher. Within the areas affected, these impacts could affect up to two pairs of coastal California gnatcatcher. Shrubs and other vegetation used by coastal California Gnatcatcher will be removed in these areas, resulting in the loss of foraging and nesting habitat and/or the removal of some food sources. Impacts will be most significant during the nesting season, which is generally March through August. Permanent and temporary impacts to occupied breeding habitat will be mitigated off-site by purchasing credits for coastal sage scrub at a two-to-one ratio. As a result, off-site mitigation will result in a net increase in coastal California Gnatcatcher habitat. The details of the mitigation plan for this species will be coordinated with the USFWS and incorporated into the HCRP.

Direct Effects to Occupied Unsuitable Habitat

Impacts will also occur to occupied unsuitable habitat within the territories of coastal California Gnatcatcher where birds will forage. Birds appear to be using these low-quality areas because

[1] SCE assumes that construction of the adjacent Monterey Park Market Place will not remove the adjacent coastal sage scrub before the initial clearing phase of the Mesa 500 kV Substation Project.

of the limited availability of suitable coastal sage scrub habitat on and adjacent to the Project area. Shrubs and other vegetation used by coastal California Gnatcatcher in occupied unsuitable habitat will be removed in these areas, resulting in the temporary loss of foraging habitat and/or the removal of some food sources in excess of five years.

Table 3: Anticipated Impacts to Occupied Breeding Habitat of Coastal California Gnatcatcher

Location	Occupied Breeding Habitat in Project Area (acres)	Temporal Impacts to Occupied Breeding Habitat[2] (acres)	Permanent Impacts to Occupied Breeding Habitat (acres)	No Impacts to Occupied Breeding Habitat (Restricted Use Area) (acres)
Adjacent to existing Mesa Substation site	1.40	0.98	0.02	0.40
Total	**1.40**	**0.98**	**0.02**	**0.40**

Direct temporary impacts to coastal California Gnatcatcher may also include the disruption of nesting behavior due to a temporary increase in the presence of humans, dust, and noise from construction equipment and vehicles. Increased noise and vibration resulting from heavy equipment could also disrupt nesting behavior in the restricted use area and in habitat outside of the Project, but within the Project action area (e.g., the off-site coastal sage scrub slope immediately south of the Mesa Substation site), which could further reduce available habitat for this species.

SCE will reduce direct impacts to coastal California Gnatcatcher by implementing MM-03, MM-04, MM-CAGN-01, MM-CAGN-02, MM-CAGN-03, and MM-CAGN-04, which includes conducting protocol-level surveys prior to the start of construction. Further, direct impacts will be reduced by implementing no-work buffers, as appropriate, if nesting birds are found within the Project action area, clearing vegetation only after a USFWS-approved biologist has swept the area for individual birds, ensuring that a biological monitor is present, and limiting work in close proximity to active nests until after chicks have fledged and are no longer dependent on their parents.

Indirect Effects

No indirect effects on coastal California Gnatcatcher are anticipated as a result of the Project.

[2] Temporary impact acres include temporal impacts for an excess of five years. These temporal impacts will be considered as a permanent effect of the species given that adjacent development projects may affect the long-term viability of the species. A portion of SCE's temporal impact acreage located north and west of Greenwood Avenue is within areas analyzed by the Monterey Park Market Place Final Environmental Impact Report and was found to have permanent impacts; consequently, some of these areas will be permanently impacted by the Monterey Park Market Place after temporal impacts have happened for the SCE project.

Critical Habitat

Critical habitat for coastal California Gnatcatcher occurs within the Project action area, along the telecommunications route, in the Montebello Hills and in the Rio Hondo and San Gabriel River corridors (Figure 6: *Coastal California Gnatcatcher Habitat and Designated Critical Habitat*). As discussed in Section 3.1 Project Components and Construction Description, construction work along the telecommunications route consists of workers manually stringing cable, which will occur outside of the nesting season and adjacent to existing paved roads. Thus, this work will not result in ground-disturbing activities.

Temporary impacts to critical habitat for the coastal California Gnatcatcher may include the disruption of nesting behavior within the Project action area due to a temporary increase in the presence of humans, dust, and noise from construction equipment and vehicles. These temporary impacts occur at the edges of habitat along existing roads and a landfill where there are existing human presence, dust, and noise. Thus, temporary effects in critical habitat are not likely to be significantly greater than the existing human presence, dust, and noise. Further, human presence, dust, and noise associated with construction are minimal and limited in duration. SCE will reduce impacts further to critical habitat for coastal California Gnatcatcher by implementing MM-03, MM-04, MM-CAGN-01, and MM-CAGN-03, which includes conducting protocol-level surveys prior to the start of construction. Impacts will be reduced by implementing no-work buffers as appropriate if nesting birds are found within the Project area, ensuring that a biological monitor is present, and limiting work in close proximity to active nests until after chicks have fledged and are no longer dependent on their parents.

Determination of Effect

Based on a literature review, field investigations, the Project design, and the construction schedule, SCE has determined that the activities associated with the Project "may affect, and will likely adversely affect" coastal California Gnatcatcher. The Project is "not likely to adversely affect" designated critical habitat for coastal California Gnatcatcher because the temporary effects of human presence, dust, and noise occur are minimal, limited in duration, and at the habitat edges along roads and a landfill. As part of the Project, SCE will implement the minimization and monitoring measures described in Section 3.2 Minimization and Monitoring Measures, to avoid and/or minimize the potential for direct take of federally protected species.

6.2 Cumulative Effects

Cumulative effects include the effects of future actions that are reasonably certain to occur in the Project action area considered in this BA. Future federal actions that are unrelated to the Project are not considered here because they require separate consultation pursuant to Section 7 of the federal ESA.

Construction and grading associated with the Project will result in temporary impacts to approximately 0.98 acre of coastal California Gnatcatcher occupied breeding habitat and direct permanent impacts to approximately 0.02 acre. In addition, the Monterey Park Market Place

has the potential to permanently impact habitat for the coastal California Gnatcatcher adjacent to the Project site. The coastal sage scrub on the parcel immediately south of the Mesa Substation site is located within the Monterey Park Market Place's development plan. As such, there is a potential that coastal California Gnatcatcher will no longer occur on the Project site should the Monterey Park Market Place be developed prior to the Project. The Montebello Hills Master Planned Community, located approximately 0.3 mile to the southeast of Mesa Substation, will also permanently affect habitat for the coastal California Gnatcatcher, including a portion of critical habitat designated for this species. However, the Montebello Hills Master Planned Community will result in a net increase in coastal California Gnatcatcher habitat due to mitigation for that project in the form of an approximately 260.60-acre, on-site habitat reserve. As a result, the Montebello Hills Master Planned Community and the Project will not result in cumulative impacts to coastal California Gnatcatcher habitat. In addition, all projects will be subject to the same permitting requirements under the federal and California ESAs, which are intended to minimize and mitigate for impacts to species, both at the project level and in a regional context. As a result, cumulative impacts to coastal California Gnatcatcher habitat are expected to be minimal with the implementation of minimization and monitoring measures from the Project and other projects.

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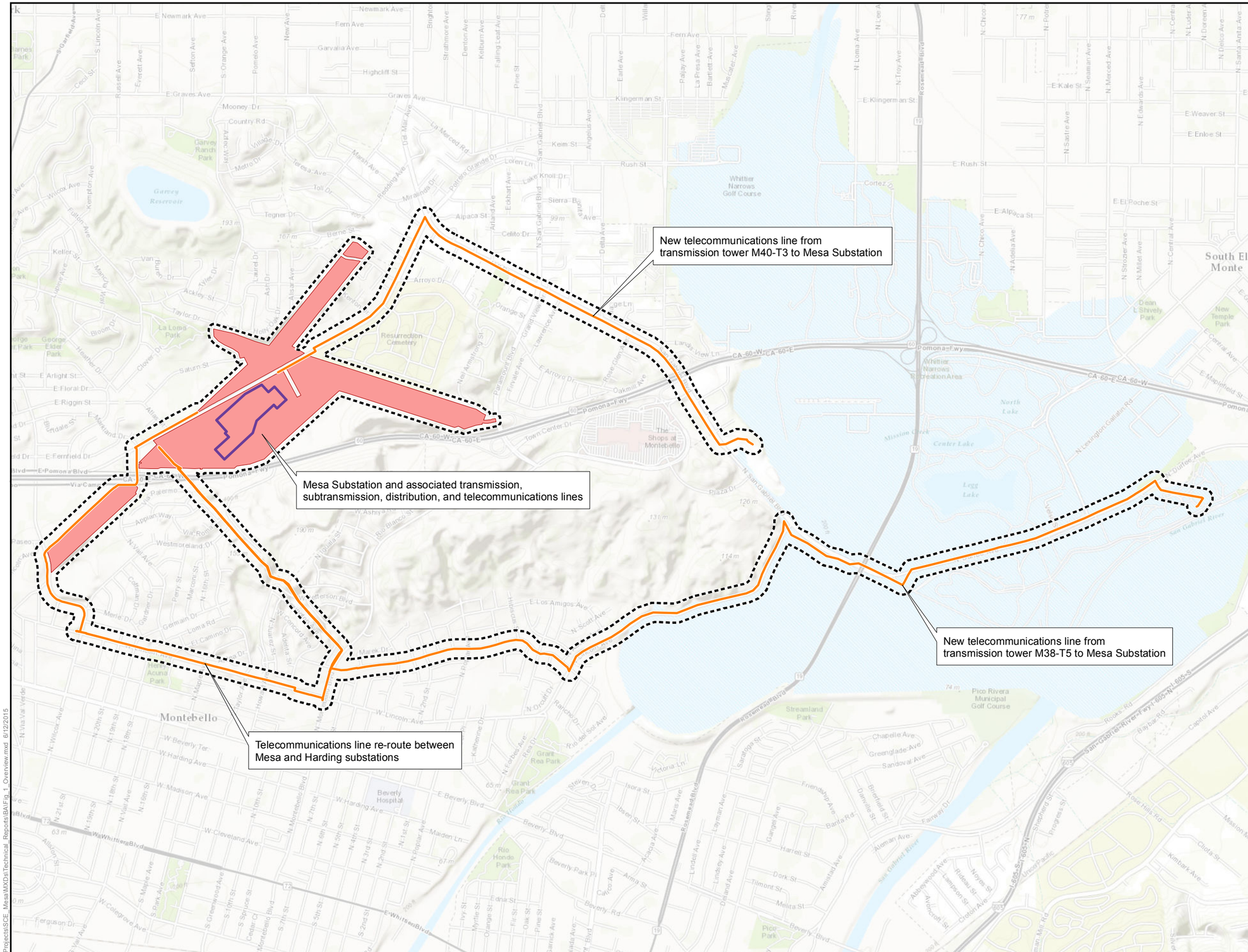
Figure 1: Project Overview and Action Area

Mesa 500 kV Substation Project



Mesa Substation Study Area
Action Area
Existing Substation
Proposed Telecommunications

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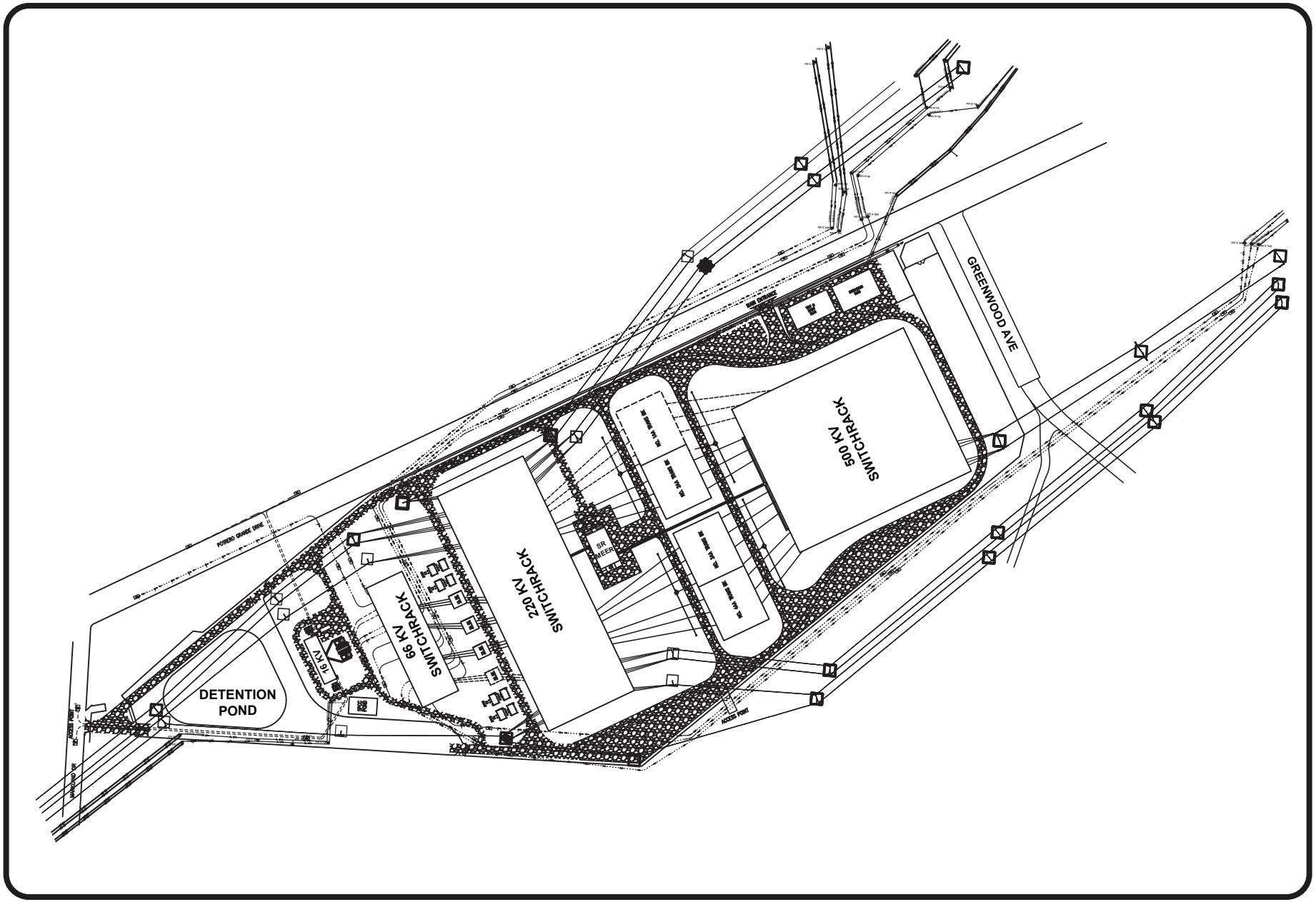

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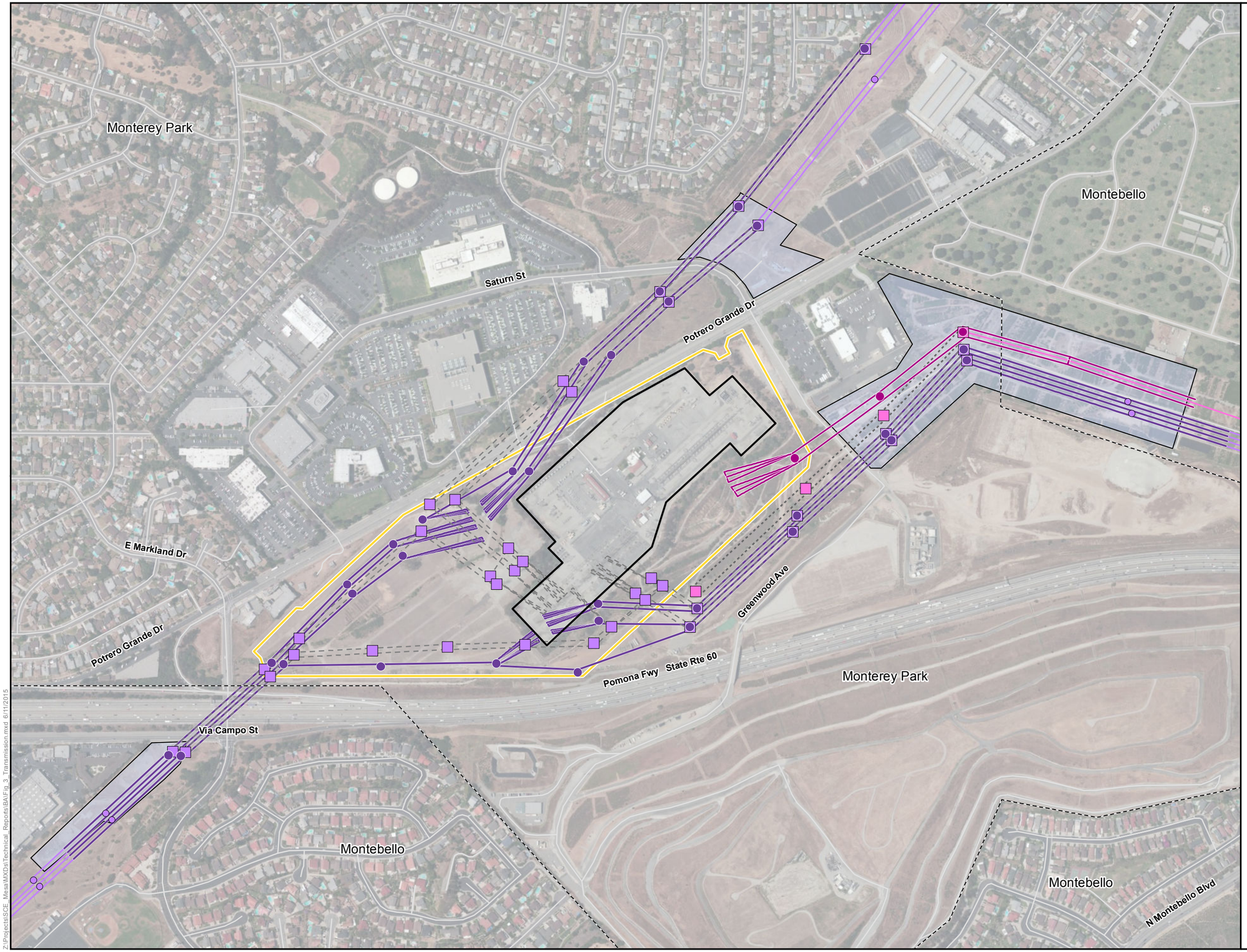
Figure 2: Proposed Substation Layout

Figure 3:
Project Overview
(Transmission)

Mesa 500 kV Substation Project



Proposed Substation Perimeter Wall
Existing Substation
Staging Yard
City Boundary

500 kV Transmission

Proposed 500 kV Structure
Existing 500 kV Structure to be Removed
Proposed 500 kV Line
Existing 500 kV Line to be Removed
Existing 500 kV Line to Remain

220 kV Transmission

Proposed 220 kV Structure
Existing 220 kV Structure to be Removed
Existing 220 kV Structure to Remain
Proposed 220 kV Line
Existing 220 kV Line to be Removed
Existing 220 kV Line to Remain

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

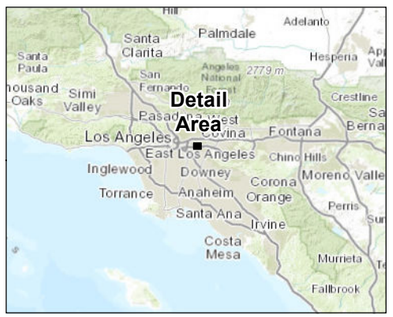


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Figure 4:
Project Overview
(Subtransmission)

Mesa 500 kV Substation Project

Proposed Substation Perimeter Wall
Existing Substation
Staging Yard
City Boundary

Subtransmission Structures

Existing Structure to Remain
Proposed Structure
Existing Structure to be Removed
Proposed Vault

Subtransmission Lines

Existing Overhead 66 kV Line to Remain
Existing Overhead 66 kV Line to be Removed
Existing Underground 66 kV Line to be Removed
Proposed Overhead 66 kV Line
Proposed Underground 66 kV Line

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

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Figure 5: Project Overview (Distribution)

Mesa 500 kV Substation Project

Proposed Substation Perimeter Wall
Existing Substation
Staging Yard
City Boundary

Distribution Structures

Existing Pole
Existing Vault (Manhole)
Proposed Pole
Proposed Vault

Distribution Lines

Existing 16 kV Underground Line to Remain
Proposed 16 kV Underground Line
Re-Route 16 kV Underground Line
Existing 16 kV Underground Line to be Removed

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

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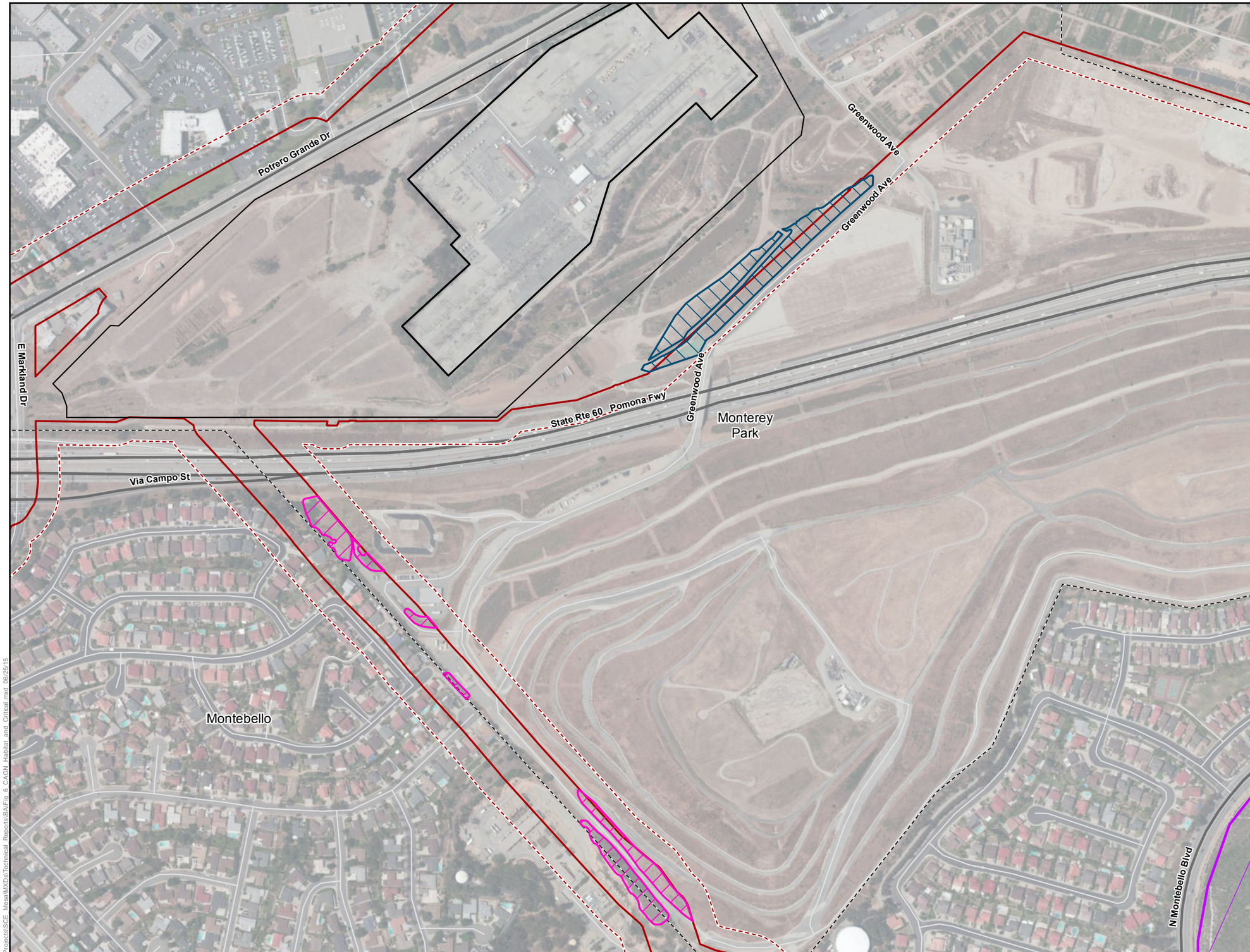
Figure 6:
Coastal California Gnatcatcher Designated Critical Habitat Map
Map 1 of 3

Mesa 500 kV Substation Project



Survey Area/Project Area
Action
Proposed Substation Perimeter Wall
Existing Substation
City Boundary
Coastal California Gnatcatcher Occupied Breeding Habitat
Coastal California Gnatcatcher Habitat
Coastal California Gnatcatcher Critical Habitat

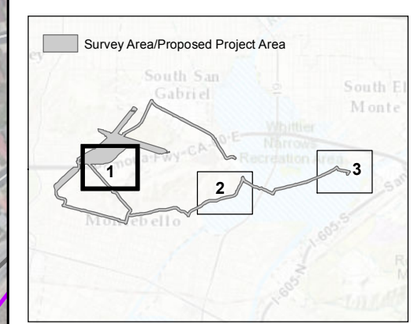


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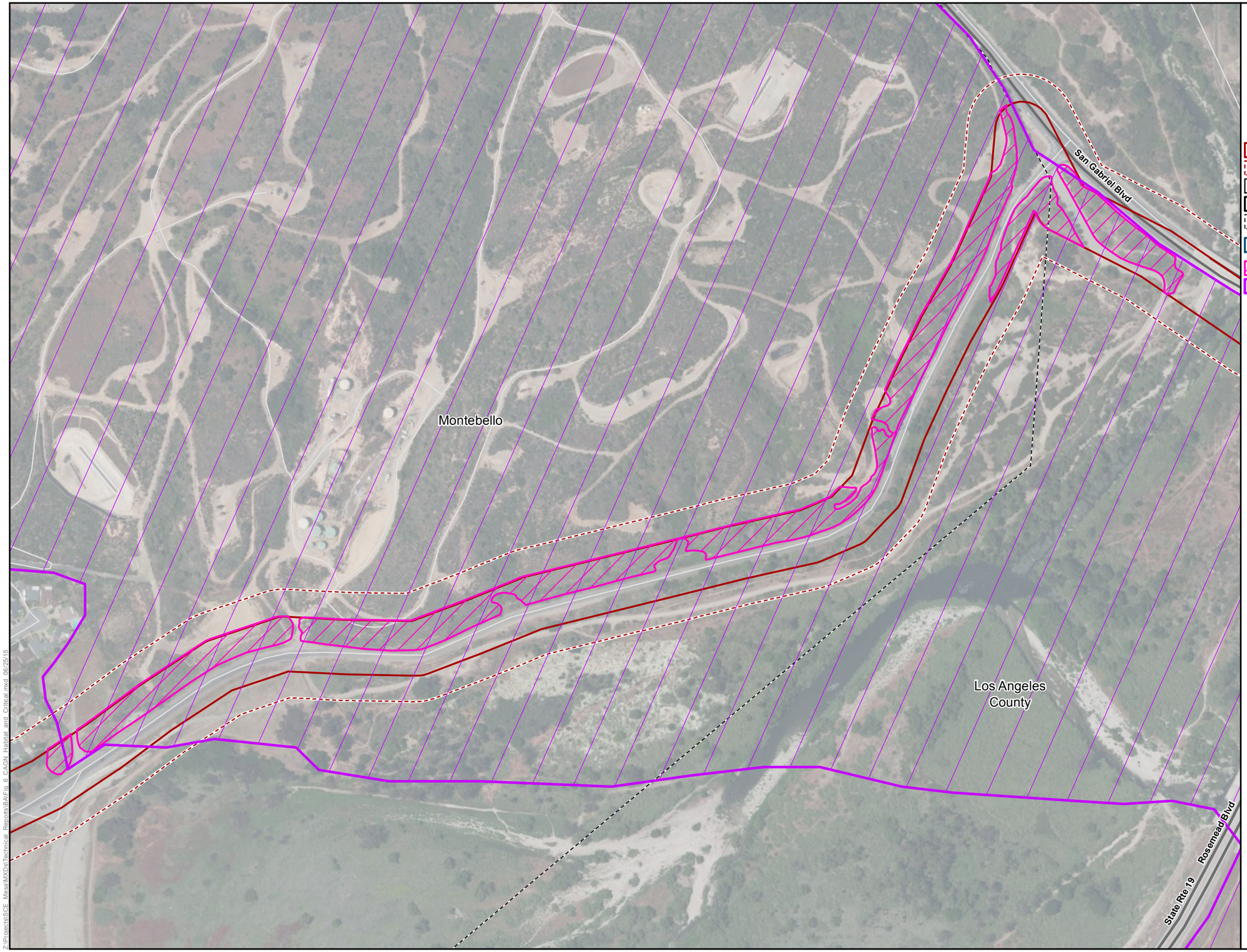
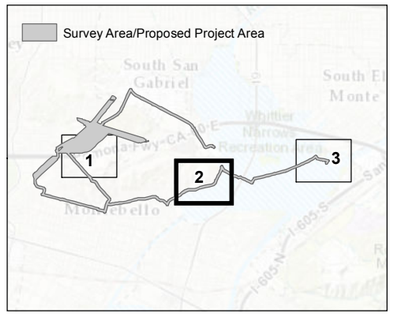
Figure 6:
Coastal California Gnatcatcher Designated Critical Habitat Map
Map 2 of 3

Mesa 500 kV Substation Project



- Survey Area/Project Area
- Action
- Proposed Substation Perimeter Wall
- Existing Substation
- City Boundary
- Coastal California Gnatcatcher Occupied Breeding Habitat
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat



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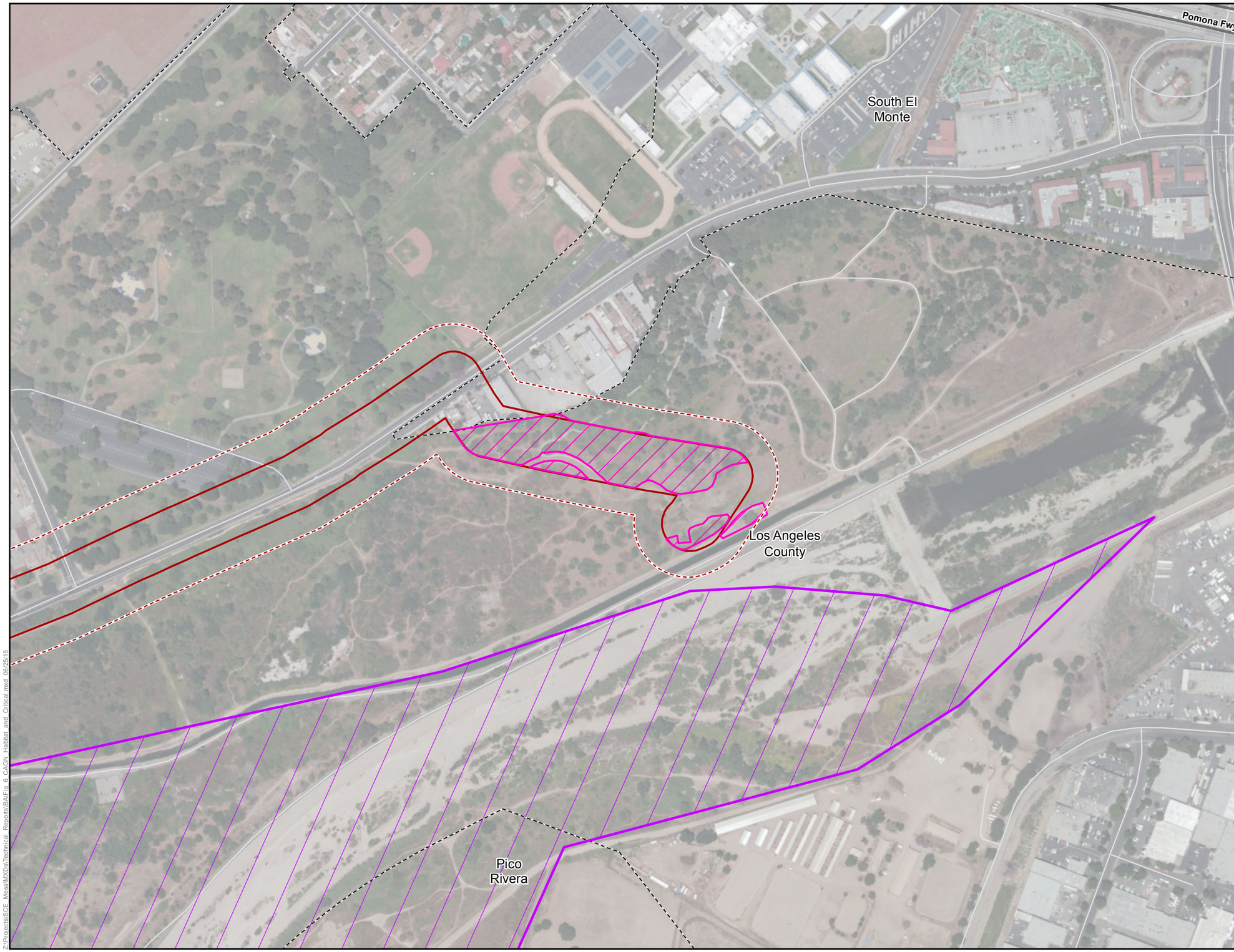
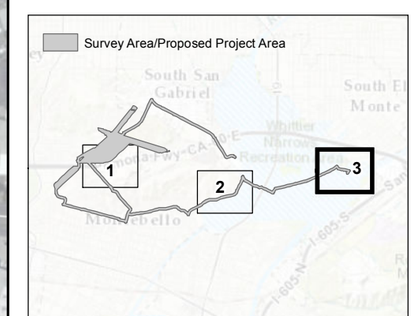


Figure 6:
Coastal California Gnatcatcher Designated Critical Habitat Map
Map 3 of 3

Mesa 500 kV Substation Project

- Survey Area/Project Area
- Action
- Proposed Substation Perimeter Wall
- Existing Substation
- City Boundary
- Coastal California Gnatcatcher Occupied Breeding Habitat
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat



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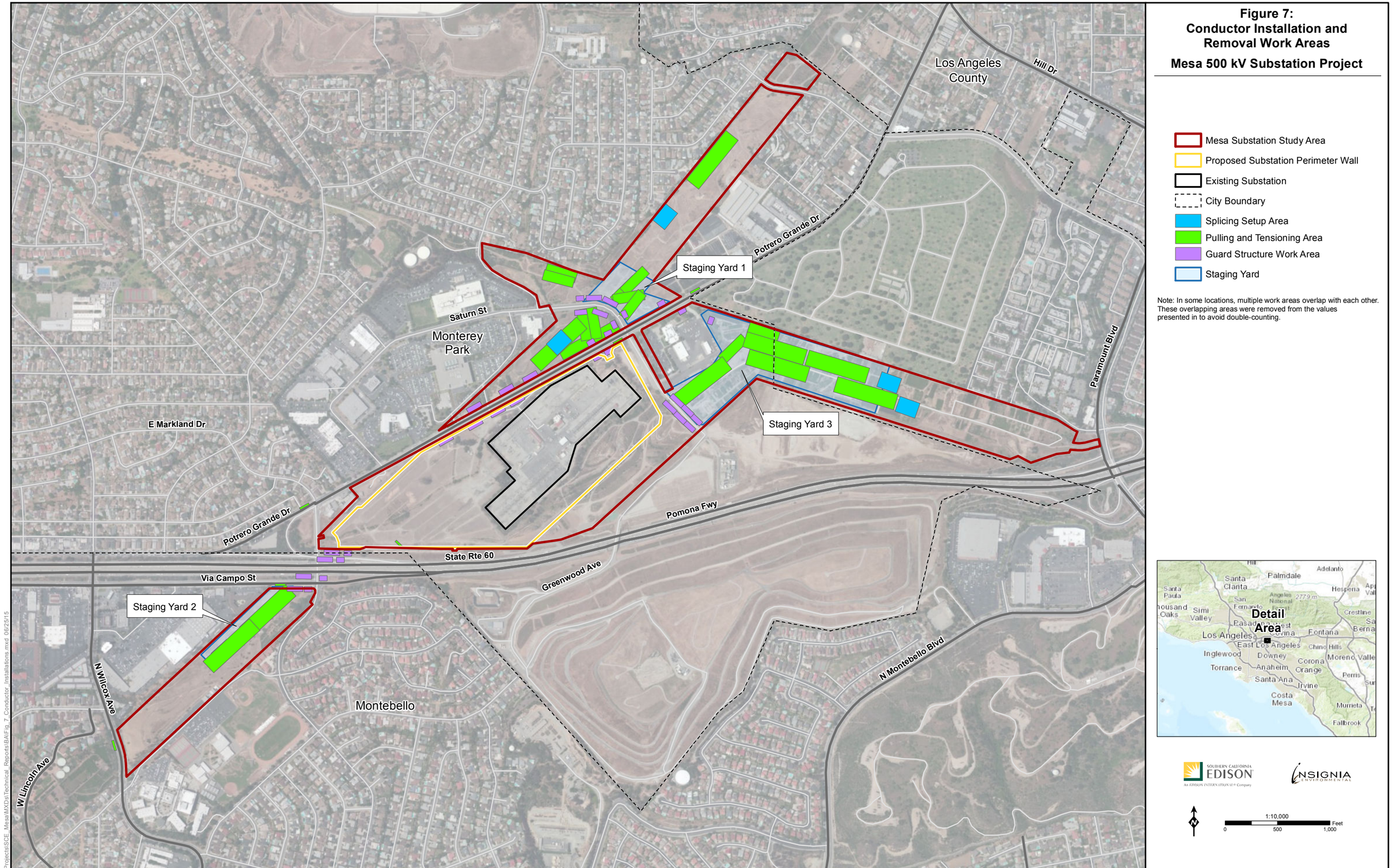

Figure 7:
Conductor Installation and Removal Work Areas
Mesa 500 kV Substation Project

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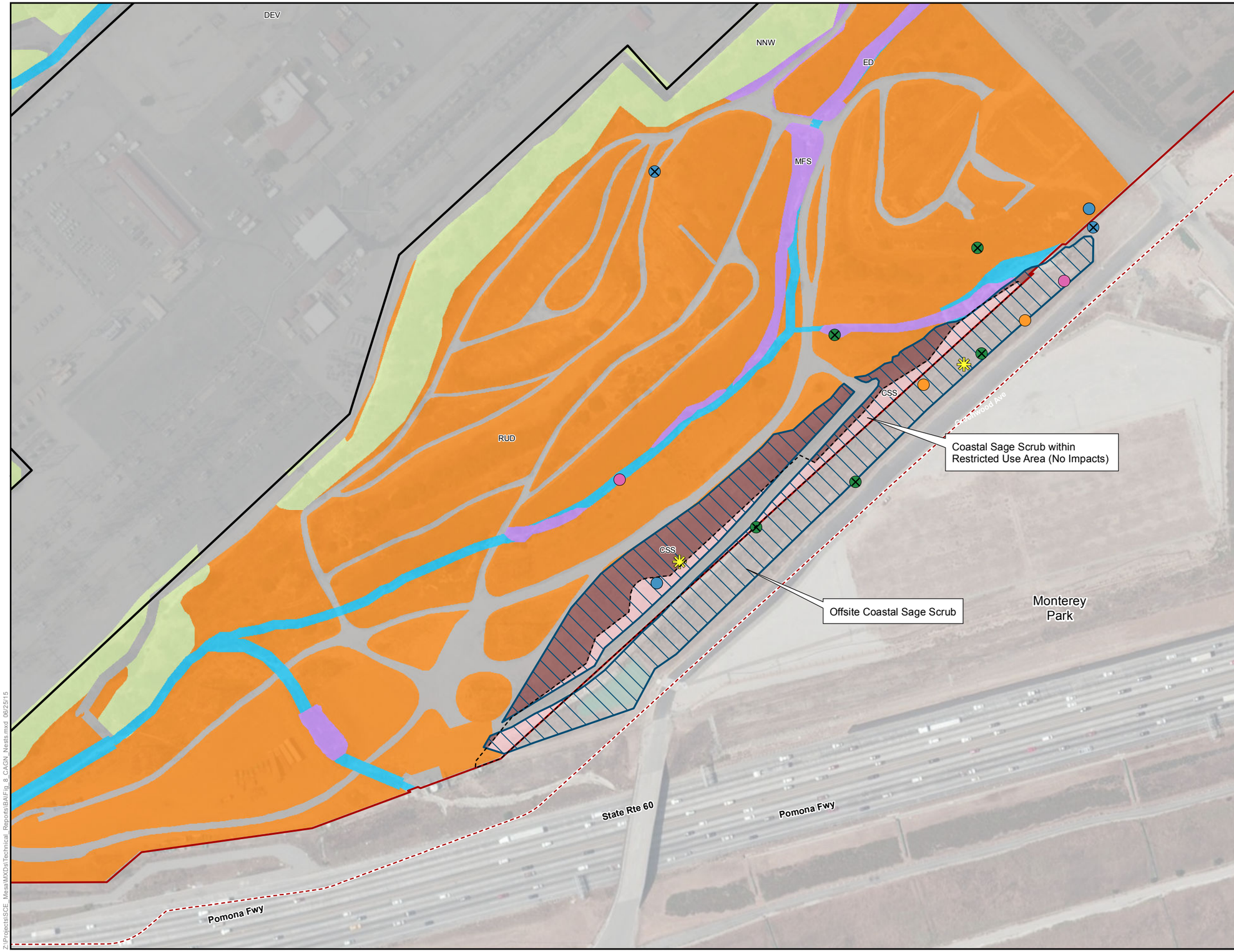
Figure 8:
Coastal California Gnatcatcher Nest Locations

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
Restricted Use Area (No Impacts)
Existing Substation
Coastal California Gnatcatcher Occupied Breeding Habitat

Coastal California Gnatcatcher Nests

Successful
- 2011
- 2012
- 2013
- 2015

Unsuccessful
- 2013
- 2014

Vegetation Communities
- Coastal Sage Scrub (CSS) – Impacted
- Coastal Sage Scrub (CSS) – Restricted Use Area (No Impact)
- Disturbed/Developed (DEV)
- Ephemeral Drainage (ED)
- Mulefat Scrub (MFS)
- Non-Native Woodland (NNW)
- Ruderal (RUD)

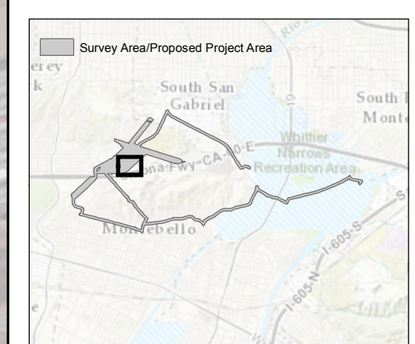


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Figure 9:
Vegetation Communities
Map 1 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

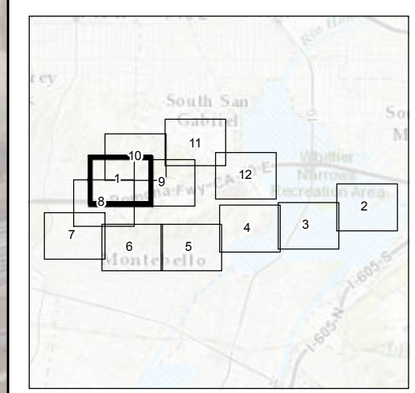

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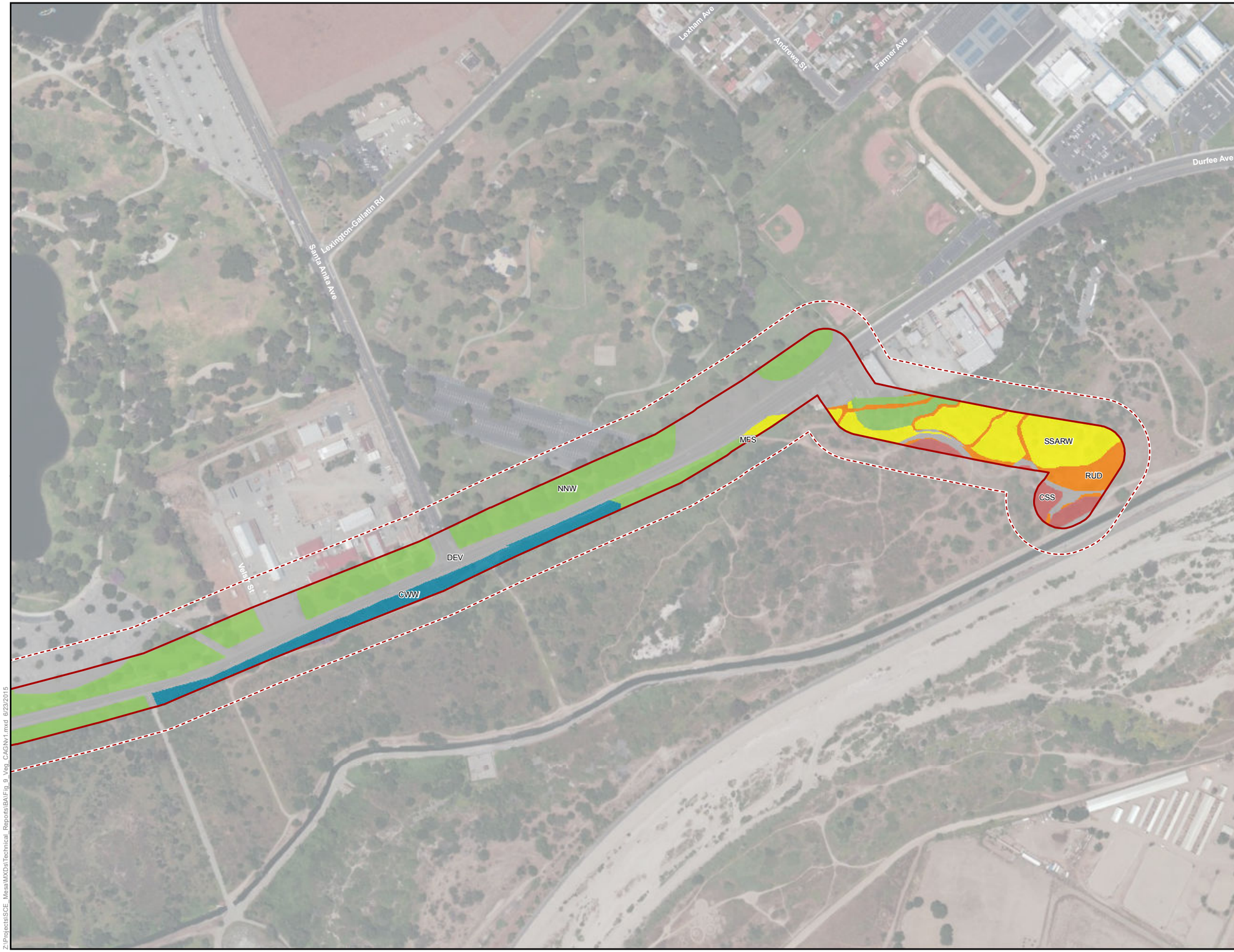
Figure 9:
Vegetation Communities
Map 2 of 12

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
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- Intermittent Drainage (ID)
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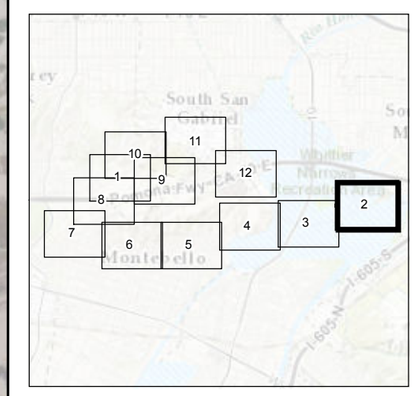

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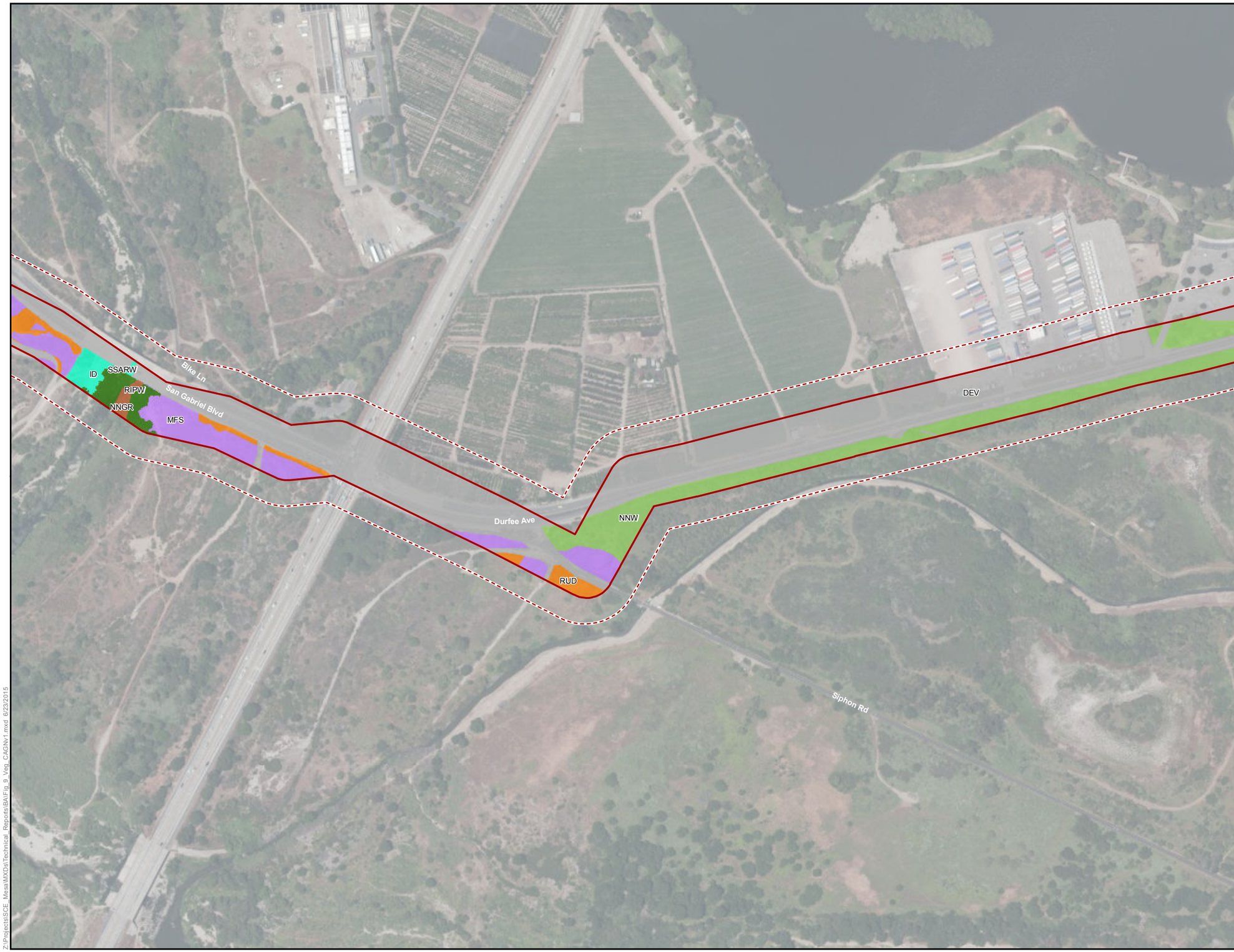
Figure 9:
Vegetation Communities
Map 3 of 12

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
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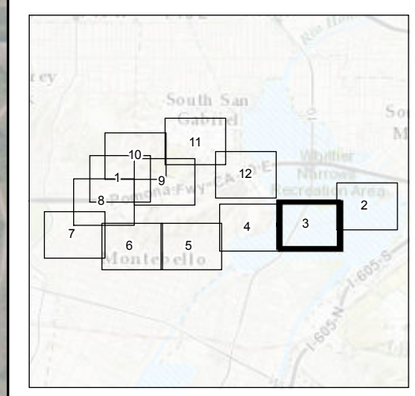

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Figure 9:
Vegetation Communities
Map 4 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

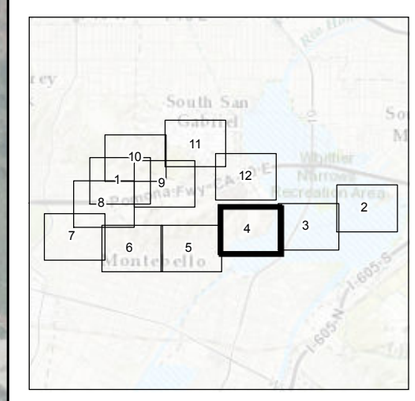

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Figure 9:
Vegetation Communities
Map 5 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

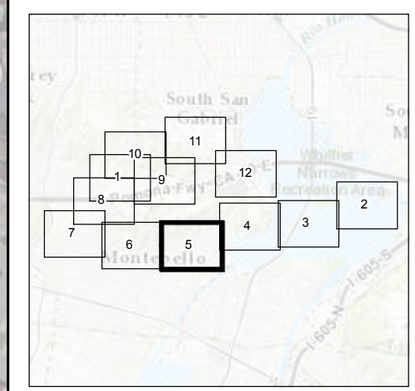

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Figure 9:
Vegetation Communities
Map 6 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

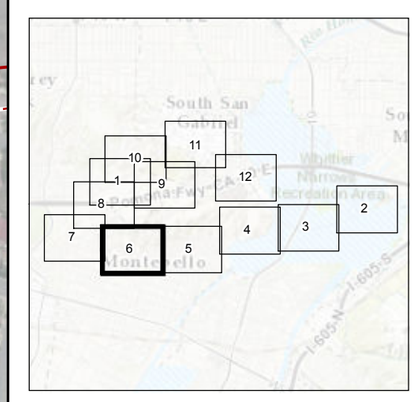

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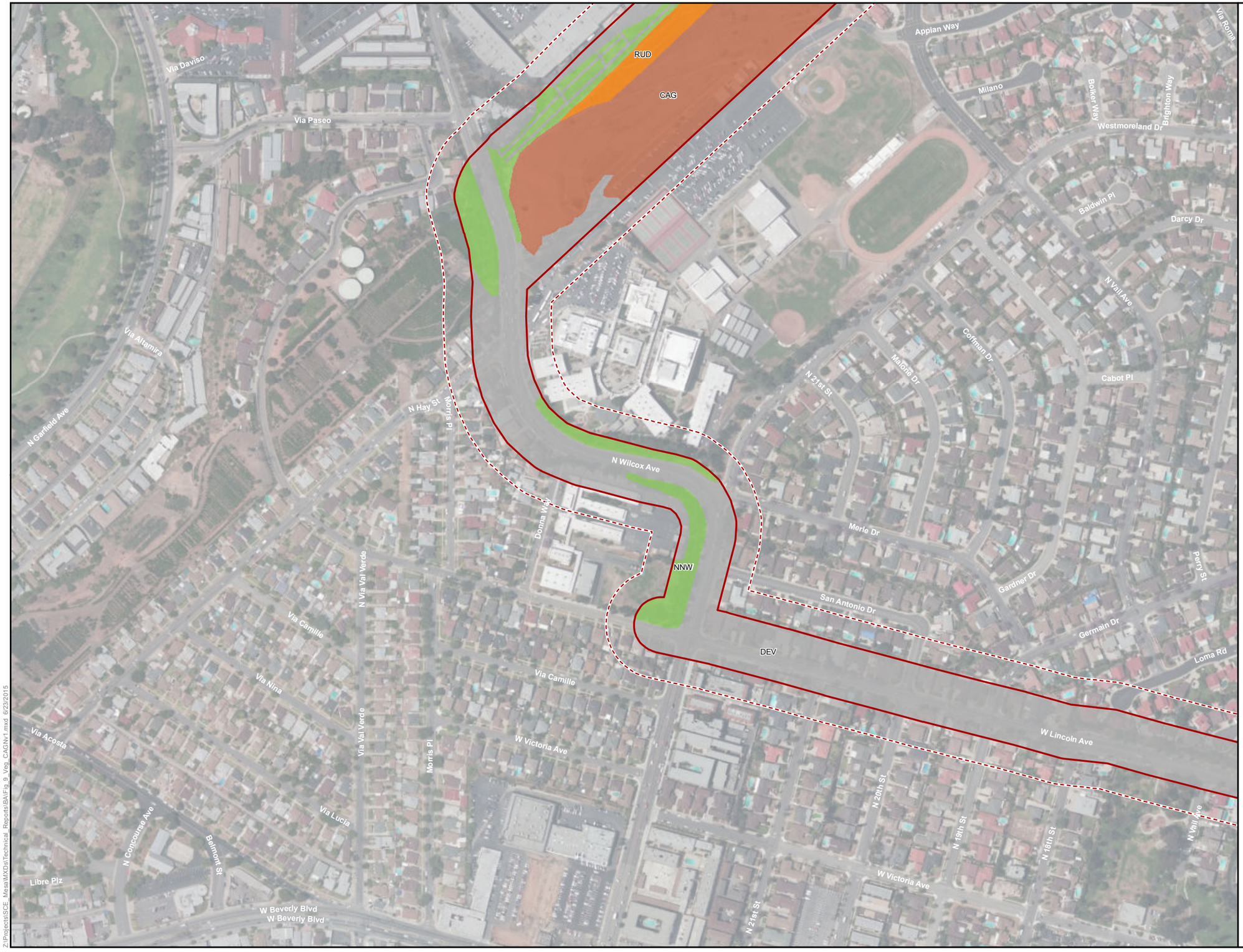
Figure 9:
Vegetation Communities
Map 7 of 12

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

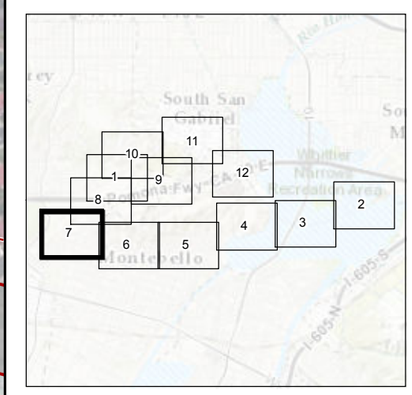

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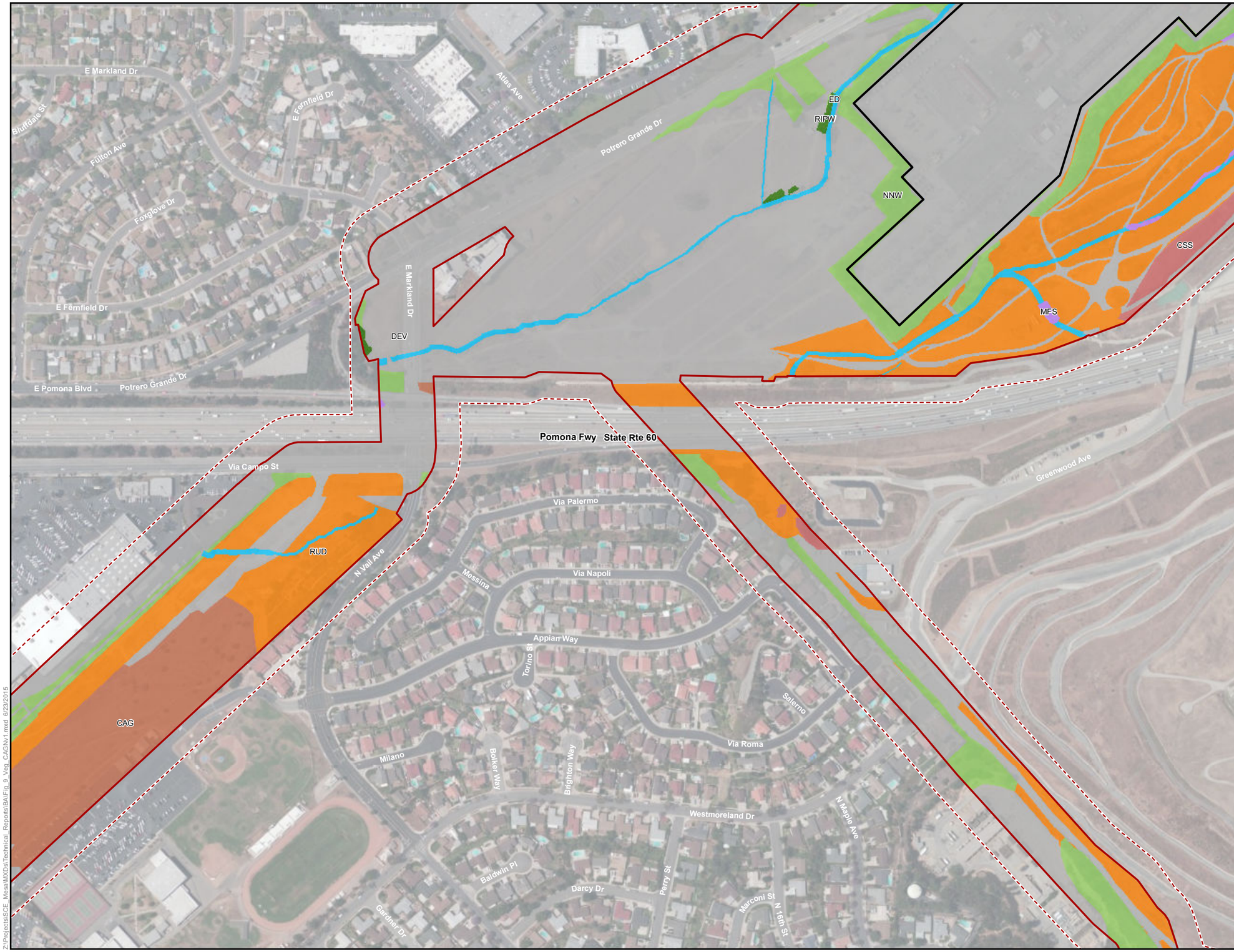
Figure 9:
Vegetation Communities
Map 8 of 12

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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- Ephemeral Drainage (ED)
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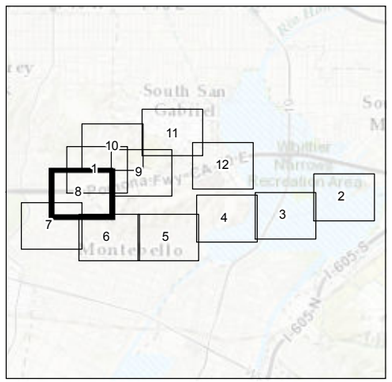

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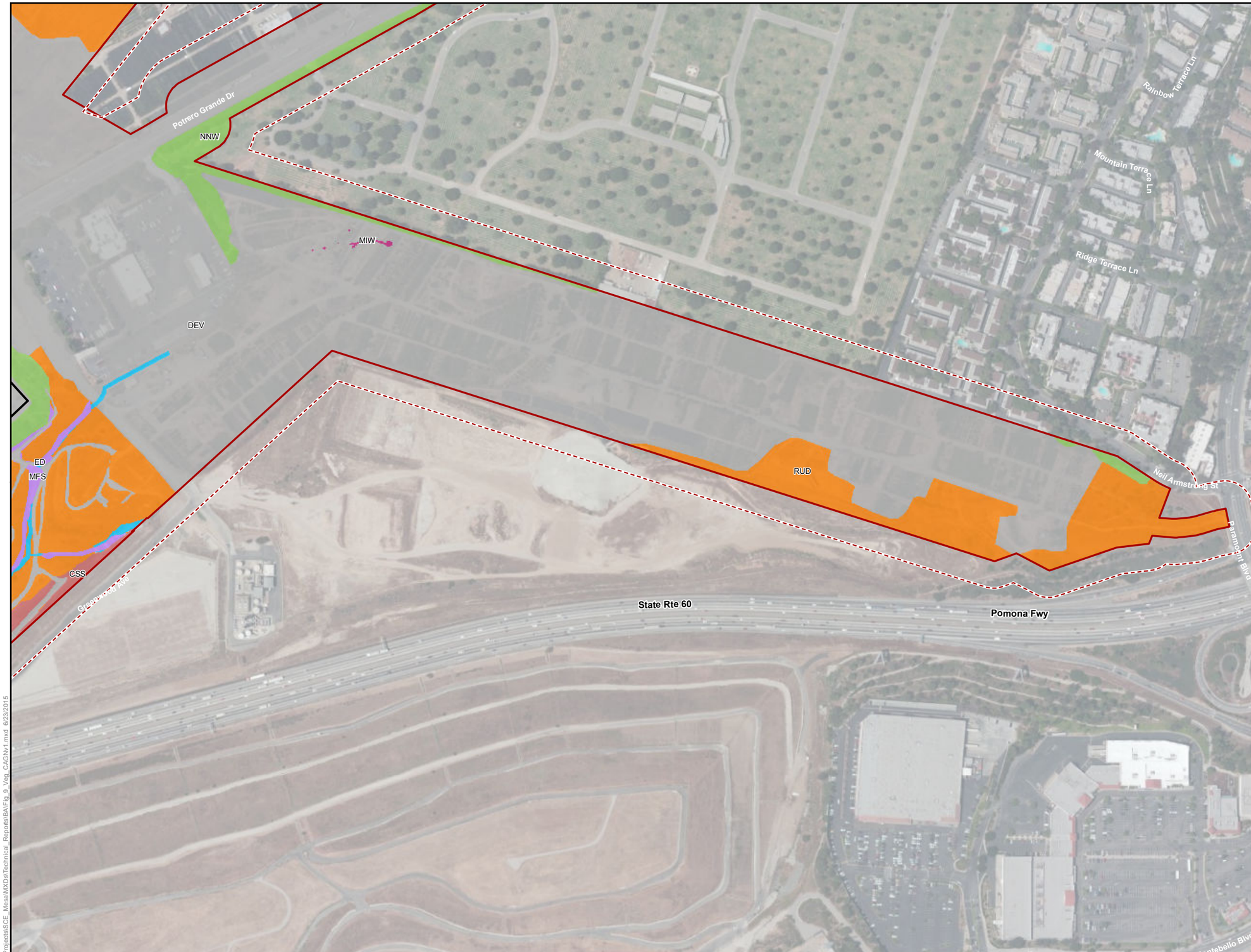
Figure 9:
Vegetation Communities
Map 9 of 12

Mesa 500 kV Substation Project



Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
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- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

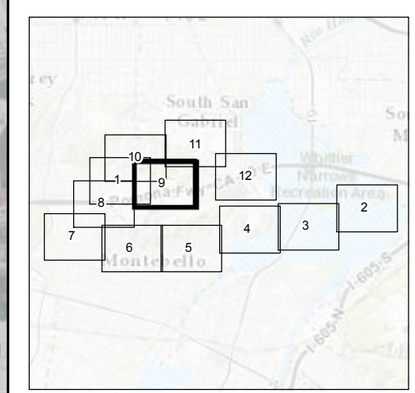

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Figure 9: Vegetation Communities Map 10 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
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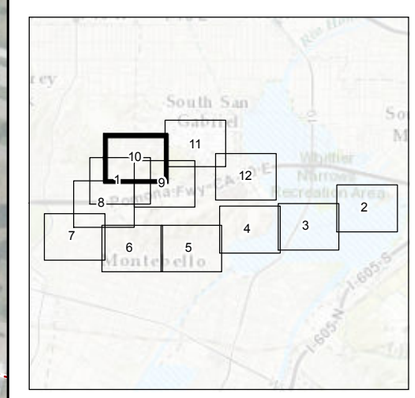

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Figure 9:
Vegetation Communities
Map 11 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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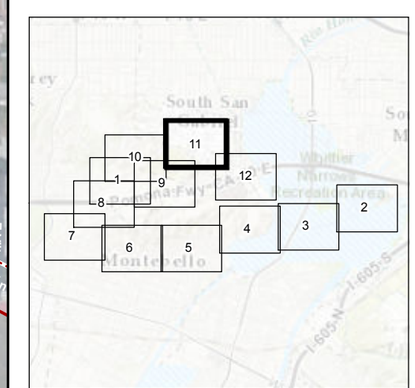

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Figure 9:
Vegetation Communities
Map 12 of 12

Mesa 500 kV Substation Project

Survey Area/Project Area
Action Area
City Boundary
Existing Substation

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
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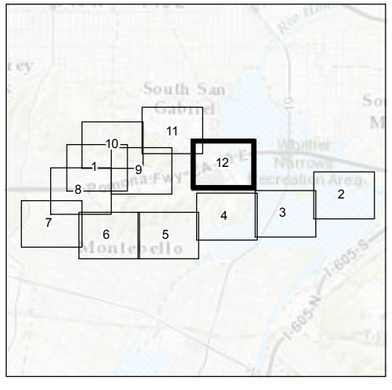

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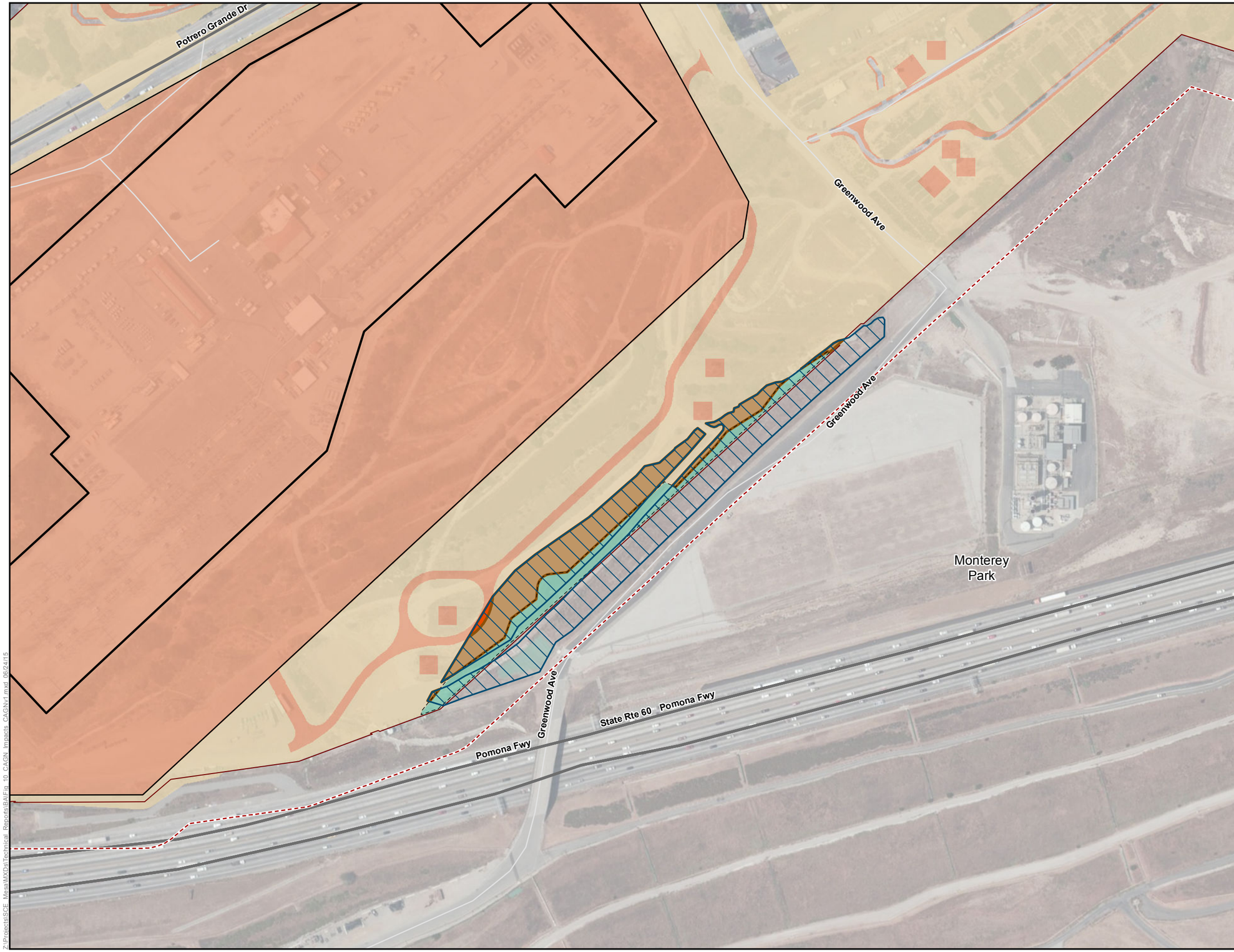


Figure 10:
Anticipated Impacts to Coastal California Gnatcatcher Habitat

Mesa 500 kV Substation Project

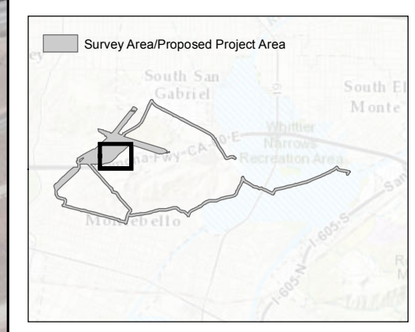
Survey Area/Project Area
Action Area
Proposed Substation Perimeter Wall
Existing Substation
Coastal California Gnatcatcher Occupied Breeding Habitat

Project Impacts

Temporary
Permanent
No Impact (Restricted Use Area)

Anticipated Impacts to Coastal California Gnatcatcher Habitat

Temporary
Permanent



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

1:2,400
0 100 200 300 Feet

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ATTACHMENT A: COASTAL CALIFORNIA GNATCATCHER SURVEY REPORT

June 2, 2015

U.S. Fish and Wildlife Service
Attn: Stacey Love
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: 45-day Report for Protocol Coastal California Gnatcatcher Surveys for the Proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California

Ms. Love:

This letter presents the 45-Day Report for U.S. Fish and Wildlife Service (USFWS) protocol breeding season surveys for the coastal California gnatcatcher (CAGN; *Polioptila californica californica*). Surveys were conducted for the proposed Southern California Edison (SCE) Mesa 500 kilovolt (kV) Substation Project (project) in Los Angeles County, California. Rocks Biological Consulting (RBC) performed the surveys described in this report under contract to Insignia Environmental.

The project is located primarily in the City of Monterey Park, with other project features within unincorporated areas of Los Angeles County and Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, California. The project is within the El Monte and Los Angeles U.S. Geological Survey (USGS) 7.5-minute series quadrangle maps (Figure 1). These surveys were performed in support of a Biological Assessment (BA) for a formal Section 7 consultation with the USFWS.

The 2015 CAGN survey area was determined by creating a 150-foot buffer around all project features using a Geographic Information System (GIS) and surveying all suitable CAGN habitat within the buffer. Suitable CAGN habitat observed within or immediately adjacent to the buffer area included moderate and high quality coastal sage scrub (CSS), disturbed/fragmented CSS, revegetated CSS, and ruderal, weedy areas in close proximity to CSS. The dominant species within suitable habitat included California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), lemonadeberry (*Rhus integrifolia*), and laurel sumac (*Malosma laurina*).

Non-suitable habitats within the project area included developed areas, highly disturbed areas with low-growing annual vegetation, dirt roads, agricultural fields, and riparian habitat and ornamental vegetation that are not immediately adjacent to CSS.

5101 SEPTEMBER STREET ● SAN DIEGO, CA 92110-1118
619.508.3803 ● LEE@ROCKSBIO.COM

Survey methodology followed the USFWS presence/absence survey protocol (1997) for non-NCCP areas, which requires six (6) protocol surveys be conducted during the CAGN breeding season (March 15 – June 30). Surveyors Lee Ripma (TE–221290–3.1) and Garrett Huffman (TE–20168A–0) conducted the surveys weekly across approximately 80 acres of suitable habitat at a rate of approximately 8 acres/hour. Taped vocalizations were used sparingly to elicit a CAGN response and were ceased upon hearing or observing a CAGN.

Please see Table 1 for survey dates, times, and conditions. The attached figures (1–3E) show the survey area, survey route, and location of observed CAGN. A list of the 56 bird species observed during the survey is included as Appendix A.

Table 1. Survey Conditions During California Gnatcatcher Surveys at the Proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California

CAGN Survey	Date	Surveyor	Time (Start-End)	Temp F (Start-End)	Cloud Cover (Start-End)	Wind Range in mph (Start-End)
#1	4/9/2015	Lee Ripma	0630-1155	52.7-78.7	20-0	0-1, 2-4
#1	4/10/2015	Lee Ripma	0640-1158	51.7-75.5	30-40	0-2, 1-3
#2	4/17/2015	Garrett Huffman	0600-1200	55-87	0-0	1-2, 1-3
#2	4/17/2015	Lee Ripma	0605-1105	54.8-72.4	0-0	1-3, 0-2
#3	4/23/2015	Garrett Huffman	0600-1200	57-73	70-60	0-2, 1-3
#3	4/24/2015	Lee Ripma	0550-1045	56.8-64.2	90-100	0-2, 1-3
#4	4/30/2015	Lee Ripma	0605-1145	57.8-95.5	5-30	0-2, 2-4
#4	5/1/2015	Lee Ripma	0610-1135	56.1-88.2	25-15	0-1, 2-4
#5	5/7/2015	Lee Ripma	0610-1150	60.5-71.3	95-90	0-1, 2-5
#5	5/8/2015	Lee Ripma	0615-1140	50.4-66.7	30-95	2-4, 0-2
#6	5/14/2015	Lee Ripma	0620-1155	59.6-71.2	60-100	0-1, 0-2
#6	5/15/2015	Lee Ripma	0610-1200	52.9-62.9	100-95	0-1, 2-4

Two pairs of CAGN were observed nesting within approximately 550 feet of each other at the Mesa Substation site (Figure 3A). During surveys 1–3, both pairs were observed in various stages of nest building, incubation, and/or caring for nestlings. During surveys 4–6, the two pairs were observed tending to their fledges. One pair had three fledges foraging with them and the other had two.

In addition CAGN were observed along the associated transmission, subtransmission, distribution, and telecommunications line areas (Figures 3B–3E). Four pairs of CAGN were consistently observed within the high quality CSS along the north side of Lincoln Avenue at the

base of the Montebello Hills oilfield (Figure 3C). The CSS in this area is USFWS-designated critical habitat for CAGN. These four CAGN pairs were observed on all six surveys in the same locations. Due to restricted access on private property, actual nests were not observed during surveys; however, all four CAGN pairs exhibited nesting behavior and three CAGN pairs were observed with fledges during later surveys. As such, three of these four pairs are mapped as CAGN nesting pairs with fledges and one is mapped as a nesting CAGN pair on Figure 3C.

In addition, one adult and one juvenile were observed foraging together south of N. Durfee Ave. during the final survey, but no nesting activity was observed during the first five surveys (Figure 3D). It is likely that these CAGN are primarily using the suitable habitat south of the survey area and occasionally forage in this area. This portion of the alignment is also within critical habitat for CAGN.

In summary, a total of six pairs of CAGN were observed nesting or exhibiting nesting behavior within the survey area during the 2015 breeding season surveys. One adult and one juvenile were also observed foraging within the survey area, but nesting behavior was not observed.

Please feel free to call me at (619) 508-3803 should you have any questions or concerns.

We certify that the information in this survey report and attached figures fully and accurately represent our work.

Sincerely,

Lee Ripma
TE-221290-3.1

Garrett Huffman
TE-20168A-0

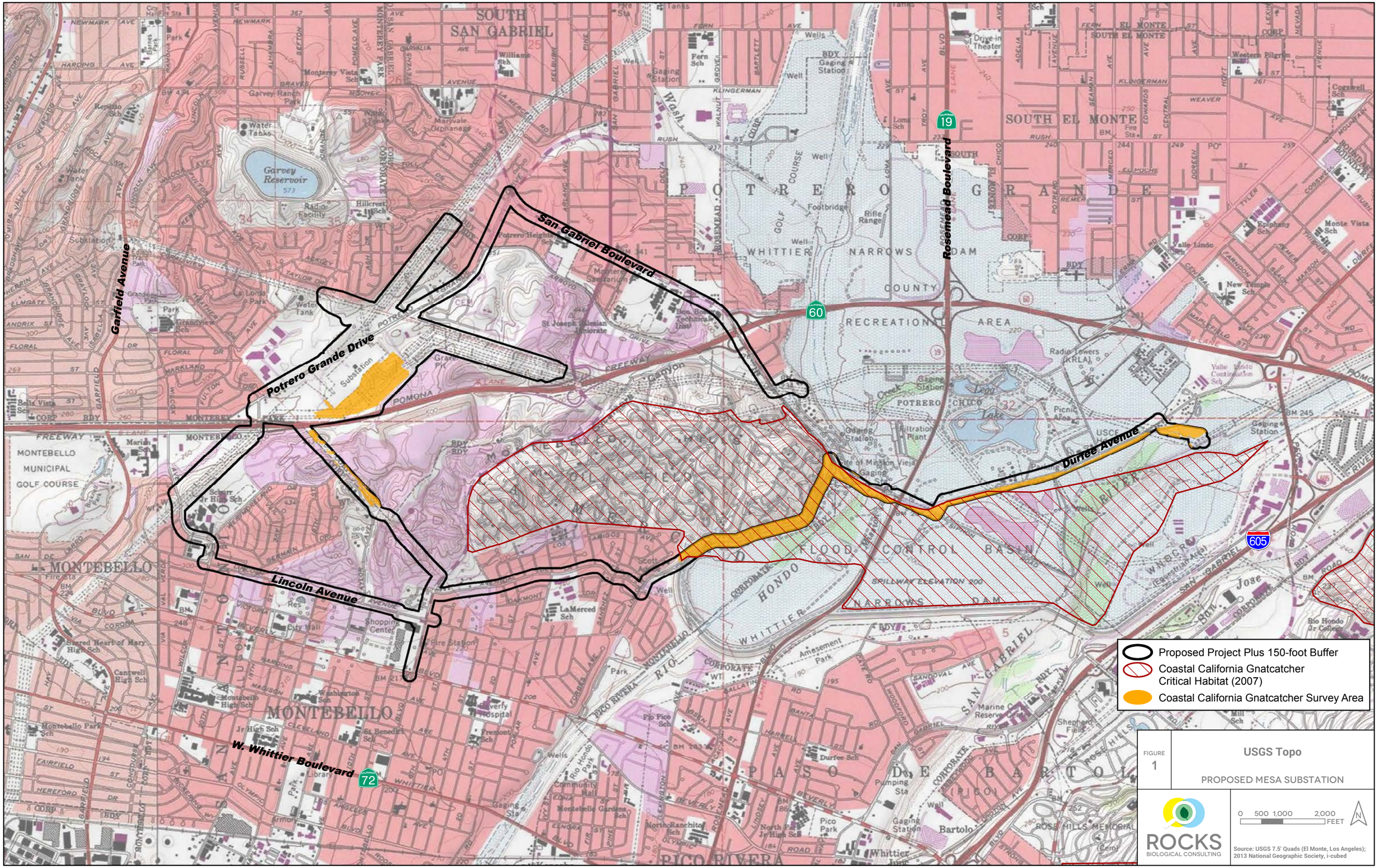
Enclosures: Appendix A – Bird Species Observed
Figure 1 – USGS Quadrangle Map
Figure 2 – Coastal California Gnatcatcher Survey Area Overview
Figures 3A – 3E - Coastal California Gnatcatcher 2015 Survey Results

Appendix A. Bird Species Observed During Coastal California Gnatcatcher Protocol Surveys at the Proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California

Common Name	Scientific Name
Allen's hummingbird	*Selasphorus sasin*
American kestrel	*Falco sparverius*
Anna's hummingbird	*Calypte anna*
ash-throated flycatcher	*Myiarchus cinerascens*
Bewick's wren	*Thryomanes bewickii*
black phoebe	*Sayornis nigricans*
black-headed grosbeak	*Pheucticus melanocephalus*
blue grosbeak	*Passerina caerulea*
brown-headed cowbird*	*Molothrus ater*
bushtit	*Psaltriparus minimus*
cactus wren	*Campylorhynchus brunneicapilus*
coastal California gnatcatcher	*Polioptila californica californica* (FT)
California quail	*Callipepla californica*
California thrasher	*Toxostoma redivivum*
California towhee	*Melozone crissalis*
Cassin's kingbird	*Tyrannus vociferans*
cedar waxwing	*Bombycilla cedrorum*
cliff swallow	*Petrochelidon pyrrhonota*
common raven	*Corvus corax*
common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii* (WL)
double-crested cormorant	*Phalacrocorax auritus*
European starling*	*Sturnus vulgaris*
great blue heron	*Ardea herodias*
great egret	*Ardea alba*
great-tailed grackle	*Quiscalus mexicanus*
hooded oriole	*Icterus cucullatus*
house finch	*Carpodacus mexicanus*
house wren	*Troglodytes aedon*
killdeer	*Charadrius vociferus*
Lazuli bunting	*Passerina amoena*
least Bell's vireo	*Vireo bellii pusillus* (FE, SE)
lesser goldfinch	*Spinus psaltria*
mallard	*Anas platyrhynchos*
mourning dove	*Zenaida macroura*
northern mockingbird	*Mimus polyglottos*
northern rough-winged swallow	*Stelgidopteryx serripennis*
Nuttall's woodpecker	*Picoides nuttallii*
orange-crowned warbler	*Oreothlypis celata*
pacific-slope flycatcher	*Empidonax difficilis*
phainopepla	*Phainopepla nitens*

red-tailed hawk	*Buteo jamaicensis*
rock pigeon*	*Columba livia*
rufous hummingbird	*Selasphorus rufus*
Say's phoebe	*Sayornis saya*
song sparrow	*Melospiza melodia*
spotted towhee	*Pipilo maculatus*
Swainson's thrush	*Catharus ustulatus*
warbling vireo	*Vireo gilvus*
western kingbird	*Tyrannus verticalis*
western scrub-jay	*Aphelocoma californica*
western tanager	*Piranga ludoviciana*
white-throated swift	*Aeronautes saxatalis*
Wilson's warbler	*Cardellina pusilla*
yellow warbler	*Setophaga petechia* (SSC)
yellow-breasted chat	*Icteria virens* (SSC)

FE: Listed as Endangered by USFWS
FT: Listed as Threatened by USFWS
SE: Listed as Endangered by California Department of Fish and Wildlife
WL: California Department of Fish and Wildlife Watch List
SSC: California Department of Fish and Wildlife Species of Special Concern
*Introduced Species


Garfield Avenue
Potrero Grande Drive
San Gabriel Boulevard
Rosemead Boulevard
Durfee Avenue
Lincoln Avenue
W. Whittier Boulevard
Proposed Project Plus 150-foot Buffer
Coastal California Gnatcatcher Critical Habitat (2007)
Coastal California Gnatcatcher Survey Area
FIGURE 1
USGS Topo
PROPOSED MESA SUBSTATION
ROCKS BIOLOGICAL CONSULTING
0 500 1,000 2,000 FEET
N
Source: USGS 7.5' Quads (El Monte, Los Angeles); 2013 National Geographic Society, i-cubed

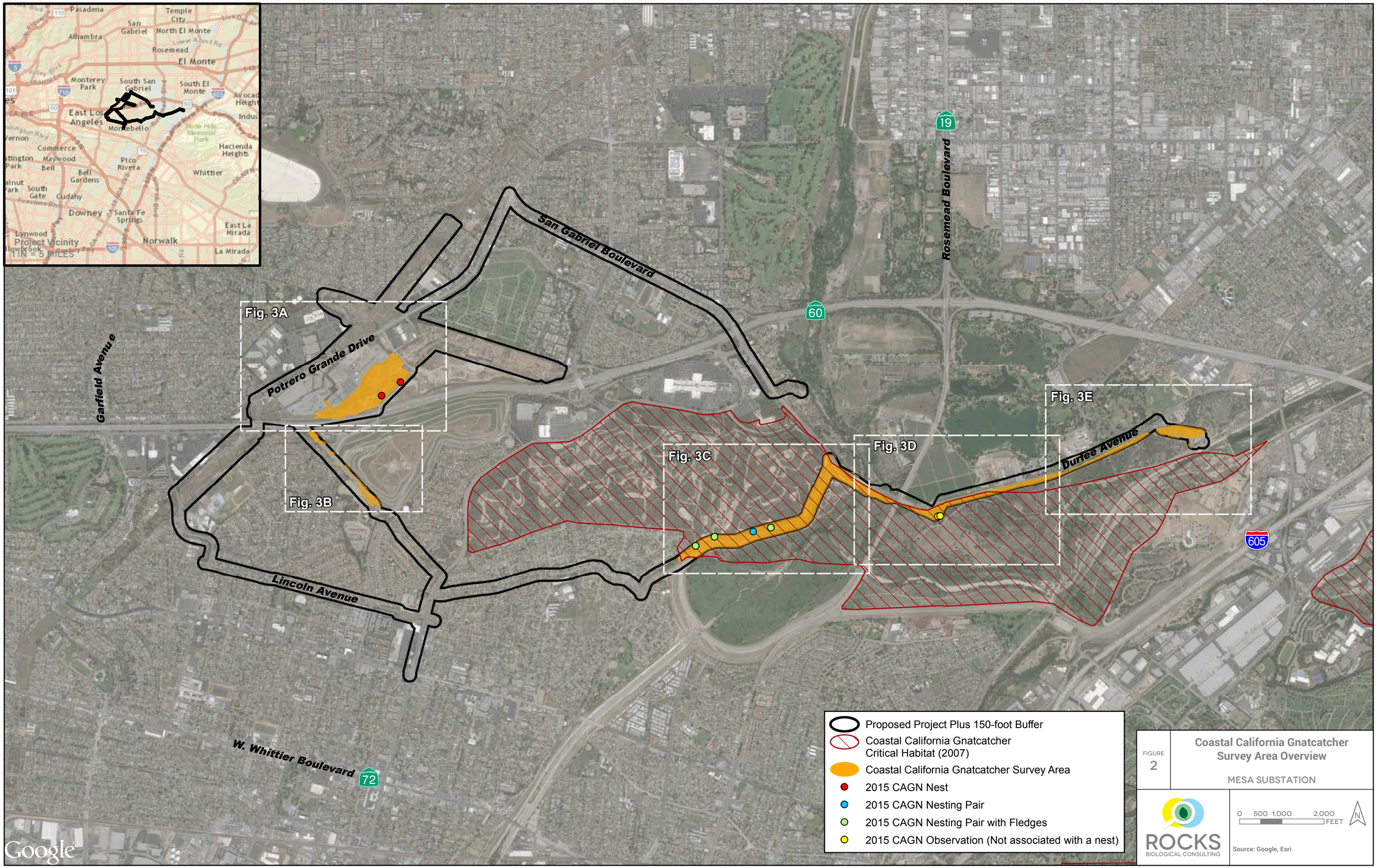


FIGURE 2

Coastal California Gnatcatcher Survey Area Overview

MESA SUBSTATION

ROCKS BIOLOGICAL CONSULTING

0 500 1,000 2,000 FEET

Source: Google, Esri

FIGURE 3A

Coastal California Gnatcatcher 2015 Survey Results

MESA SUBSTATION

ROCKS BIOLOGICAL CONSULTING

Source: Google

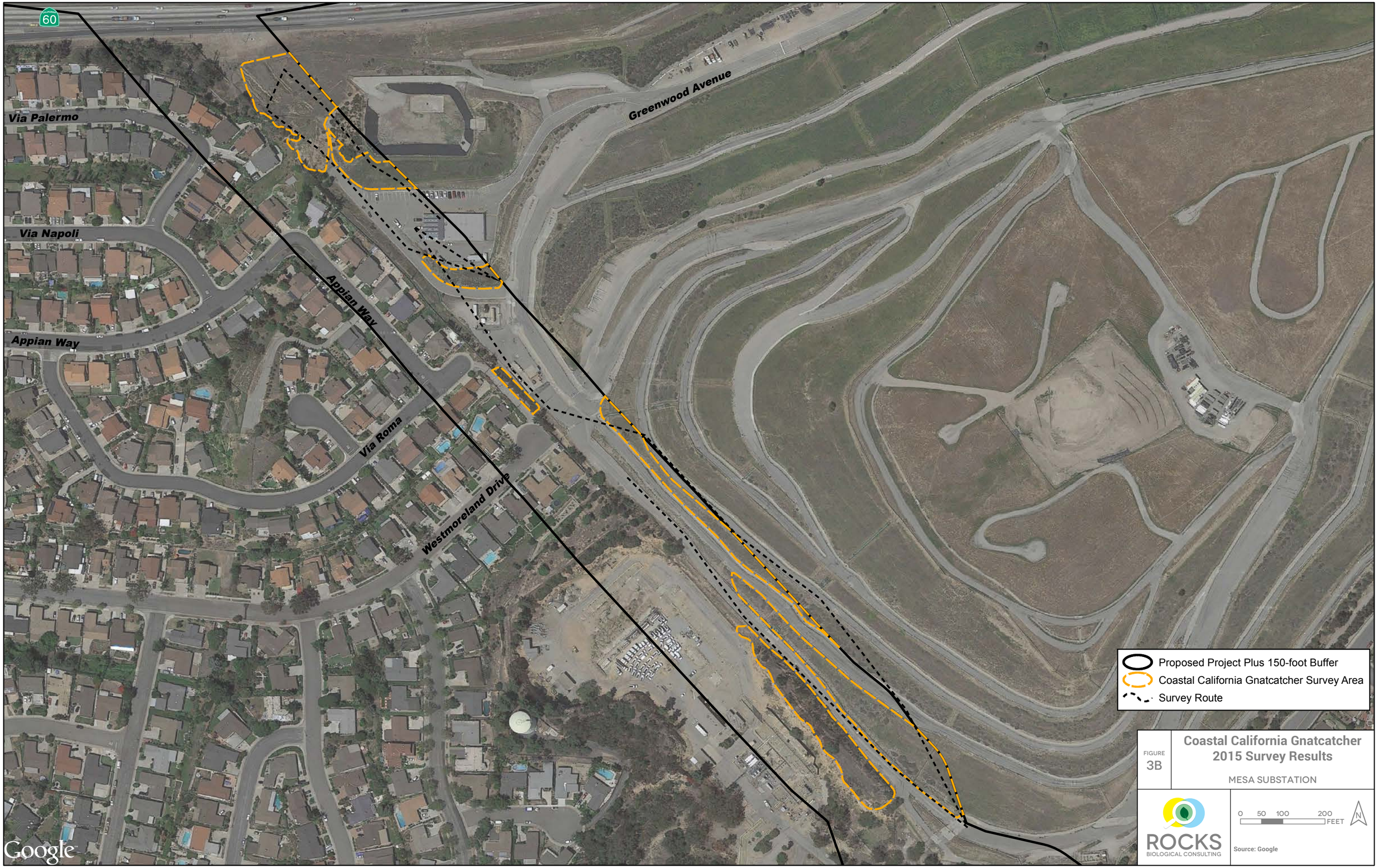


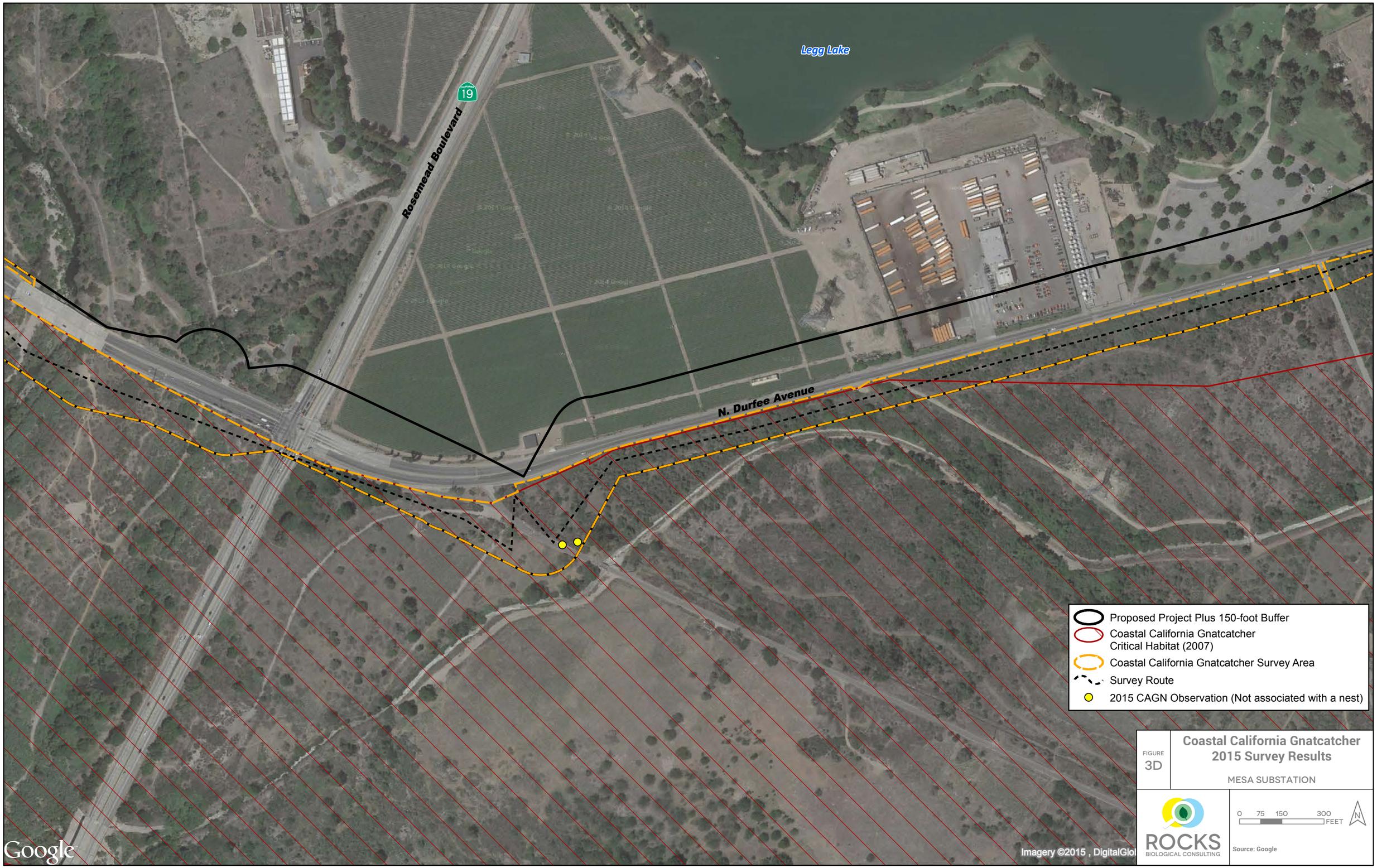
FIGURE 3B

Coastal California Gnatcatcher 2015 Survey Results

MESA SUBSTATION

ROCKS BIOLOGICAL CONSULTING

N. San Gabriel Boulevard
N. Lincoln Avenue
N. Lincoln Avenue
Proposed Project Plus 150-foot Buffer
Coastal California Gnatcatcher Critical Habitat (2007)
Coastal California Gnatcatcher Survey Area
Survey Route
2015 CAGN Nesting Pair
2015 CAGN Nesting Pair with Fledges
Google
Imagery ©2015 , DigitalGlo
FIGURE 3C
Coastal California Gnatcatcher 2015 Survey Results
MESA SUBSTATION
ROCKS BIOLOGICAL CONSULTING
0 75 150 300 FEET
N
Source: Google


Legg Lake
19
Rosemead Boulevard
N. Durfee Avenue
Proposed Project Plus 150-foot Buffer
Coastal California Gnatcatcher Critical Habitat (2007)
Coastal California Gnatcatcher Survey Area
Survey Route
2015 CAGN Observation (Not associated with a nest)
Google
Imagery ©2015 , DigitalGlo
FIGURE 3D
Coastal California Gnatcatcher 2015 Survey Results
MESA SUBSTATION
ROCKS BIOLOGICAL CONSULTING
0 75 150 300 FEET
N
Source: Google

Lexington Gallatin Road
Santa Anita Avenue
N. Durfee Avenue
San Gabriel River
Proposed Project Plus 150-foot Buffer
Coastal California Gnatcatcher Critical Habitat (2007)
Coastal California Gnatcatcher Survey Area
Survey Route
Google
Imagery ©2015 , DigitalGlo
FIGURE 3E
Coastal California Gnatcatcher 2015 Survey Results
MESA SUBSTATION
ROCKS BIOLOGICAL CONSULTING
0 75 150 300 FEET
N
Source: Google

ATTACHMENT B: REPRESENTATIVE PHOTOGRAPHS

ATTACHMENT B: REPRESENTATIVE PHOTOGRAPHS

Photograph 1:
Ruderal grassland and disturbed/developed vegetation at the Mesa Substation site.

Photograph 2:
Disturbed riparian vegetation at the Mesa Substation site.

Photograph 3:
Ruderal vegetation at the Mesa Substation site.

Photograph 4:
Mule fat scrub within the Proposed Project area.

Photograph 5:
Sparsely vegetated ephemeral channel at the Mesa Substation site.

Photograph 6:
Coastal sage scrub south of the Mesa Substation.

Photograph 7:
Dense coastal sage scrub north of Lincoln Avenue in the Montebello Hills area.

Photograph 8:
Coastal sage scrub north of Lincoln Avenue in the Montebello Hills area.

Photograph 9:
The Rio Hondo Corridor within the Proposed Project.

Photograph 10:
Sparse scrub habitat at the Whittier Narrows Recreation Area.

ATTACHMENT E: PHOTOGRAPHS OF IMPACTED WATER FEATURES

ATTACHMENT C: PHOTOGRAPHS OF IMPACTED WATER FEATURES

Photograph 1:
Overview of ephemeral drainage Feature 7-39-S-5, facing upstream/east.

Photograph 2:
Overview of ephemeral drainage Feature 7-39-S-5, facing downstream/west.

Photograph 3:
Ephemeral drainage Feature 7-39-S-5, facing upstream/east.

Photograph 4:
Ephemeral drainage Feature 7-39-S-5, facing downstream/west.

Photograph 5:
Ephemeral drainage Feature 11-94-S-5, facing downstream/west.

Photograph 6:
Ephemeral drainage Feature 11-94-S-5, facing south.

Photograph 7:
Western portion of ephemeral drainage Feature 11-138-S-100, facing upstream/north.

Photograph 8:
Ephemeral drainage Feature 11-138-S-100, facing upstream/east.

Photograph 9:
Ephemeral drainage Feature 11-138-S-100, facing downstream/west.

Photograph 10:
Confluence of ephemeral drainage Features 7-39-S-6 and 11-138-S-100, facing downstream/west.

Photograph 11:
Ephemeral drainage Feature 7-39-S-6, facing upstream/northeast.

Photograph 12:
Ephemeral drainage Feature 7-39-S-6, facing downstream/southwest.

Photograph 13:
Off-site continuation of ephemeral drainage Feature 7-39-S-6, facing upstream/east.

Photograph 14:
Off-site continuation of ephemeral drainage Feature 7-39-S-6 and culvert under State Route 60, facing downstream/west.

Photograph 15:
Ephemeral drainage Feature 7-39-S-1, facing downstream/west.

Photograph 16:
Ephemeral drainage Feature 7-39-S-1, facing downstream/west.

Photograph 17:
Ephemeral drainage Feature 7-39-S-1, facing upstream/northeast.

Photograph 18:
Ephemeral drainage Feature 7-39-S-1, facing downstream/southwest.

Photograph 19:
Ephemeral drainage Feature 7-39-S-2, facing downstream/northwest.

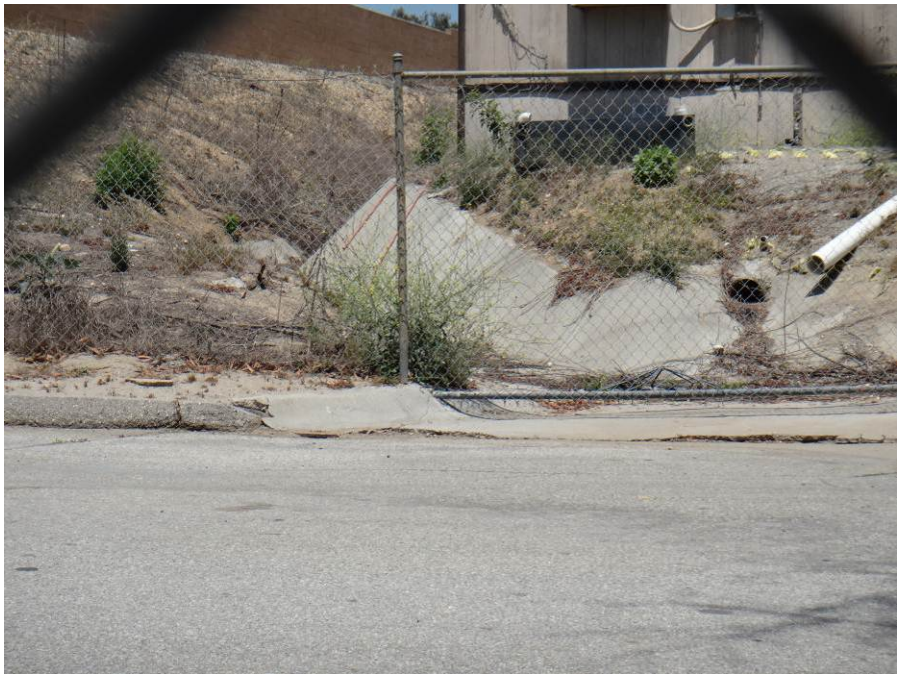
Photograph 20:
Ephemeral drainage Feature 7-39-S-2, facing upstream/southeast.

Photograph 21:
Ephemeral drainage Feature 7-39-S-3, taken from above the culvert, facing downstream/west.

Photograph 22:
Ephemeral drainage Feature 7-39-S-3, facing the culvert and upstream/east.

Photograph 23:
Culvert at upstream portion of ephemeral drainage Feature 11-136-S-101, facing north.

Photograph 24:
Ephemeral drainage Feature 11-136-S-101, facing downstream/south.



Photograph 25:
Upstream portion of ephemeral drainage Feature 7-38-S-1, taken from west side of Greenwood Road, facing upstream/east.

Photograph 26:
Ephemeral drainage Feature 11-136-S-100, facing upstream/north.

Photograph 27:
Ephemeral drainage Feature 11-136-S-100, facing downstream/south.

Photograph 28:
Northern dirt-lined portion of ephemeral drainage Feature 11-136-S-100, facing upstream/north.

Photograph 29:
Northern dirt-lined portion of ephemeral drainage Feature 11-136-S-100, facing downstream/south.

Photograph 30:
Intermittent drainage Feature 7-39-S-11 (Rio Hondo), facing upstream/northeast.

	Photograph 31: Intermittent drainage Feature 7-39-S-11 (Rio Hondo), facing downstream/southwest.

ATTACHMENT F: HYDROLOGY REPORT

MESA SUBSTATION
CITY OF MONTEREY PARK,
COUNTY OF LOS ANGELES,
CA

HYDROLOGY REPORT (EXISTING CONDITION) FOR MESA SUBSTATION

Thomas Guide 636 – C6, D5, D6

700 E. Potrero Grande Dr., Monterey Park, County of Los Angeles, California 91754

Stantec

Prepared for:
Southern California Edison
1 Innovation Way
Pomona, CA 91768

Prepared by:
Stantec Consulting Services Inc.
38 Technology Drive, Suite 100
Irvine, CA 92618-5312

REGISTERED PROFESSIONAL ENGINEER
DALE A. WATSON
No. C 59808
Exp. 12/31/15
CIVIL
STATE OF CALIFORNIA

October 1, 2014

MESA SUBSTATION
CITY OF MONTEREY PARK,
COUNTY OF LOS ANGELES, CA

HYDROLOGY REPORT (EXISTING CONDITION) FOR MESA SUBSTATION

Stantec

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DETENTION BASIN SIZING 6

Appendices

APPENDIX I – EXHIBITS

EXISTING HYDROLOGY MAP (WITH PROPOSED DETENTION BASIN)
ENVIRONMENTALLY SENSITIVE AREAS EXHIBIT

APPENDIX II – HYDROLOGY CALCULATIONS

FIGURE FROM LA COUNTY HYDROLOGY MANUAL
EXISTING CONDITIONS 50 YEAR FLOW CALCULATIONS

APPENDIX III – HYDROGRAPH

F0601 HYDROGRAPH DATA
HYDROGRAPH – DRAINAGE AREA A
HYDROGRAPH – DRAINAGE AREA B
HYDROGRAPH – DRAINAGE AREA C
HYDROGRAPH – DRAINAGE AREA D
HYDROGRAPH – DRAINAGE AREA E

Project Understanding

The purpose of this report is to provide hydrology calculations for the existing condition and determine the size of the detention basin required based on the calculated flowrate that needs to be retained onsite. This information will be used as reference for potential future Mesa Substation developments in Monterey Park, CA. The results from the hydrology calculations combined with the allowable discharge rate into the City's storm drain system will be used to compute the flow to be retained onsite and the size of detention basin(s) required to accommodate the flow.

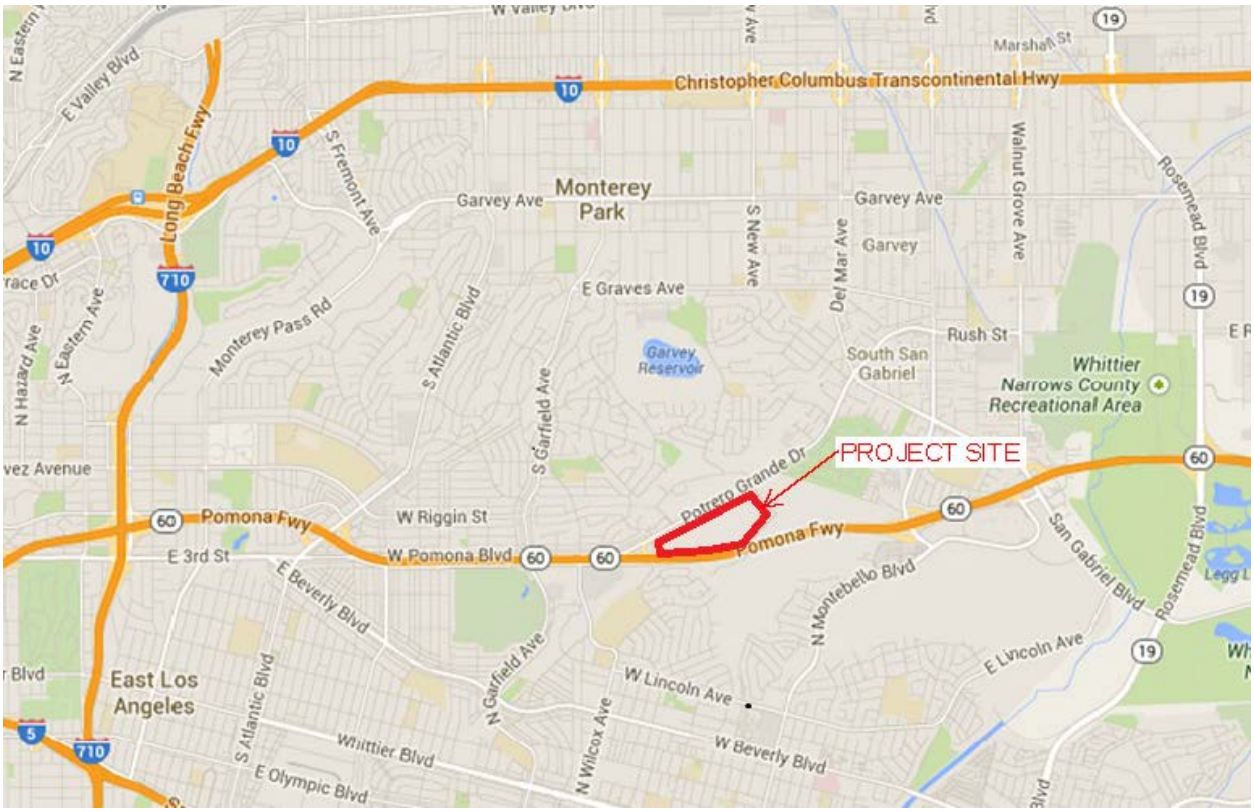


Figure 1.1 – *Project Location and limits*

GENERAL SITE INFORMATION

The project site is located at 700 E. Portrero Grande Drive, Monterey Park, California. It is bounded by Portrero Grande Drive to the north, E. Markland Drive to the west, the Pomona Freeway (SR-60) to the south and Greenwood Avenue to the east. The slope varies throughout the project site. The Mesa Substation is generally flat with gradients of 0.5% to 1.0%. Surrounding the substation is a combination of steep slopes consisting of 4:1 to 2:1 slopes and flatter areas utilized as access roads, drainage channels and usable land. The site drains to the west via surface flow, channels and culverts. There are two discharge points to the City's storm drain system on the west end of the property. The allowable flowrate to be conveyed into the City's storm drain system (Project No. 9950, Unit 4, Line A) is 1.23 cfs per acre of drainage area for the 50 year storm. Based on the available information at the time this report was prepared, it appears that runoff from a portion of the Pomona Freeway (SR-60) as well as drainage from the properties south of SR-60 and east of Greenwood Avenue is directed to the project site via culverts and ultimately conveyed to the south discharge point. The northern half of Mesa Substation appears to be retained onsite through infiltration with excess runoff conveyed to infiltration trenches north of the substation.

DRAINAGE DESIGN CONCEPT

This hydrology study for the Mesa Substation will evaluate approximately 200 acres of drainage area. The project site is divided into five drainage areas noted as A, B, C, D, E, F, G and H (see below).

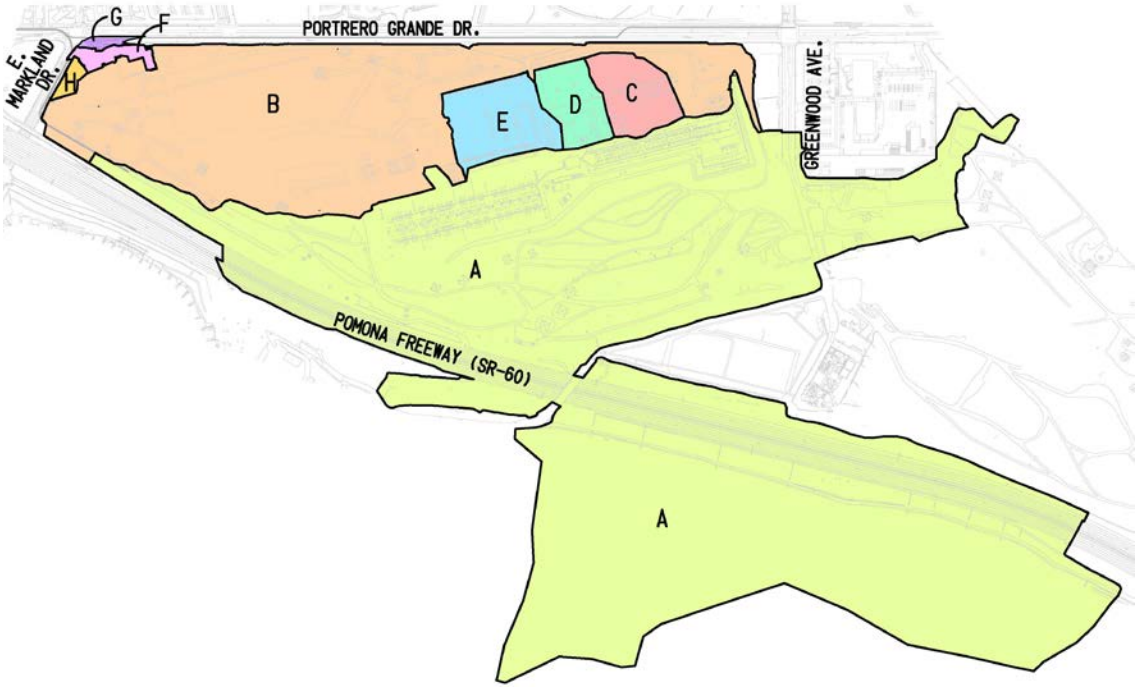


Figure 1.2 – *Existing Drainage Areas* (See Existing Conditions Hydrology Map Appendix I)

Based on a review of the existing conditions, Drainage Area “A” consists of 155.62 ac. This drainage area captures runoff to existing channels via surface flow and culverts, drains to the west and outlets to the City’s storm drain system. This drainage area includes runoff along the southern portion of the property, off-site runoff intercepted from the SR-60, and Operating Industries (OII) Landfill properties to the east and south. The surface covering consists of dirt, vegetation and paved roads. The OII property east of Greenwood Avenue is currently under rough grade condition as part of a future plan to construct a commercial center at the site.

Drainage Area “B” consists of 35.19 ac. This drainage area encompasses the Mesa Substation as well as vegetated areas and begins at the concrete gutter north of the Mesa Substation. The concrete gutter transitions to a vegetated channel and drains to the west. Runoff is collected to a series of storm ponds connected by culverts. The remaining runoff is ultimately conveyed to the City’s storm drain system at the west end of the property.

Drainage Areas “C”, “D”, and “E” consist of 2.9 ac, 2.4 ac, and 4.0 ac, respectively. These three drainage areas are within the substation and are relatively flat with gradients of 0.5% to 1.0%. The runoff is directed to infiltration trenches located on the north end of the substation and is contained onsite.

Drainage Areas “F” and “G” consist of 0.7 ac and 0.3 ac, respectively. These two areas consist of buildings and a parking lot and are mostly impervious. The runoff surface flows out of the two existing drive accesses to existing catch basins on Portrero Grande Dr. and E. Markland Dr.

Drainage Area “H” consists of 0.36 ac. This drainage area is a vegetated depression. The runoff is contained and the intent appears to be to detain and infiltrate the runoff.

Methodology

HYDROLOGIC METHODOLOGY

This hydrology study was prepared in accordance with the Los Angeles County Department of Public Works (LACDPW) Rational Hydrology and Sedimentation Manual dated December, 2006. The Tc Regression Method by the LACDPW was used to determine the time of concentration as well as the 50-year storm peak discharges for drainage areas with single subareas. For drainage areas with multiple subareas, CivilDesign F0601 Program Version 11.3 was used. Soil group boundary and rainfall zones were based on the current 2006 USGS hydrology map utilized by Los Angeles County Flood Control District. See Appendix II "Figures From Standard Manual".

Results Summary

HYDROLOGY

Existing Hydrology - Existing Conditions

The existing site consists of eight drainage areas (Areas A, B, C, D, E, F, G and H). Time of concentration (Tc) was calculated using the information from these sub-areas (See Existing Conditions Hydrology Map Appendix I). CivilDesign F0601 Program was used to calculate the peak discharge for drainage areas A and B. The Tc Regression Method was used to calculate the peak discharge for drainage areas C, D, E, F, G and H.

Table 3.1 illustrates the results from the existing conditions hydrology study. Refer to Appendix II for computer program hydrology calculation output for each of the drainage areas. This table also computes the allowable flowrate to be conveyed to the City's storm drain system. This is derived from the allowable flowrate of 1.23 cfs per acre of drainage area.

Table 3.1 –Existing Conditions *Hydrology Study Results*

Drainage Area	Area (Ac)	Total Q_{50} (cfs)	Allowable Q_{50} to City's SD (cfs)	Q_{50} Retain Onsite (cfs)
A	155.62	209.26	191.41	17.85
B	35.19	55.55	43.28	12.27
C	2.90	6.86	3.57	3.29
D	2.40	6.37	2.95	3.42
E	4.00	10.62	4.92	5.70
F	0.70	2.18	0	2.18 [1]
G	0.30	0.93	0	0.93 [1]
H	0.36	1.12	0	1.12 [2]

[1] Under the existing condition, the runoff is directed to the storm drain catch basins on Portrero Grande Drive and E. Markland Drive. With the drainage areas positioned in the northwest corner of the project site, it is assumed that the drainage pattern will remain the same for future developments. The flowrate from this drainage area is not included in the detention basin sizing.

[2] The drainage area is located on the westerly portion of the project site. It is assumed that it is unlikely that this drainage area will be redirected to the 2 discharge points that connect to the City's storm drain system as part of future developments. The flowrate from this drainage area is not included in the detention basin sizing.

DETENTION BASIN SIZING

The drainage areas included in the sizing of the detention basin are A, B, C, D and E.

For drainage areas A and B, a hydrograph was plotted using the data from F0601. The volume was calculated by determining the area bounded by the time in which the discharge to the City's storm drain system begins and ends. See Appendix III for F0601 data and hydrographs.

For drainage areas C, D and E, it is assumed that the duration of time in which the discharge to the City's storm drain system begins and ends will be 25 minutes. It is expected that the duration will end prior to the 25 minutes. Thus, the estimation is conservative. The volume is calculated by estimating the triangular area on a generic hydrograph (See Appendix III).

Volume Required:

Drainage Area	Required Volume (CF)
A	5,641
B	5,225
C	2,468
D	2,565
E	4,275
Total:	**20,174 CF**

Volume Provided: 30,400 cubic feet (Footprint = 9,444 square feet, 4.5 feet deep)
Refer to Appendix I – Existing Hydrology Map (With Proposed Detention Basin)

APPENDIX I

EXISTING HYDROLOGY MAP
(WITH PROPOSED DETENTION BASIN)

ENVIRONMENTALLY SENSITIVE AREAS EXHIBIT

EXISTING HYDROLOGY MAP
(WITH PROPOSED DETENTION BASIN)

STORM DRAIN PER
PROJECT NO. 9950

STORM DRAIN PER
PROJECT NO. 9950

POTRERO GRANDE DRIVE

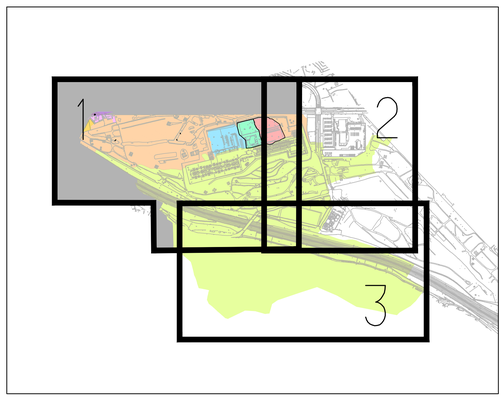
POTRERO GRANDE D

E. MARKLAND DRIVE

STORM DRAIN PER
PROJECT NO. 9950

FUTURE DETENTION BASIN
4.5 FEET DEEP
BASIN TOP AREA = 9,444 SF
BASIN SLOPE = 4H:1V
VOLUME PROVIDED = 30,400 CF

POMONA FREEWAY (SR-60)



GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 INCH = 80 FT.

PREPARED BY:

Stantec

38 TECHNOLOGY DRIVE, SUITE 100
IRVINE, CA 92618
949.923.6000

stantec.com

LOCATION: MESA SUBSTATION

EXISTING HYDROLOGY MAP
(WITH PROPOSED DETENTION BASIN)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

SHEET NO.
1

SCALE: AS NOTED

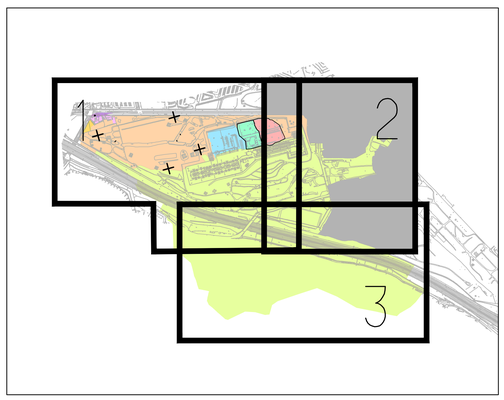
1 OF 1 SHTS.

STORM DRAIN PER
PROJECT NO. 5850

POTRERO GRANDE DRIVE

GREENWOOD AVENUE

POMONA FREEWAY (SR-60)



GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 INCH = 80 FT.

PREPARED BY:

Stantec
38 TECHNOLOGY DRIVE, SUITE 100
IRVINE, CA 92618
949.923.6000
stantec.com

LOCATION: MESA SUBSTATION

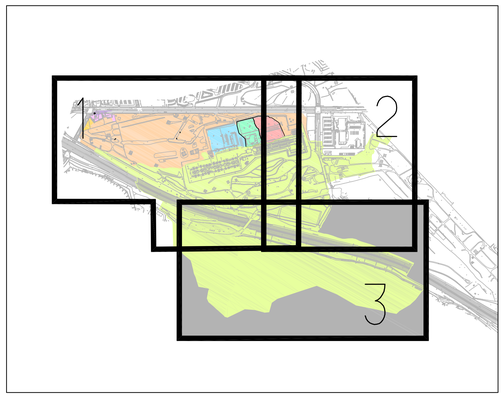
EXISTING HYDROLOGY MAP
(WITH PROPOSED DETENTION BASIN)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

SHEET NO.
2

SCALE: AS NOTED
1 OF 1 SHTS.

POMONA FREEWAY (SR-60)



GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 INCH = 80 FT.

PREPARED BY:

Stantec

38 TECHNOLOGY DRIVE, SUITE 100
IRVINE, CA 92618
949.923.6000

stantec.com

LOCATION: MESA SUBSTATION

EXISTING HYDROLOGY MAP
(WITH PROPOSED DETENTION BASIN)

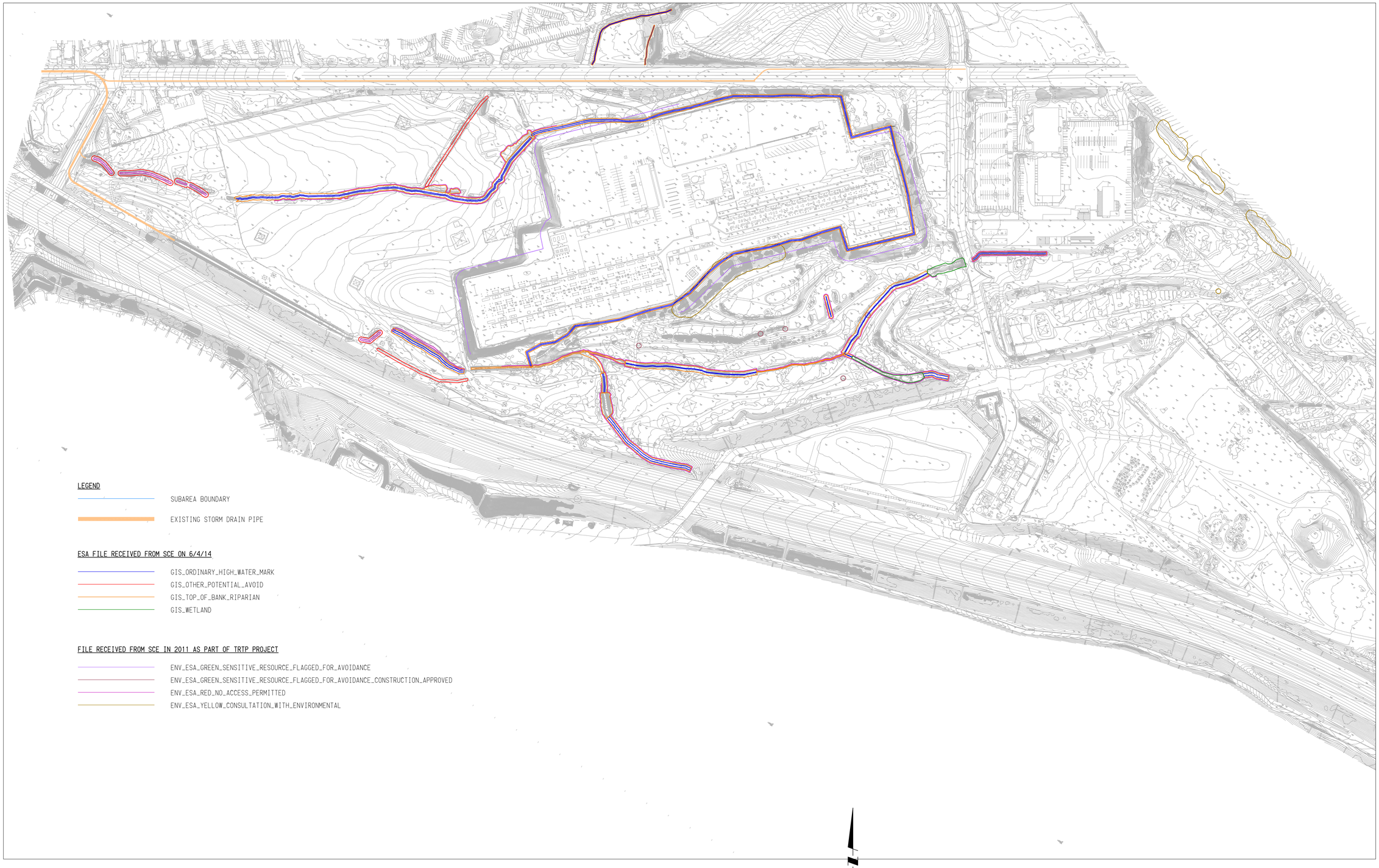
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

SHEET NO.
3

SCALE: AS NOTED

1 OF 1 SHTS.

ENVIRONMENTALLY SENSITIVE AREAS EXHIBIT



LEGEND

SUBAREA BOUNDARY

EXISTING STORM DRAIN PIPE

ESA FILE RECEIVED FROM SCE ON 6/4/14

GIS_ORDINARY_HIGH_WATER_MARK

GIS_OTHER_POTENTIAL_AVOID

GIS_TOP_OF_BANK_RIPARIAN

GIS_WETLAND

FILE RECEIVED FROM SCE IN 2011 AS PART OF TRTP PROJECT

ENV_ESA_GREEN_SENSITIVE_RESOURCE_FLAGGED_FOR_AVOIDANCE

ENV_ESA_GREEN_SENSITIVE_RESOURCE_FLAGGED_FOR_AVOIDANCE_CONSTRUCTION_APPROVED

ENV_ESA_RED_NO_ACCESS_PERMITTED

ENV_ESA_YELLOW_CONSULTATION_WITH_ENVIRONMENTAL

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 INCH = 150 FT.

PREPARED BY:

Stantec

38 TECHNOLOGY DRIVE, SUITE 100
IRVINE, CA 92618
949.923.6000

stantec.com

LOCATION: MESA SUBSTATION

ENVIRONMENTALLY SENSITIVE AREAS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

SHEET NO. 1

SCALE: AS NOTED

1 OF 1 SHTS.

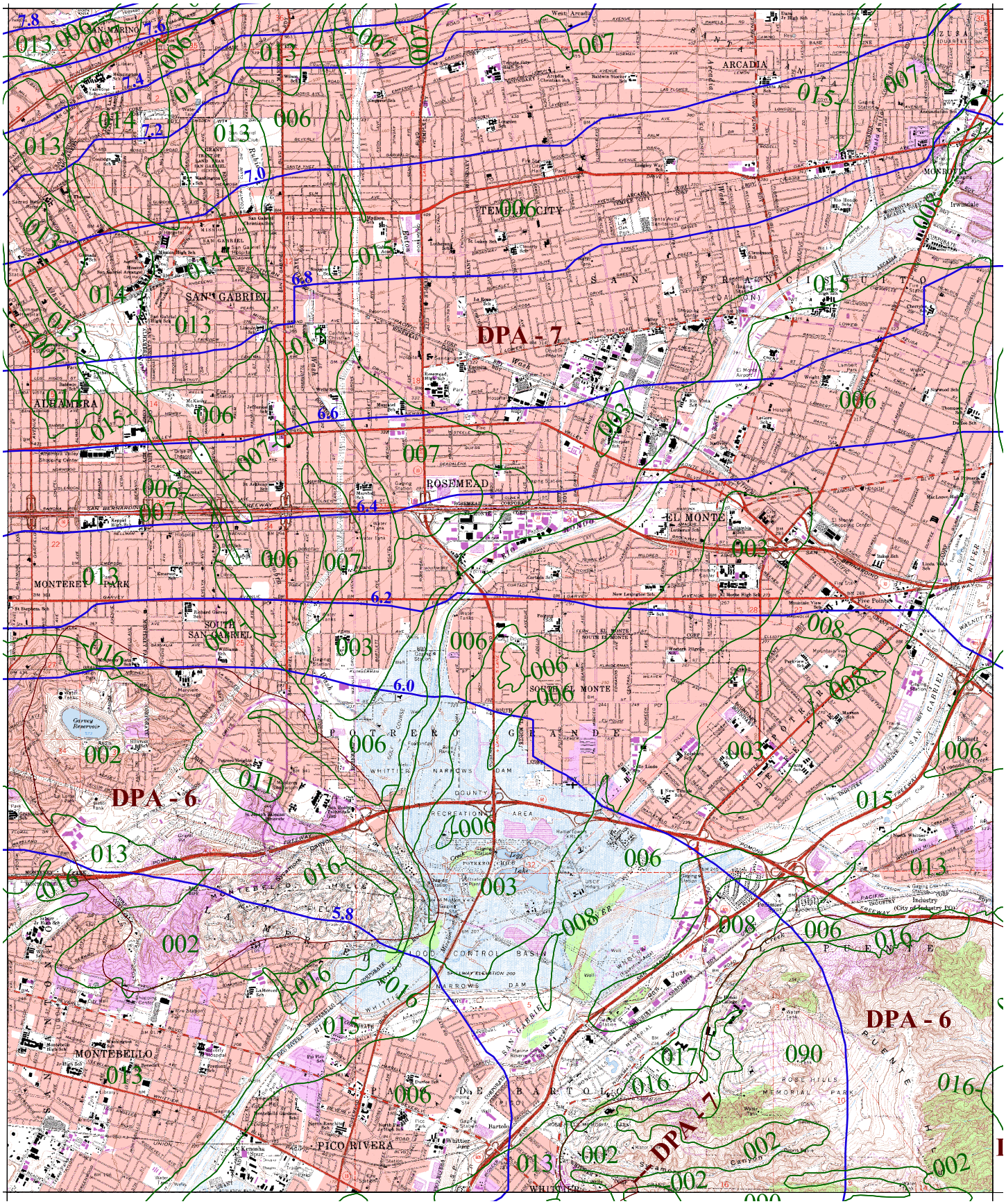
DRAWING: v:\projects\2042\455920.380\drawing\model_files\455920.380c-ex7001 (esa overlay).dwg PLOTTED: 10/2/2014 1:36 PM BY: Ito, Micky

* REVISE ON AUTOCAD SYSTEM ONLY *

APPENDIX II

FIGURE FROM LA COUNTY HYDROLOGY MANUAL
EXISTING CONDITIONS 50 YEAR FLOW CALCULATIONS

FIGURE FROM LA COUNTY HYDROLOGY MANUAL



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

EL MONTE
50-YEAR 24-HOUR ISOHYET

1-H1.20

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

EXISTING CONDITIONS 50 YEAR FLOW CALCULATIONS

```
006    1    1A   2 13 4.0 9A292  970 04000                G1
006    1    2A   2 38 3.6 5A292  297 03400
006    1    3A   2       90A294   67 13700
006    1    4A   2  2 1.0 5A292   24 03000
006    1    5A   2       90A294   48 09400
006    1    6A   2 20 5.8 8A292  320 03000
006    1    7B   2  0 0.5 5A292  253 10100
006    1    8D   2  0 5.5 9A292  896 02700
006    1    9BD  2  0  .0  A29                        1
006    1   10B   2  0 0.6 9A292  770 01200
006    1   11C  13  8  .9 5A292  431 02000
006    1   12BC  2  0  .0  A29                        1
006    1   13B   2  2 1.1 5A292  200 02500
006    1   14B  13 43  .1 5A292   69 10900
006    1   15AB 13  0  .0  A29                        1
006    1   16A  13  8 2.8 5A292  560 01400
006    1   17A  13       90A294   21 02900
006    1   18A  13 16 3.8 6A292  263 01900
006    1   19D  13 13  .8 6A292  665 08000
006    1   20D  13       90A294   16 09400
006    1   21D  13 36  .0 5A292   38 20000
006    1   22AD 13  0  .0  A29                        1
006    1   23A  13       90A294   20 02500
006    1   24A  13 21 0.7 5A292  134 00750
006    1   25B  13  852.813A292 2534 11000
006    1   26C  13 3021.517A292 2368 02000
006    1   27BC 13  0  .0  A29                        1
006    1   28B  13  0 1.2 5A292  394 07000
006    1   29C  13  0 3.7 5A292  476 15900
006    1   30C  13       90A294  155 03900
006    1   31BC 13  0  .0  A29                        1
006    1   32D  13 11 0.7 6A292  393 01500
006    1   33E  13 11 2.2 7A292  644 02900
006    1   34DE 13  0  .0  A29                        1
006    1   35D  13  7 0.5 5A292  456 05000
006    1   36BD 13     .0  A29                        1
006    1   37B  13  7  .3 5A292  221 02200
006    1   38B  13       90A294   25 04000
006    1   39B  13 14  .8 5A292   59 03400
006    1   40AB 13  0      A29                        1
006    1   41A  13  0  .7 5A292  283 00850
006    1   42E   2 66 3.710A292  978 01900
006    1   43E  13 75 8.513A292  969 00550
006    1   44F  13100 3.2 8A293  645 00230
006    1   45EF 13  0  .0  A29                        1
006    1   46E  13       90A29
006    1   47E  13  0  .3 5A292  308 05320
006    1   48AE 13     .0  A29                        1
006    1   49A  13  0  .3 5A292  249 00440
006    1   50A  13       90A294   27 09300
006    1   51A  13  8 2.1 7A292  337 00770
006    1   52A  13  6  .3 5A292   47 01700
006    1   53B  13 11 3.5 7A292  675 04700
006    1   54C  13100 7.023A293 3701 01700
006    1   55C  13       90A294   27 09300
006    1   56C  13  0 0.1 5A292   41 14600
006    1   57BC 13         A29                        1
```

```
006    1   58B  13 19 0.3 7A292   90 02800
006    1   59D  13 22 4.1 7A292  947 15300
006    1   60D  13       90A294  190 11800
006    1   61D  13  0 0.1 5A292   39 03200
006    1   62BD 13         A29                          1
006    1   63B  13 11 0.7 5A292  227 01700
006    1   64AB 13     .0  A29                          1
006    1   65E  13100 2.0 9A293  725 00800
006    1   66A  13 23 2.0 5A292  323 02800
006    1   67AE 13     .0  A29                          1
006    1   68A  13  6 2.0 6A292  561 00800                1  2
006    2  101A   2 21  .8 6A292  572 06400                 G1
006    2  102A   2       90A294   12 01700
006    2  103A   2 54 3.011A292  926 00500
006    2  104A  13       90A294   26 03800
006    2  105A  13 39 1.8 8A292  455 01100
006    2  106A  13 35 2.2 5A292  394 04900
006    2  107A  13       90A294   41 04900
006    2  108A  13 73 4.2 7A292  137 02600
006    2  109B  13 31  .8 5A292  417 05900
006    2  110B  13       90A294   20 14000
006    2  111B  13 16  .2 5A292   99 04200
006    2  112B  13       90A294   12 04200
006    2  113B  13  0  .1 5A292  141 03500
006    2  114B  13       90A294   14 00010
006    2  115B  13  0  .0 5A292   55 05500
006    2  116AB 13     .0  A29                          1
006    2  117A  13 54  .7 5A292   95 01050
006    2  118A  13       90A294   34 01470
006    2  119A  13  0 5.5 9A292  676 01780
006    2  120A  13       90A294   53 00940
006    2  121A  13  0  .1 5A292  100 05000
006    2  122A  13       90A294   26 00010
006    2  123A  13  0 8.911A292   33 00010
006    2  124A  13 14 1.7 6A292  143 04200
006    2  125A  13  6 5.2 9A292  126 04400                1  2
```

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lasoilx.dat
MESA SUBSTATION - EXISTING CONDITION - 50YR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	1A	4.0	9.12	4.0	9.12	2	970.	.04000	.00	.00	0.	2	9	A29	.13
1	2A	3.6	11.21	7.6	15.96	2	297.	.03400	.00	.00	0.	2	5	A29	.38
1	3A	.0	.00	7.6	15.33	4	67.	.13700	2.00	.00	0.	2	90	A29	.00
1	4A	1.0	3.11	8.6	17.59	2	24.	.03000	.00	.00	0.	2	5	A29	.02
1	5A	.0	.00	8.6	17.58	4	48.	.09400	2.00	.00	0.	2	90	A29	.00
1	6A	5.8	14.02	14.4	31.30	2	320.	.03000	.00	.00	0.	2	8	A29	.20
1	7B	.5	1.56	.5	1.56	2	253.	.10100	.00	.00	0.	2	5	A29	.00
1	8D	5.5	12.48	5.5	12.48	2	896.	.02700	.00	.00	0.	2	9	A29	.00

```
*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
*      1    9B  TB 1154 QB     1.44 QBD     8.72 QD     7.28       1    9D  TD 1159 QD    11.30 QDB    11.84 QB      .54   *
*                                  1    9BD TBD 1159 QBD    11.84 QB      .54 QD    11.30                                *
*****************************************************************************************************************
```

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	9BD	5.5	11.30	6.0	11.84	0	0.	.00000	.00	.00	0.	2	0	A29	.00
1	10B	.6	1.36	6.6	12.87	2	770.	.01200	.00	.00	0.	2	9	A29	.00
1	11C	.9	2.94	.9	2.94	2	431.	.02000	.00	.00	0.	13	5	A29	.08

```
*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
*      1   12B  TB 1164 QB    11.55 QBC    12.20 QC      .65       1   12C  TC 1157 QC     2.30 QCB     9.07 QB     6.77   *
*                                  1   12BC TBC 1164 QBC    12.20 QB    11.55 QC      .65                                 *
*****************************************************************************************************************
```

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	12BC	.9	2.30	7.5	12.20	0	0.	.00000	.00	.00	0.	2	0	A29	.00
1	13B	1.1	3.42	8.6	12.68	2	200.	.02500	.00	.00	0.	2	5	A29	.02
1	14B	.1	.32	8.7	12.64	2	69.	.10900	.00	.00	0.	13	5	A29	.43

```
*****************************************************************************************************************
*                                                CONFLUENCE Q'S                                                 *
*      1   15A  TA 1156 QA    31.03 QAB    41.16 QB    10.14       1   15B  TB 1165 QB    12.64 QBA    25.77 QA    13.12   *
*                                  1   15AB TAB 1156 QAB    41.16 QA    31.03 QB    10.14                                *
*****************************************************************************************************************
```

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	15AB	8.7	12.64	23.1	41.16	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1	16A	2.8	9.16	25.9	46.96	2	560.	.01400	.00	.00	0.	13	5	A29	.08
1	17A	.0	.00	25.9	44.71	4	21.	.02900	2.25	.00	0.	13	90	A29	.00
1	18A	3.8	11.08	29.7	49.73	2	263.	.01900	.00	.00	0.	13	6	A29	.16
1	19D	.8	2.33	.8	2.33	2	665.	.08000	.00	.00	0.	13	6	A29	.13
1	20D	.0	.00	.8	2.05	4	16.	.09400	2.00	.00	0.	13	90	A29	.00
1	21D	.0	.00	.8	2.05	2	38.	.20000	.00	.00	0.	13	5	A29	.36

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lasoilx.dat
MESA SUBSTATION - EXISTING CONDITION - 50YR STORM DAY 4

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
CONFLUENCE Q'S														
1 22A TA 1158 QA	49.17 QAD	51.07 QD	1.91	1 22D TD 1157 QD	2.04 QDA	50.11 QA	48.07							
1 22AD TAD 1158 QAD	51.07 QA	49.17 QD	1.91											

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1 22AD	.8	2.04	30.5	51.07	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1 23A	.0	.00	30.5	51.07	4	20.	.02500	2.25	.00	0.	13	90	A29	.00
1 24A	.7	2.27	31.2	51.50	2	134.	.00750	.00	.00	0.	13	5	A29	.21
1 25B	52.8	99.55	52.8	99.55	2	2534.	.11000	.00	.00	0.	13	13	A29	.08
1 26C	21.5	35.03	21.5	35.03	2	2368.	.02000	.00	.00	0.	13	17	A29	.30

CONFLUENCE Q'S														
1 27B TB 1159 QB	95.46 QBC	113.75 QC	18.30	1 27C TC 1169 QC	29.64 QCB	67.68 QB	38.04							
1 27BC TBC 1161 QBC	116.47 QB	93.90 QC	22.57											

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1 27BC	21.5	29.64	74.3	116.47	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1 28B	1.2	3.94	75.5	116.79	2	394.	.07000	.00	.00	0.	13	5	A29	.00
1 29C	3.7	12.15	3.7	12.15	2	476.	.15900	.00	.00	0.	13	5	A29	.00
1 30C	.0	.00	3.7	11.29	4	155.	.03900	2.00	.00	0.	13	90	A29	.00

CONFLUENCE Q'S														
1 31B TB 1162 QB	116.50 QBC	117.94 QC	1.43	1 31C TC 1154 QC	11.03 QCB	78.43 QB	67.40							
1 31BC TBC 1161 QBC	118.23 QB	116.37 QC	1.87											

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1 31BC	3.7	11.03	79.2	118.23	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1 32D	.7	2.04	.7	2.04	2	393.	.01500	.00	.00	0.	13	6	A29	.11
1 33E	2.2	5.89	2.2	5.89	2	644.	.02900	.00	.00	0.	13	7	A29	.11

CONFLUENCE Q'S														
1 34D TD 1157 QD	1.68 QDE	6.82 QE	5.14	1 34E TE 1158 QE	5.20 QED	6.87 QD	1.67							
1 34DE TDE 1158 QDE	6.87 QD	1.67 QE	5.20											

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1 34DE	2.2	5.20	2.9	6.87	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1 35D	.5	1.64	3.4	7.43	2	456.	.05000	.00	.00	0.	13	5	A29	.07

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lasoilx.dat
MESA SUBSTATION - EXISTING CONDITION - 50YR STORM DAY 4

```
                SUBAREA   SUBAREA     TOTAL   TOTAL  CONV   CONV     CONV     CONV   CONV   CONTROL SOIL      RAIN  PCT
   LOCATION     AREA(Ac)  Q(CFS)    AREA(Ac)  Q(CFS) TYPE  LNGTH(Ft) SLOPE  SIZE(Ft)   Z     Q(CFS) NAME  TC  ZONE  IMPV
*****************************************************************************************************************************
*                                                   CONFLUENCE Q'S                                                          *
*      1   36B  TB 1161 QB   118.23 QBD   124.90 QD     6.66       1   36D  TD 1159 QD     7.19 QDB   122.88 QB   115.69   *
*                                 1   36BD TBD 1161 QBD   124.90 QB   118.23 QD     6.66                                   *
*****************************************************************************************************************************
                SUBAREA   SUBAREA     TOTAL   TOTAL  CONV   CONV     CONV     CONV   CONV   CONTROL SOIL      RAIN  PCT
   LOCATION     AREA(Ac)  Q(CFS)    AREA(Ac)  Q(CFS) TYPE  LNGTH(Ft) SLOPE  SIZE(Ft)   Z     Q(CFS) NAME  TC  ZONE  IMPV
      1   36BD    3.4       7.19      82.6    124.90   0       0.   .00000      .00   .00        0.   13   0   A29   .00
      1   37B      .3        .98      82.9    124.98   2     221.   .02200      .00   .00        0.   13   5   A29   .07
      1   38B      .0        .00      82.9    124.65   4      25.   .04000     3.00   .00        0.   13  90   A29   .00
      1   39B      .8       2.61      83.7    124.89   2      59.   .03400      .00   .00        0.   13   5   A29   .14
*****************************************************************************************************************************
*                                                   CONFLUENCE Q'S                                                          *
*      1   40A  TA 1159 QA    51.14 QAB   171.73 QB   120.59       1   40B  TB 1162 QB   124.84 QBA   170.37 QA    45.53   *
*                                 1   40AB TAB 1160 QAB   173.60 QA    50.20 QB   123.40                                  *
*****************************************************************************************************************************
                SUBAREA   SUBAREA     TOTAL   TOTAL  CONV   CONV     CONV     CONV   CONV   CONTROL SOIL      RAIN  PCT
   LOCATION     AREA(Ac)  Q(CFS)    AREA(Ac)  Q(CFS) TYPE  LNGTH(Ft) SLOPE  SIZE(Ft)   Z     Q(CFS) NAME  TC  ZONE  IMPV
      1   40AB   83.7     124.84     114.9    173.60   0       0.   .00000      .00   .00        0.   13   0   A29   .00
      1   41A      .7       2.30     115.6    173.84   2     283.   .00850      .00   .00        0.   13   5   A29   .00
      1   42E     3.7       8.20       3.7      8.20   2     978.   .01900      .00   .00        0.    2  10   A29   .66
      1   43E     8.5      16.59      12.2     22.16   2     969.   .00550      .00   .00        0.   13  13   A29   .75
      1   44F     3.2       7.91       3.2      7.91   3     645.   .00230      .00   .00        0.   13   8   A29  1.00
*****************************************************************************************************************************
*                                                   CONFLUENCE Q'S                                                          *
*      1   45E  TE 1167 QE    19.63 QEF    24.48 QF     4.85       1   45F  TF 1162 QF     6.33 QFE    23.37 QE    17.04   *
*                                 1   45EF TEF 1165 QEF    24.81 QE    19.14 QF     5.67                                   *
*****************************************************************************************************************************
                SUBAREA   SUBAREA     TOTAL   TOTAL  CONV   CONV     CONV     CONV   CONV   CONTROL SOIL      RAIN  PCT
   LOCATION     AREA(Ac)  Q(CFS)    AREA(Ac)  Q(CFS) TYPE  LNGTH(Ft) SLOPE  SIZE(Ft)   Z     Q(CFS) NAME  TC  ZONE  IMPV
      1   45EF    3.2       6.33      15.4     24.81   0       0.   .00000      .00   .00        0.   13   0   A29   .00
      1   46E      .0        .00      15.4     24.81   0       0.   .00000      .00   .00        0.   13  90   A29   .00
      1   47E      .3        .99      15.7     24.83   2     308.   .05320      .00   .00        0.   13   5   A29   .00
*****************************************************************************************************************************
*                                                   CONFLUENCE Q'S                                                          *
*      1   48A  TA 1162 QA   172.80 QAE   195.16 QE    22.36       1   48E  TE 1166 QE    24.77 QEA   180.96 QA   156.18   *
*                                 1   48AE TAE 1162 QAE   195.16 QA   172.80 QE    22.36                                   *
*****************************************************************************************************************************
                SUBAREA   SUBAREA     TOTAL   TOTAL  CONV   CONV     CONV     CONV   CONV   CONTROL SOIL      RAIN  PCT
   LOCATION     AREA(Ac)  Q(CFS)    AREA(Ac)  Q(CFS) TYPE  LNGTH(Ft) SLOPE  SIZE(Ft)   Z     Q(CFS) NAME  TC  ZONE  IMPV
      1   48AE   15.7      24.77     131.3    195.16   0       0.   .00000      .00   .00        0.   13   0   A29   .00
      1   49A      .3        .99     131.6    195.22   2     249.   .00440      .00   .00        0.   13   5   A29   .00
      1   50A      .0        .00     131.6    194.13   4      27.   .09300     3.00   .00        0.   13  90   A29   .00
      1   51A     2.1       5.63     133.7    194.54   2     337.   .00770      .00   .00        0.   13   7   A29   .08
      1   52A      .3        .98     134.0    193.82   2      47.   .01700      .00   .00        0.   13   5   A29   .06
      1   53B     3.5       9.38       3.5      9.38   2     675.   .04700      .00   .00        0.   13   7   A29   .11
```

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lasoilx.dat
MESA SUBSTATION - EXISTING CONDITION - 50YR STORM DAY 4

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	54C	7.0	10.62	7.0	10.62	3	3701.	.01700	.00	.00	0.	13	23	A29	1.00
1	55C	.0	.00	7.0	8.78	4	27.	.09300	2.00	.00	0.	13	90	A29	.00
1	56C	.1	.33	7.1	8.78	2	41.	.14600	.00	.00	0.	13	5	A29	.00

****
* CONFLUENCE Q'S *
* 1 57B TB 1157 QB 8.69 QBC 13.26 QC 4.58 1 57C TC 1181 QC 8.78 QCB 9.10 QB .32 *
* 1 57BC TBC 1157 QBC 13.26 QB 8.69 QC 4.58 *
****

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	57BC	7.1	8.78	10.6	13.26	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1	58B	.3	.80	10.9	13.81	2	90.	.02800	.00	.00	0.	13	7	A29	.19
1	59D	4.1	10.96	4.1	10.96	2	947.	.15300	.00	.00	0.	13	7	A29	.22
1	60D	.0	.00	4.1	10.57	4	190.	.11800	2.00	.00	0.	13	90	A29	.00
1	61D	.1	.33	4.2	10.67	2	39.	.03200	.00	.00	0.	13	5	A29	.00

****
* CONFLUENCE Q'S *
* 1 62B TB 1157 QB 13.80 QBD 24.34 QD 10.54 1 62D TD 1156 QD 10.59 QDB 24.09 QB 13.49 *
* 1 62BD TBD 1157 QBD 24.34 QB 13.80 QD 10.54 *
****

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	62BD	4.2	10.59	15.1	24.34	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1	63B	.7	2.29	15.8	25.36	2	227.	.01700	.00	.00	0.	13	5	A29	.11

****
* CONFLUENCE Q'S *
* 1 64A TA 1165 QA 193.65 QAB 205.86 QB 12.21 1 64B TB 1158 QB 24.95 QBA 140.41 QA 115.46 *
* 1 64AB TAB 1165 QAB 205.86 QA 193.65 QB 12.21 *
****

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	64AB	15.8	24.95	149.8	205.86	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1	65E	2.0	4.69	2.0	4.69	3	725.	.00800	.00	.00	0.	13	9	A29	1.00
1	66A	2.0	6.49	151.8	206.23	2	323.	.02800	.00	.00	0.	13	5	A29	.23

****
* CONFLUENCE Q'S *
* 1 67A TA 1166 QA 205.65 QAE 208.77 QE 3.12 1 67E TE 1161 QE 4.05 QEA 178.53 QA 174.47 *
* 1 67AE TAE 1165 QAE 209.01 QA 205.60 QE 3.41 *
****

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
1	67AE	2.0	4.05	153.8	209.01	0	0.	.00000	.00	.00	0.	13	0	A29	.00
1	68A	2.0	5.85	155.8	209.26	2	561.	.00800	.00	.00	0.	13	6	A29	.06

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild\lasoilx.dat
MESA SUBSTATION - EXISTING CONDITION - 50YR STORM DAY 4

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
2 101A	.8	2.24	.8	2.24	2	572.	.06400	.00	.00	0.	2	6	A29	.21
2 102A	.0	.00	.8	2.01	4	12.	.01700	2.00	.00	0.	2	90	A29	.00
2 103A	3.0	6.29	3.8	8.17	2	926.	.00500	.00	.00	0.	2	11	A29	.54
2 104A	.0	.00	3.8	6.16	4	26.	.03800	2.00	.00	0.	13	90	A29	.00
2 105A	1.8	4.48	5.6	7.23	2	455.	.01100	.00	.00	0.	13	8	A29	.39
2 106A	2.2	7.10	7.8	11.62	2	394.	.04900	.00	.00	0.	13	5	A29	.35
2 107A	.0	.00	7.8	11.14	4	41.	.04900	2.00	.00	0.	13	90	A29	.00
2 108A	4.2	11.09	12.0	22.00	2	137.	.02600	.00	.00	0.	13	7	A29	.73
2 109B	.8	2.59	.8	2.59	2	417.	.05900	.00	.00	0.	13	5	A29	.31
2 110B	.0	.00	.8	2.29	4	20.	.14000	2.00	.00	0.	13	90	A29	.00
2 111B	.2	.65	1.0	2.76	2	99.	.04200	.00	.00	0.	13	5	A29	.16
2 112B	.0	.00	1.0	2.70	4	12.	.04200	2.00	.00	0.	13	90	A29	.00
2 113B	.1	.33	1.1	2.93	2	141.	.03500	.00	.00	0.	13	5	A29	.00
2 114B	.0	.00	1.1	2.87	4	14.	.00010	2.25	.00	0.	13	90	A29	.00
2 115B	.0	.00	1.1	2.83	2	55.	.05500	.00	.00	0.	13	5	A29	.00

```
*                                                CONFLUENCE Q'S                                                          *
*      2  116A  TA 1155 QA    21.71 QAB    24.17 QB     2.46       2  116B  TB 1157 QB     2.82 QBA    22.59 QA    19.77   *
*                                  2  116AB TAB 1155 QAB    24.17 QA    21.71 QB     2.46                                 *
```

LOCATION	SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	RAIN ZONE	PCT IMPV
2 116AB	1.1	2.82	13.1	24.17	0	0.	.00000	.00	.00	0.	13	0	A29	.00
2 117A	.7	2.24	13.8	25.82	2	95.	.01050	.00	.00	0.	13	5	A29	.54
2 118A	.0	.00	13.8	25.53	4	34.	.01470	2.00	.00	0.	13	90	A29	.00
2 119A	5.5	12.90	19.3	37.79	2	676.	.01780	.00	.00	0.	13	9	A29	.00
2 120A	.0	.00	19.3	35.70	4	53.	.00940	2.50	.00	0.	13	90	A29	.00
2 121A	.1	.33	19.4	35.70	2	100.	.05000	.00	.00	0.	13	5	A29	.00
2 122A	.0	.00	19.4	35.54	4	26.	.00010	5.50	.00	0.	13	90	A29	.00
2 123A	8.9	18.57	28.3	51.06	2	33.	.00010	.00	.00	0.	13	11	A29	.00
2 124A	1.7	4.96	30.0	50.34	2	143.	.04200	.00	.00	0.	13	6	A29	.14
2 125A	5.2	12.20	35.2	55.55	2	126.	.04400	.00	.00	0.	13	9	A29	.06

Tc CALCULATIONS

USING REGRESSION METHOD

Project	Subarea	Area (acres	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft	Isohyet (in.	Tc-calculat	Intensity (i	Cu	Cd	Flowrate (c
MESA	1A	4	0.13	50	2	970	0.04	5.8	9	2.63	0.87	0.87	9.15
MESA	2A	3.6	0.38	50	2	558	0.07	5.8	5	3.46	0.89	0.89	11.09
MESA	4A	1	0.02	50	2	146	0.01	5.8	5	3.46	0.89	0.89	3.08
MESA	6A	5.8	0.2	50	2	852	0.039	5.8	8	2.77	0.87	0.88	14.14
MESA	7B	0.5	0	50	2	253	0.101	5.8	5	3.46	0.89	0.89	1.54
MESA	8D	5.5	8	50	2	896	0.027	5.8	9	2.63	0.87	0.9	13.02
MESA	10B	0.6	0	50	2	770	0.012	5.8	9	2.63	0.87	0.87	1.37
MESA	11C	0.9	0.08	50	13	502	0.088	5.8	5	3.46	0.95	0.9	2.8
MESA	13B	1.1	0	50	2	387	0.104	5.8	5	3.46	0.89	0.89	3.39
MESA	14B	0.1	0.43	50	13	164	0.116	5.8	5	3.46	0.95	0.9	0.31
MESA	16A	2.8	0.08	50	13	454	0.066	5.8	5	3.46	0.95	0.9	8.72
MESA	18A	3.8	0.16	50	13	608	0.044	5.8	6	3.18	0.93	0.9	10.88
MESA	19D	0.8	0.13	50	13	665	0.082	5.8	6	3.18	0.93	0.9	2.29
MESA	21D	0.02	0.36	50	13	84	0.13	5.8	5	3.46	0.95	0.9	0.06
MESA	24A	0.7	0.21	50	13	477	0.043	5.8	5	3.46	0.95	0.9	2.18
MESA	25B	52.8	0.08	50	13	2534	0.11	5.8	13	2.21	0.85	0.85	99.18
MESA	26C	21.5	0.3	50	13	2436	0.026	5.8	17	1.95	0.81	0.84	35.22
MESA	28B	1.2	0	50	13	455	0.114	5.8	5	3.46	0.95	0.9	3.74
MESA	29C	3.7	0	50	13	476	0.159	5.8	5	3.46	0.95	0.9	11.52
MESA	32D	0.7	0.11	50	13	393	0.015	5.8	6	3.18	0.93	0.9	2
MESA	33E	2.2	0.11	50	13	644	0.0286	5.8	7	2.95	0.92	0.9	5.84
MESA	35D	0.5	0.07	50	13	456	0.05	5.8	5	3.46	0.95	0.9	1.56
MESA	37B	0.3	0.07	50	13	282	0.044	5.8	5	3.46	0.95	0.9	0.93
MESA	39B	0.8	0.14	50	13	434	0.044	5.8	5	3.46	0.95	0.9	2.49
MESA	41A	0.7	0	50	13	487	0.052	5.8	5	3.46	0.95	0.9	2.18
MESA	42E	3.7	0.66	50	2	978	0.019	5.8	10	2.5	0.86	0.89	8.23
MESA	43E	8.5	0.75	50	13	1179	0.007	5.8	13	2.21	0.85	0.89	16.72
MESA	44F	3.2	1	50	13	645	0.012	5.8	8	2.77	0.91	0.9	7.98
MESA	47E	0.3	0	50	13	317	0.072	5.8	5	3.46	0.95	0.9	0.93
MESA	49A	0.3	0	50	13	407	0.059	5.8	5	3.46	0.95	0.9	0.93
MESA	51A	2.1	0.08	50	13	638	0.029	5.8	7	2.95	0.92	0.9	5.58
MESA	52A	0.3	0.06	50	13	288	0.077	5.8	5	3.46	0.95	0.9	0.93
MESA	53B	3.5	0.11	50	13	675	0.047	5.8	7	2.95	0.92	0.9	9.29
MESA	54C	6.9	1	50	13	3701	0.017	5.8	23	1.69	0.75	0.9	10.49
MESA	56C	0.05	0	50	13	96	0.292	5.8	5	3.46	0.95	0.9	0.16
MESA	58B	0.3	0.19	50	13	155	0.197	5.8	5	3.46	0.95	0.9	0.93
MESA	59D	4.1	0.22	50	13	947	0.153	5.8	7	2.95	0.92	0.9	10.89

Project	Subarea	Area (acres	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft	Isohyet (in.	Tc-calculat	Intensity (i	Cu	Cd	Flowrate (c
MESA	61D	0.05	0	50	13	91	0.33	5.8	5	3.46	0.95	0.9	0.16
MESA	63B	0.7	0.11	50	13	280	0.119	5.8	5	3.46	0.95	0.9	2.18
MESA	65E	2	1	50	13	725	0.008	5.8	9	2.63	0.9	0.9	4.73
MESA	66A	2	0.23	50	13	510	0.061	5.8	5	3.46	0.95	0.9	6.23
MESA	68A	2	0.06	50	13	641	0.07	5.8	6	3.18	0.93	0.9	5.72
MESA	101A	0.8	0.21	50	2	572	0.064	5.8	6	3.18	0.89	0.89	2.26
MESA	103A	3	0.54	50	2	1335	0.028	5.8	11	2.39	0.86	0.88	6.31
MESA	105A	1.8	0.39	50	13	727	0.024	5.8	8	2.77	0.91	0.9	4.49
MESA	106A	2.2	0.35	50	13	505	0.057	5.8	5	3.46	0.95	0.9	6.85
MESA	108A	4.2	0.73	50	13	752	0.055	5.8	7	2.95	0.92	0.9	11.15
MESA	109B	0.8	0.31	50	13	417	0.059	5.8	5	3.46	0.95	0.9	2.49
MESA	111B	0.2	0.16	50	13	208	0.079	5.8	5	3.46	0.95	0.9	0.62
MESA	113B	0.07	0	50	13	141	0.039	5.8	5	3.46	0.95	0.9	0.22
MESA	115B	0.03	0	50	13	55	0.001	5.8	5	3.46	0.95	0.9	0.09
MESA	117A	0.7	0.54	50	13	507	0.051	5.8	5	3.46	0.95	0.9	2.18
MESA	119A	5.5	0	50	13	1049	0.037	5.8	9	2.63	0.9	0.9	13.02
MESA	121A	0.09	0	50	13	100	0.05	5.8	5	3.46	0.95	0.9	0.28
MESA	122A	8.9	0	50	13	1323	0.038	5.8	11	2.39	0.88	0.88	18.72
MESA	123A	1.7	0.14	50	13	599	0.06	5.8	6	3.18	0.93	0.9	4.87
MESA	124A	5.2	0.06	50	13	1133	0.047	5.8	9	2.63	0.9	0.9	12.31
MESA	201A	2.9	1	50	2	550	0.0042	5.8	9	2.63	0.87	0.9	6.86
MESA	301A	2.4	1	50	2	421	0.0064	5.8	7	2.95	0.88	0.9	6.37
MESA	401A	4	1	50	13	453	0.006	5.8	7	2.95	0.92	0.9	10.62
MESA	501A	0.7	1	50	13	256	0.049	5.8	5	3.46	0.95	0.9	2.18
MESA	601A	0.3	1	50	13	239	0.064	5.8	5	3.46	0.95	0.9	0.93
MESA	701A	0.36	0	50	13	135	0.094	5.8	5	3.46	0.95	0.9	1.12

APPENDIX III

F0601 HYDROGRAPH DATA
HYDROGRAPH – DRAINAGE AREA A
HYDROGRAPH – DRAINAGE AREA B
HYDROGRAPH – DRAINAGE AREA C
HYDROGRAPH – DRAINAGE AREA D
HYDROGRAPH – DRAINAGE AREA E

DRAINAGE AREA A

EX-50.HHD

♀

Program Package Serial Number: 2203

10/02/14 FILE: EX-50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 5

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY- STORM YEAR = 50 SOIL DATA FILE:

Flood hydrograph

HYDROGRAPH AT 1 68A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	5.94	200	6.13	300	6.53	400	6.94
500	7.54	600	8.20	700	9.01	800	10.10	900	11.65
1000	14.43	1050	17.24	1100	22.35	1110	23.91	1120	26.72
1130	32.93	1131	33.73	1132	34.55	1133	35.46	1134	36.43
1135	37.48	1136	38.59	1137	39.77	1138	41.04	1139	42.40
1140	43.86	1141	45.54	1142	47.39	1143	49.36	1144	51.46
1145	53.87	1146	56.53	1147	59.32	1148	62.28	1149	66.48
1150	71.52	1151	77.22	1152	83.75	1153	91.46	1154	99.45
1155	107.19	1156	115.75	1157	125.59	1158	136.74	1159	149.53
1160	164.43	1161	179.18	1162	191.84	1163	201.23	1164	206.91
1165	209.26	1166	208.94	1167	206.72	1168	202.93	1169	197.75
1170	191.25	1171	183.47	1172	174.71	1173	165.26	1174	155.55
1175	145.90	1176	136.56	1177	127.81	1178	119.67	1179	112.16
1180	105.27	1181	98.95	1182	93.07	1183	87.63	1184	82.60
1185	77.91	1186	73.55	1187	69.49	1188	65.71	1189	62.18
1190	58.91	1191	55.87	1192	53.05	1193	50.45	1194	48.05
1195	45.83	1196	43.79	1197	41.91	1198	40.19	1199	38.60
1200	37.13	1201	35.77	1202	34.50	1203	33.31	1204	32.21
1205	31.17	1206	30.19	1207	29.29	1208	28.45	1209	27.68
1210	26.96	1211	26.27	1212	25.63	1213	25.02	1214	24.44
1215	23.89	1216	23.38	1217	22.90	1218	22.43	1219	21.99
1220	21.57	1221	21.17	1222	20.77	1223	20.39	1224	20.03
1225	19.69	1226	19.37	1227	19.06	1228	18.78	1229	18.50
1230	18.24	1231	17.98	1232	17.74	1233	17.51	1234	17.30
1235	17.09	1236	16.89	1237	16.69	1238	16.48	1239	16.28
1240	16.07	1241	15.86	1242	15.66	1243	15.46	1244	15.28
1245	15.10	1246	14.93	1247	14.77	1248	14.62	1249	14.48
1250	14.33	1251	14.20	1252	14.07	1253	13.94	1254	13.81
1255	13.68	1256	13.56	1257	13.45	1258	13.34	1259	13.23
1260	13.12	1261	13.02	1262	12.92	1263	12.82	1264	12.73
1265	12.63	1266	12.54	1267	12.45	1268	12.36	1269	12.27
1270	12.19	1271	12.11	1272	12.02	1273	11.95	1274	11.87
1275	11.80	1276	11.72	1277	11.65	1278	11.59	1279	11.52
1280	11.45	1281	11.38	1282	11.32	1283	11.25	1284	11.18
1285	11.11	1286	11.04	1287	10.98	1288	10.92	1289	10.85
1290	10.80	1291	10.74	1292	10.68	1293	10.63	1294	10.57
1295	10.52	1296	10.47	1297	10.41	1298	10.36	1299	10.31
1300	10.26	1310	9.79	1320	9.34	1330	8.96	1340	8.63
1350	8.33	1360	8.05	1370	7.79	1380	7.51	1390	7.25
1400	7.07	1420	6.72	1440	6.43	1460	6.01	1500	5.90

TOTAL VOLUME THIS HYDROGRAPH = 28.07(Ac.Ft)

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Program Package Serial Number: 2203

10/02/14 FILE: EX-50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 7

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

DRAINAGE AREA B

EX-50.HHD

Version 11.3, MODIFIED RATIONAL METHOD HYDROLOGY- STORM YEAR = 50 SOIL DATA FILE:

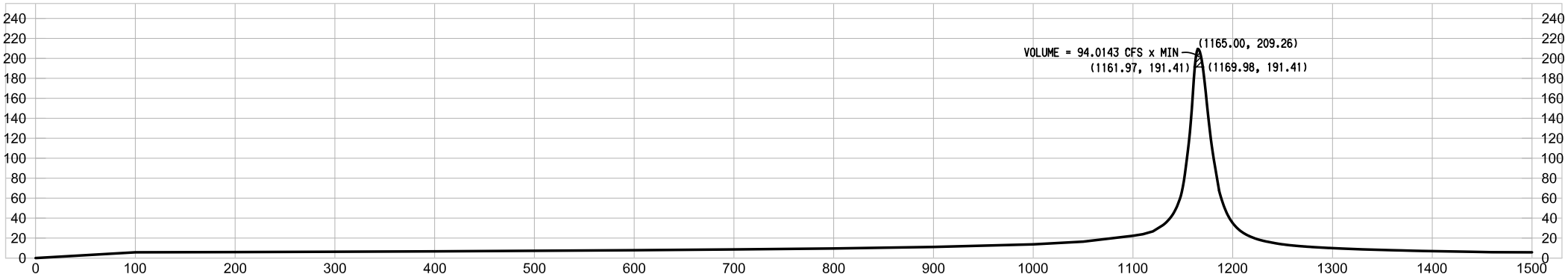
Flood hydrograph

HYDROGRAPH AT 2 125A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.19	200	1.23	300	1.30	400	1.37
500	1.46	600	1.57	700	1.72	800	1.91	900	2.19
1000	2.70	1050	3.36	1100	4.38	1110	4.79	1120	5.89
1130	8.65	1131	8.97	1132	9.30	1133	9.67	1134	10.05
1135	10.44	1136	10.84	1137	11.31	1138	11.79	1139	12.29
1140	12.78	1141	13.42	1142	14.12	1143	14.89	1144	15.70
1145	16.80	1146	17.99	1147	19.27	1148	20.62	1149	23.71
1150	27.30	1151	31.42	1152	36.23	1153	41.56	1154	45.54
1155	48.90	1156	51.67	1157	54.20	1158	55.16	1159	55.55
1160	55.48	1161	54.27	1162	51.35	1163	48.04	1164	43.65
1165	38.57	1166	33.53	1167	29.05	1168	25.38	1169	22.38
1170	19.88	1171	17.82	1172	16.15	1173	14.82	1174	13.74
1175	12.86	1176	12.15	1177	11.59	1178	11.14	1179	10.80
1180	10.52	1181	10.31	1182	10.11	1183	9.93	1184	9.76
1185	9.57	1186	9.37	1187	9.17	1188	8.94	1189	8.71
1190	8.47	1191	8.22	1192	7.98	1193	7.75	1194	7.51
1195	7.28	1196	7.05	1197	6.84	1198	6.62	1199	6.41
1200	6.22	1201	6.03	1202	5.85	1203	5.67	1204	5.51
1205	5.37	1206	5.24	1207	5.10	1208	4.98	1209	4.87
1210	4.75	1211	4.64	1212	4.54	1213	4.45	1214	4.35
1215	4.26	1216	4.18	1217	4.10	1218	4.02	1219	3.96
1220	3.88	1221	3.82	1222	3.75	1223	3.69	1224	3.63
1225	3.57	1226	3.52	1227	3.47	1228	3.41	1229	3.37
1230	3.32	1231	3.27	1232	3.23	1233	3.18	1234	3.14
1235	3.09	1236	3.04	1237	3.00	1238	2.96	1239	2.92
1240	2.89	1241	2.85	1242	2.81	1243	2.78	1244	2.75
1245	2.72	1246	2.69	1247	2.66	1248	2.64	1249	2.62
1250	2.60	1251	2.58	1252	2.56	1253	2.54	1254	2.52
1255	2.50	1256	2.48	1257	2.46	1258	2.44	1259	2.42
1260	2.40	1261	2.38	1262	2.36	1263	2.35	1264	2.33
1265	2.31	1266	2.30	1267	2.29	1268	2.27	1269	2.26
1270	2.24	1271	2.23	1272	2.21	1273	2.20	1274	2.19
1275	2.17	1276	2.16	1277	2.15	1278	2.13	1279	2.13
1280	2.12	1281	2.11	1282	2.09	1283	2.08	1284	2.07
1285	2.06	1286	2.05	1287	2.04	1288	2.02	1289	2.01
1290	2.00	1291	1.99	1292	1.98	1293	1.96	1294	1.95
1295	1.94	1296	1.93	1297	1.92	1298	1.91	1299	1.89
1300	1.88	1310	1.79	1320	1.72	1330	1.65	1340	1.59
1350	1.54	1360	1.49	1370	1.46	1380	1.42	1390	1.38
1400	1.35	1420	1.30	1440	1.25	1460	1.08	1500	1.08

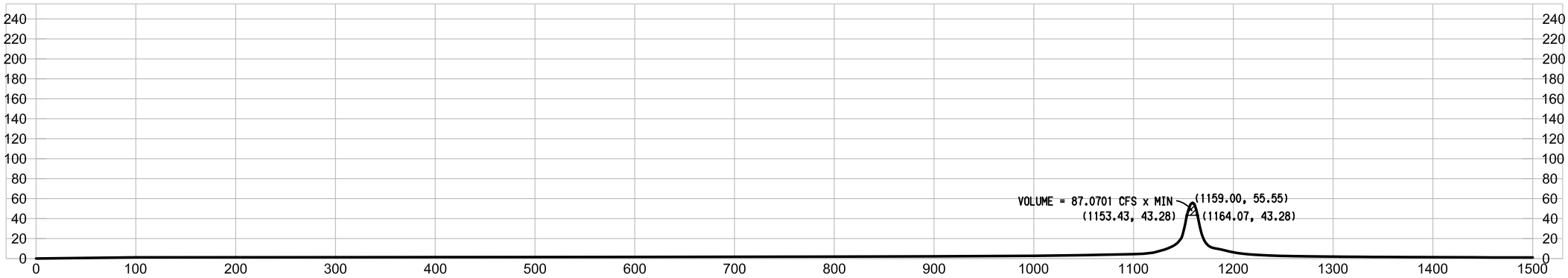
TOTAL VOLUME THIS HYDROGRAPH = 5.58(Ac.Ft)

DRAINAGE AREA A



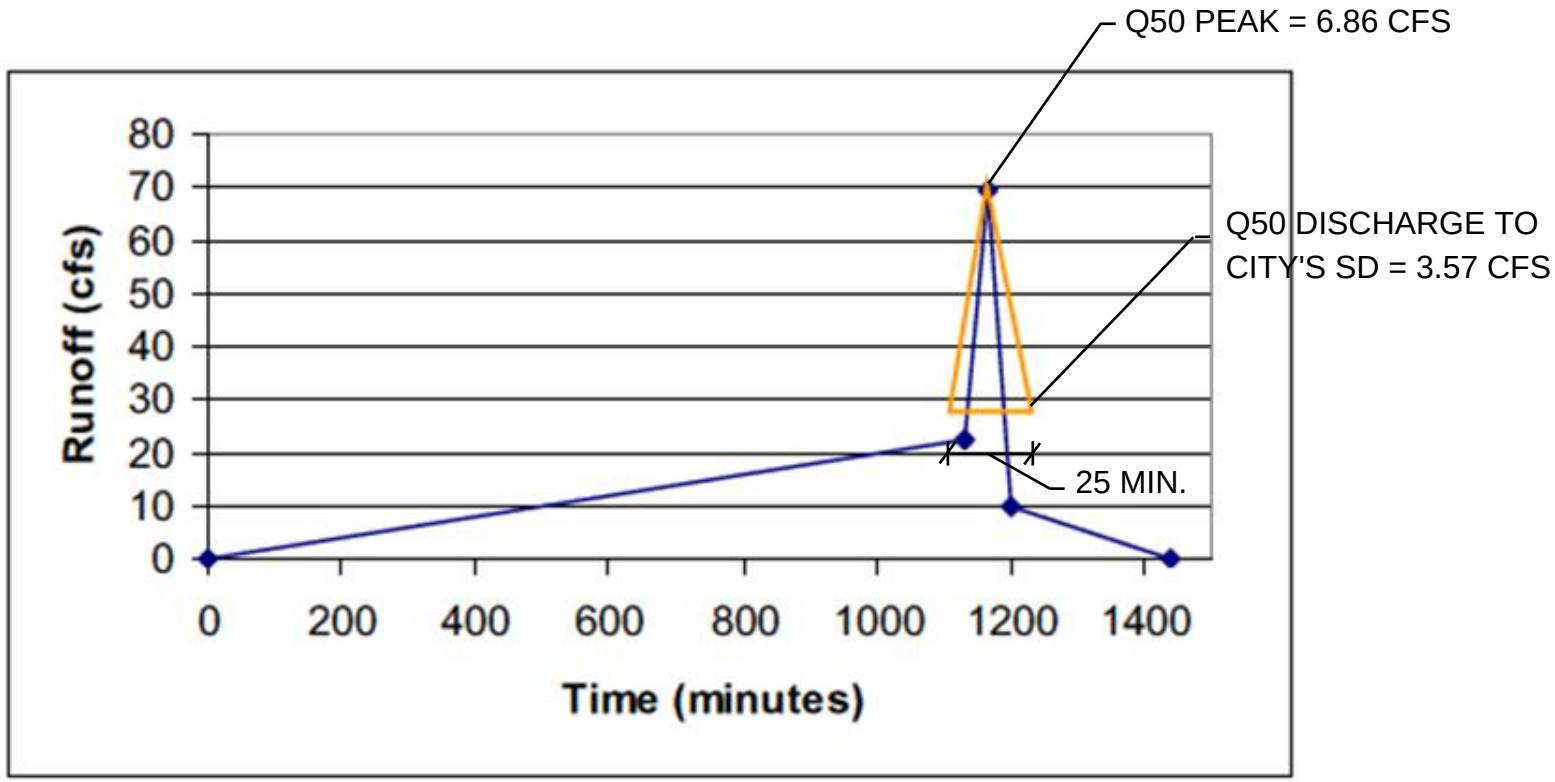
BASIN VOLUME REQUIRED = 94.0143 CFS x MIN x $\frac{60\text{SEC}}{1\text{ MIN}}$ = 5,641 CF

DRAINAGE AREA B



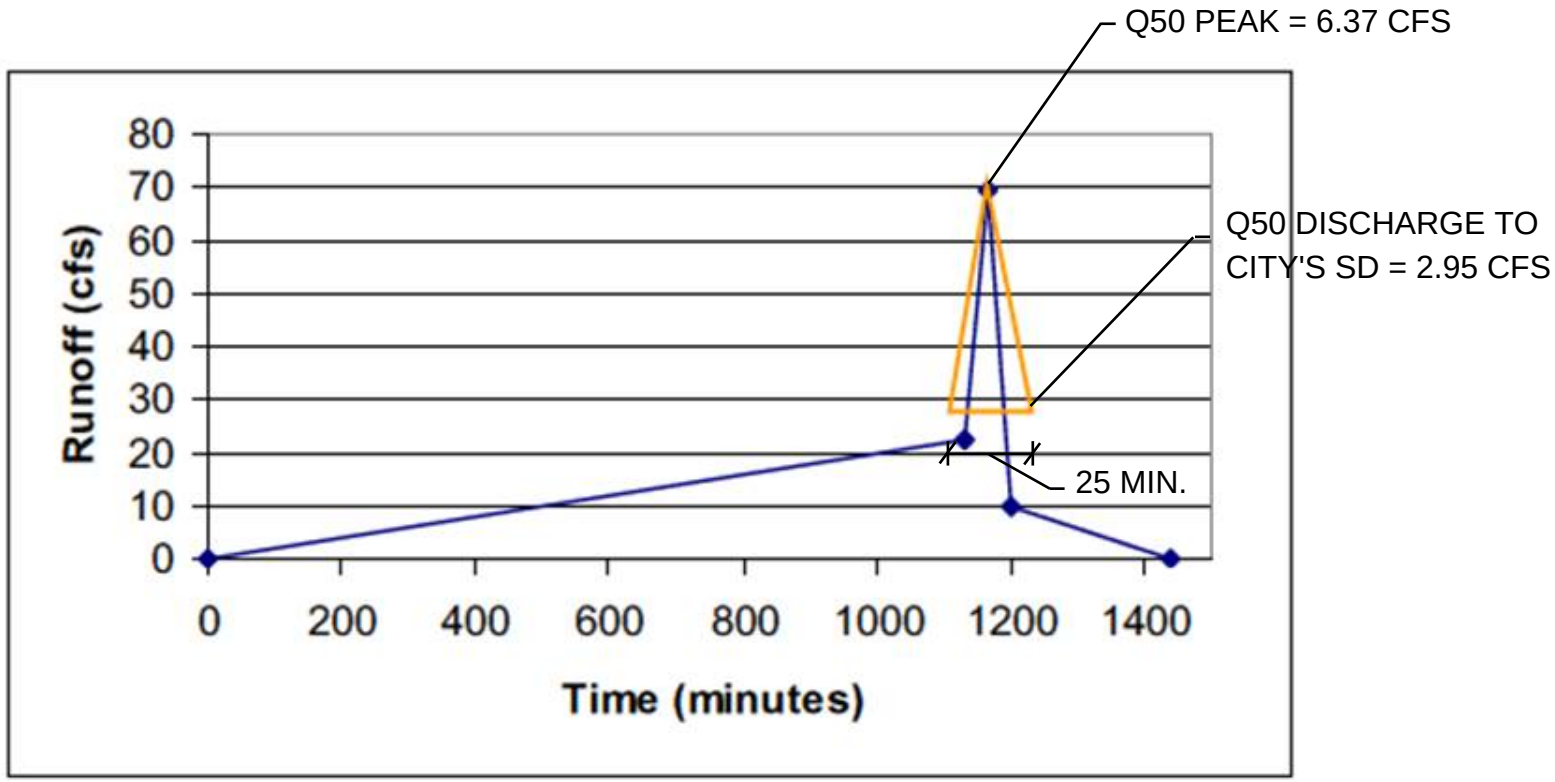
BASIN VOLUME REQUIRED = $87.0701 \text{ CFS} \times \text{MIN} \times \frac{60\text{SEC}}{1 \text{ MIN}} = 5{,}224 \text{ CF}$

DRAINAGE AREA C



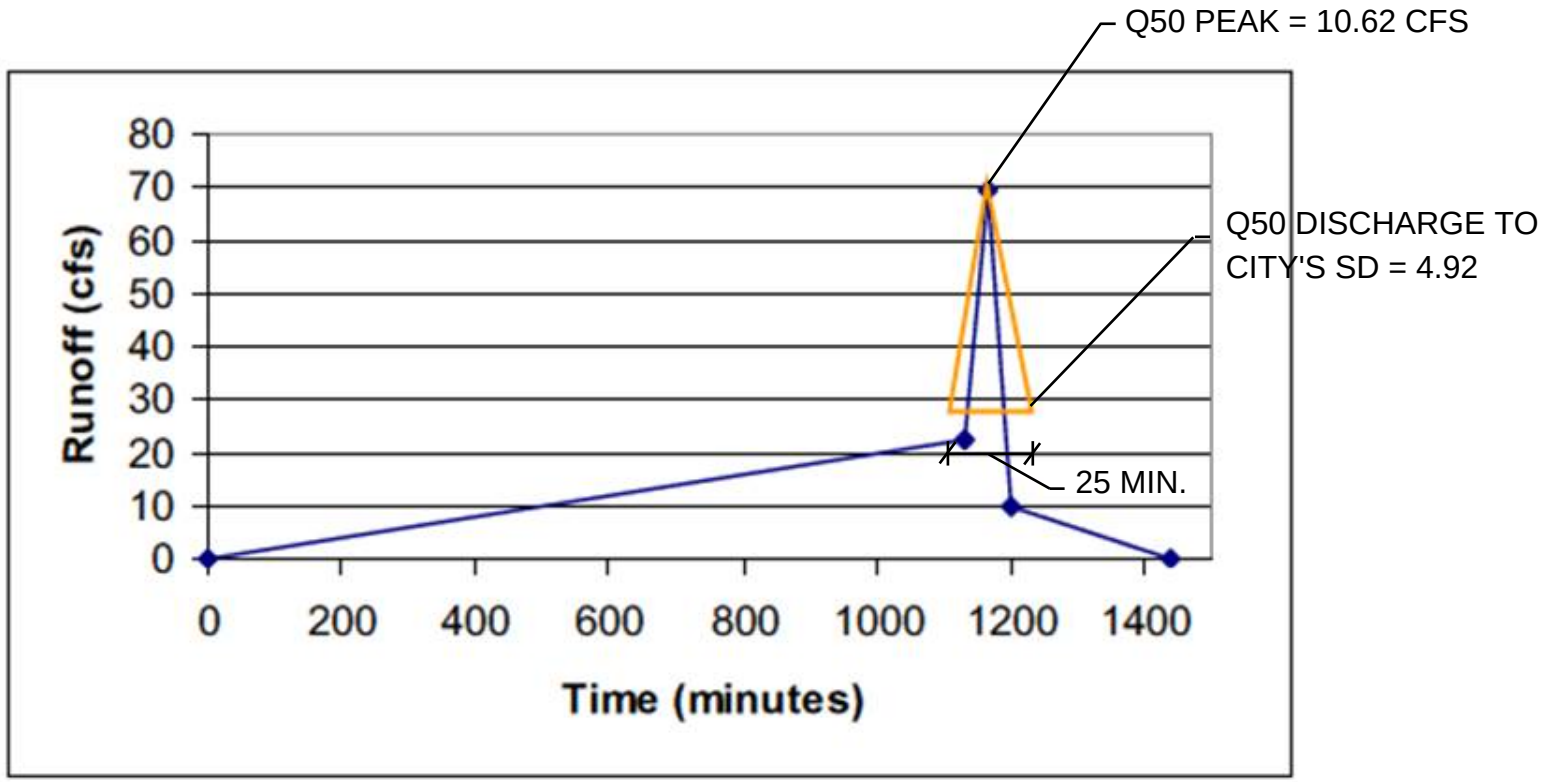
BASIN VOLUME REQUIRED = $\frac{1}{2}$ (6.86 CFS - 3.57 CFS) x 25 MIN x $\frac{60 \text{ SEC}}{1 \text{ MIN}}$ = 2,468 CFS

DRAINAGE AREA D



BASIN VOLUME REQUIRED = $\frac{1}{2}$ (6.37 CFS - 2.95 CFS) x 25 MIN x $\frac{60 \text{ SEC}}{1 \text{ MIN}}$ = 2,565 CFS

DRAINAGE AREA E



BASIN VOLUME REQUIRED = $\frac{1}{2}$ (10.62 CFS - 4.92 CFS) x 25 MIN x $\frac{60 \text{ SEC}}{1 \text{ MIN}}$ = 4,275 CFS

ATTACHMENT G: SECTION 404 NATIONWIDE PERMIT

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

June 30, 2015

Shannon Pankratz
Department of Army
Los Angeles District, U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
ATTN: Regulatory Division, CESPL-RG
Los Angeles, CA 90017-3409

Re: Southern California Edison's Section 404 Nationwide Permit Application for the Mesa 500 kilovolt Substation Project – Application File Number SPL-2014-00375-SLP

Dear Ms. Pankratz:

Please find the attached application for a Section 404 Nationwide Permit (NWP) for impacts to waters of the United States (U.S.) associated with the Mesa 500 kilovolt (kV) Substation Project (Project). A request for an Approved Jurisdictional Determination (AJD) was submitted to you on April 22, 2015. Southern California Edison (SCE) appreciates the assistance that you have already provided in developing this application.

The enclosed application package includes the following:

- Completed NWP Pre-Construction Notification (PCN) Form
- Attachment A: Supplemental Information
- Attachment B: Figures, including:
    - Figure 1: Project Components Overview Map
    - Figure 2: Proposed Substation Layout
    - Figure 3: Grading Phases Areas
    - Figure 4: Impacts to Waters of the U.S.
    - Figure 5: Impacts to Waters of the U.S.: Typical Plan and Cross-Section Drawing
- Attachment C: Photographs of Impacted Water Features
- Attachment D: Protocol Surveys for Coastal California Gnatcatcher
- Attachment E: Biological Assessment
- Attachment F: Historic Properties and Cultural Resources Summary

In addition, a Biological Assessment (BA) has been prepared for the Project in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA) (16 U.S. Code 1536[c]) to address the potential effects of the Project on federally listed threatened and endangered species, designated critical habitat, and proposed/candidate species for ESA protection. A separate hard copy of the BA is enclosed to facilitate consultation with the U.S. Fish and Wildlife Service.

SCE fully appreciates the requirements set forth in Section 404 of the Clean Water Act and continues to explore practicable ways to avoid and/or minimize impacts of the Project. SCE is in the process of developing a Compensatory Mitigation Plan to ensure that adequate mitigation is provided as compensation for impacts to waters of the U.S. that would result from construction of the Project.

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

We appreciate your review and input to this point, and look forward to continuing to work with you on permitting the Project. Should you have any questions about the enclosed, please do not hesitate to contact me at (626) 404-4048.

Sincerely,

Richard Haywood
Senior Regulatory Specialist
Southern California Edison
1218 South 5th Avenue
Monrovia, CA 91016
(626) 404-4048
Richard.haywood@sce.com

SOUTHERN CALIFORNIA EDISON COMPANY

MESA 500 KILOVOLT SUBSTATION PROJECT SECTION 404 NATIONWIDE PERMIT APPLICATION

Prepared for:

Prepared by:

SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

June 2015

U.S. Army Corps of Engineers

South Pacific Division

Nationwide Permit Pre-Construction Notification (PCN) Form

This form integrates requirements of the U.S. Army Corps of Engineers Nationwide Permit Program within the South Pacific Division (SPD), including General and Regional Conditions. You MUST fill out all boxes related to the work being done. Fillable boxes in this form expand if additional space is needed.

Box 1 Project Name Mesa 500 kilovolt (kV) Substation Project (Project) [SPL-2014-00375-SLP]			
Applicant Name Hazem Gabr		**Applicant Title** Manager, Water Quality Section Corporate Environmental Health and Safety	
Applicant Company, Agency, etc. Southern California Edison Company (SCE)		Applicant's internal tracking number (if any) Not Applicable (N/A)	
Mailing Address 1218 South 5th Avenue Monrovia, CA 91016			
Work Phone with area code (626) 462-8715	Mobile Phone with area code	Home Phone with area code	Fax # with area code
E-mail Address Hazem.gabr@sce.com	Relationship of applicant to property: ☒ Owner ☐ Purchaser ☐ Lessee ☐ Other:		
Application is hereby made for verification that subject regulated activities associated with subject project qualify for authorization under a U.S. Army Corps of Engineers Nationwide Permit or Permits as described herein. I certify that I am familiar with the information contained in this application and, that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agency to which this application is made the right to enter the above-described location to inspect the proposed, in-progress or completed work. I agree to start work only after all necessary permits have been received and to comply with all terms and conditions of the authorization.			
Signature of applicant H. Gabr		Date (mm/dd/yyyy) 6/29/2015	

If anyone other than the person named as the Applicant will be in contact with the U.S. Army Corps of Engineers representing the Applicant regarding this project during the permit process, Box 2 MUST be filled out.

Box 2 Authorized Agent/Operator Name Richard Haywood		**Agent/Operator Title** Senior Regulatory Wetlands Specialist	
Agent/Operator Company, Agency, etc. SCE		E-mail Address Richard.haywood@sce.com	
Mailing Address 1218 South 5th Avenue Monrovia, CA 91016			
Work Phone with area code (626)462-8632	Mobile Phone with area code (626) 404-4048	Home Phone with area code	Fax # with area code
I hereby authorize the above named authorized agent to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application. I understand that I am bound by the actions of my agent and I understand that if a federal or state permit is issued, I, or my agent, must sign the permit.			
Signature of applicant H. Gabr		Date (mm/dd/yyyy) 6/29/2015	
I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and			

belief, such information is true, complete, and accurate.	
Signature of authorized agent Richard Hayward	Date (mm/dd/yyyy) 6/29/2015

Box 3 Name of Property Owner(s), if other than Applicant: The Project is located entirely within SCE fee-owned property and rights-of-way.		
Owner Title N/A	**Owner Company, Agency, etc.** N/A	
Mailing Address N/A		
Work Phone with area code N/A	Mobile Phone with area code N/A	Home Phone with area code N/A

Box 4 Name of Contractor(s) (if known): To Be Determined (TBD)		
Contractor Title TBD	**Contractor Company, Agency, etc.** TBD	
Mailing Address TBD		
Work Phone with area code TBD	Mobile Phone with area code TBD	Home Phone with area code

Box 5 Site Number 1 of 1. Project location(s), including street address, city, county, state, zip code where proposed activity will occur:

The Project is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The vast majority of Project activities—consisting of the construction of the 500/220/66/16 kV Mesa Substation and associated transmission, subtransmission, distribution, and telecommunications lines—will be located in the City of Monterey Park. The Mesa Substation site is located south of Potrero Grande Drive, west of Greenwood Avenue, east of East Markland Drive, and north of State Route 60. Figure 1: Project Components Overview Map in Attachment B: Figures depicts the location of the Project.

A total of eight potential United States (U.S.) Army Corps of Engineers (USACE)-jurisdictional waters, including one intermittent drainage (Rio Hondo) and seven ephemeral drainages, were mapped within the Project area. Attachment A: Supplemental Information provides the locations of these waters.

Name of Waterbody(ies) (if known, otherwise enter "an unnamed tributary to"): Rio Hondo and 7 unnamed tributaries to the Los Angeles River	
Latitude & Longitude (D/M/S, DD, or UTM with Zone): See Table 1: Project Location Information in Attachment A: Supplemental Information.	Section, Township, Range: None (Land Grant)
County Assessor Parcel Number (Include County name): See Table 1: Project Location Information in Attachment A: Supplemental Information.	USGS Quadrangle map name: See Table 1: Project Location Information in Attachment A: Supplemental Information
Watershed (HUC and watershed name[1]): HUC 18070105, Los Angeles-San Gabriel Hydrologic Unit / Los Angeles River Watershed [1]http://water.usgs.gov/GIS/regions.html	Size of permit area or project boundary: 202.12 acres N/A linear feet

Revised April 12, 2012. For the most recent version of this form, visit your Corps District's Regulatory website.

Directions to the project location and other location descriptions, if known:
The Mesa Substation site can be accessed from Interstate 5. Exit on Telegraph Road, turn left on Telegraph Road, turn right on Garfield Avenue, turn right on Via Campo, turn left on East Markland Drive, and turn right on Potrero Grande Drive. Continue approximately 0.5 mile on Potrero Grande Drive, and Mesa Substation is on the right.

Figure 1: Project Components Overview Map in Attachment B: Figures depicts the location of the Project.

Access limitations or restrictions (if any): All site visits will need to be coordinated with SCE. Please contact Richard Haywood to coordinate site visits.

Box 6 Nature of Activity (Description of the project, include all features):

The Project consists of the following main components: 1) construction of the proposed Mesa Substation and demolition of the existing Mesa Substation within the City of Monterey Park; 2) removal, relocation, modification and/or construction of transmission, subtransmission, distribution, and telecommunications structures within the cities of Monterey Park, Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County; 3) conversion of an existing source line from overhead to underground between three street lights on Loveland Street within the City of Bell Gardens; and 4) installation of a temporary 220 kV line loop-in at Goodrich Substation within the City of Pasadena.

Further details regarding the components to be constructed are provided in Attachment A: Supplemental Information.

Project Purpose (Description of the reason or purpose of the project):

The Project is being proposed to meet the following fundamental objectives: 1) provide safe and reliable electrical service; 2) address reliability concerns resulting from the recent retirement of San Onofre Nuclear Generating Station and from Once Through Cooling shutdowns expected by December 31, 2020; 3) allow greater flexibility in the siting of future generation projects to meet local reliability needs in the Western Los Angeles Basin, while reducing the total amount of new generation required by providing additional transmission import capability; 4) maintain or improve system reliability within the Electrical Needs Area; 5) comply with all applicable reliability planning criteria required by the North American Electric Reliability Corporation, the Western Electricity Coordinating Council, and California Independent System Operator.

Additional details regarding the purpose of the Project are provided in Attachment A: Supplemental Information.

Reason(s) for Discharge into Waters of the United States (Description of why dredged and/or fill material needs to be placed in Waters of the United States):
Construction of Mesa Substation will result in permanent fill and temporary disturbance of jurisdictional waters of the U.S. Project activities that will result in fill include site grading, ground surface improvements, below-grade construction, above-grade construction, distribution getaway construction, and telecommunications equipment installation.

Revised April 12, 2012. For the most recent version of this form, visit your Corps District's Regulatory website.

Proposed discharge of dredge and/or fill material. Indicate total surface area in **acres** and **linear feet** (where appropriate) of the proposed impacts to Waters of the United States, indicate water body type (tidal wetland, non-tidal wetland, vernal pool, riparian wetland, ephemeral stream/river, intermittent stream/river, perennial stream/river, pond/lake, vegetated shallows, bay/harbor, lagoon, ocean, etc.), and identify the impact(s) as permanent and/or temporary for each requested Nationwide Permit[1]:

[1] Enter the intended permit number(s). See Nationwide Permit regulations for permit numbers and qualification information: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/NationwidePermits.aspx

Water Body Type	**Requested NWP Number:** 12				**Requested NWP Number:**				**Requested NWP Number:**			
	Permanent		Temporary		Permanent		Temporary		Permanent		Temporary	
	Area	Length	Area	Length	Area	Length	Area	Length	Area	Length	Area	Length
Ephemeral Drainage	0.37	6,294.49	0.09	1,352.52								
Total:	0.37	6,294.49	0.09	1,352.52								

Table 3: USACE-Jurisdictional Resources and Impacts in Attachment A: Supplemental Information summarizes the Project's impacts to USACE-jurisdictional waters.

Total volume (in cubic yards) and type(s) of material proposed to be dredged from or discharged into Waters of the United States:

Material Type	Total Volume Dredged	Total Volume Discharged
Rock Slope Protection (RSP)		
Clean spawning gravel		
River rock		
Soil/Dirt/Silt/Sand/Mud		122.49 cubic yards
Concrete		
Structure		
Stumps/Root wads		
Other:		
Total:		

Table 3: USACE-Jurisdictional Resources and Impacts in Attachment A: Supplemental Information summarizes the approximate fill volume to be discharged to USACE-jurisdictional waters.

Activity requires a written waiver to exceed specified limits of the Nationwide Permit? ☐ Yes ☒ No
If yes, provide Nationwide Permit number and name, limit to be exceeded, and rationale for each requested waiver:
N/A

Activity will result in the loss of greater than ½-acre of Waters of the United States? ☐ Yes ☒ No
If yes, provide an electronic copy (compact disc) or multiple hard copies (7) of the complete PCN for appropriate Federal and State Pre-discharge Notification (See General Condition #31, Pre-construction Notification, Agency Coordination, Section 2 and 4):
N/A

Describe direct and indirect effects caused by the activity (General Condition #31, District Engineer's Decision: A discussion of the Project's direct and indirect effects is provided in Attachment A: Supplemental Information.

Potential cumulative impacts of proposed activity (if any): A discussion of the Project's potential cumulative impacts is provided in Attachment A: Supplemental Information.

Drawings and figures (see each U.S. Army Corps of Engineers District's Minimum Standards Guidance): See Attachment B: Figures; See Attachment C: Photographs.

Vicinity map: ☒ Attached (or mail copy separately if applying electronically)

To-scale Plan view drawing(s): ☒ Attached (or mail copy separately if applying electronically)

To-scale elevation and/or Cross Section drawing(s): ☒ Attached (or mail copy separately if applying electronically)

Numbered and dated pre-project color photographs: ☒ Attached (or mail copy separately if applying electronically)

Sketch drawing(s) or map(s): ☒ Attached (or mail copy separately if applying electronically)

Has a wetlands/waters of the U.S. delineation been completed?

☒ Yes, Attached[2] (or mail copy separately if applying electronically) ☐ No

A Request for an Approved Jurisdictional Determination (AJD) was submitted to the USACE on April 22, 2015. The AJD presents the results of the delineation of potential waters of the U.S. within the Project area.

If a delineation has been completed, has it been verified in writing by the Corps?

☐ Yes, Date of preliminary or approved jurisdictional determination (mm/dd/yyyy): N/A Corps file number: SPL-2014-00375-SLP

☒ No

[2]If available, provide ESRI shapefiles (NAD83) for delineated waters

For proposed discharges of dredged material resulting from navigation dredging into inland or near-shore waters of the U.S. (including beach nourishment), please attach[3] a proposed Sampling and Analysis Plan (SAP) prepared according to Inland Testing Manual (ITM) guidelines (including Tier I information, if available), or if disposed offshore, a proposed SAP prepared according to the Ocean Disposal Manual.

[3]Or mail copy separately if applying electronically

Is any portion of the work already complete? ☐ YES ☒ NO

If yes, describe the work: N/A

Box 7 Authority:

Is Section 10 of the Rivers and Harbors Act applicable?: ☐ YES ☒ NO

Is Section 404 of the Clean Water Act applicable?: ☒ YES ☐ NO

Is the project located on U.S. Army Corps of Engineers property or easement?: ☒ YES ☐ NO

A small portion of the Project (proposed telecommunications line) crosses through USACE-owned property (Whittier Narrows).

If yes, has Section 408 process been initiated?: ☐ YES ☒ NO

Would the project affect a U.S. Army Corps of Engineers structure?: ☒ YES ☐ NO

If yes, has Section 408 process been initiated?: ☐ YES ☒ NO

Is the project located on other Federal Lands (USFS, BLM, etc.)?: ☐ YES ☒ NO

Is the project located on Tribal Lands?: ☐ YES ☒ NO

Box 8 Is the discharge of fill or dredged material for which Section 10/404 authorization is sought part of a larger plan of development?: ☐ YES ☒ NO

If discharge of fill or dredged material is part of development, name and proposed schedule for that larger development (start-up, duration, and completion dates):
N/A

Location of larger development (if discharge of fill or dredged material is part of a plan of development, a map of suitable quality and detail of the entire project site should be included):
N/A

Box 9 Measures taken to avoid and minimize impacts to waters of the United States:
A description of measures taken to avoid and minimize impacts to waters of the U.S. is provided in Attachment A: Supplemental Information.

Box 10 Proposed Compensatory Mitigation related to fill/excavation and dredge activities. Indicate in **acres** and **linear feet** (where appropriate) the total quantity of Waters of the United States proposed to be created, restored, enhanced and/or preserved for purposes of providing compensatory mitigation. Indicate water body type (tidal wetland, non-tidal wetland, vernal pool, riparian wetland, ephemeral stream/river, intermittent stream/river, perennial stream/river, pond/lake, vegetated shallows, bay/harbor, lagoon, ocean, etc.) or non-jurisdictional (uplands[1]). Indicate mitigation type (permittee-responsible on-site/off-site, mitigation bank, or in-lieu fee program). If the mitigation is purchase of credits from a mitigation bank, indicate the bank to be used, if known:
[1] For uplands, please indicate if designed as an upland buffer.

SCE in the process of evaluating the method of compensation, which could include restoration, establishment, and/or enhancement. SCE will develop a Compensatory Mitigation Plan to mitigate for permanent impacts resulting from construction of the Project. Permanent impacts to all jurisdictional water resources would be compensated at a 1-to-1 ratio, or as determined by the USACE.

Site Number	Water Body Type	Created		Restored		Enhanced		Preserved		Mitigation Type
		Area	Length	Area	Length	Area	Length	Area	Length	
Total:										

If no mitigation is proposed, provide detailed explanation of why no mitigation would be necessary:
N/A

If permittee-responsible mitigation is proposed, provide justification for not utilizing a Corps-approved mitigation bank or in-lieu fee program:
N/A

Has a draft/conceptual mitigation plan been prepared in accordance with the April 10, 2008, Final Mitigation Rule[2] and District Guidelines[3,4,5]? [2]http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/mitig_info.aspx [3]**Sacramento and San Francisco Districts**-http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/pdf/Mitigation_Monitoring_Guidelines.pdf [4]**Los Angeles District**-http://www.spl.usace.army.mil/Missions/Regulatory.aspx [5]**Albuquerque District**-http://www.spa.usace.army.mil/reg/mitigation/SPA%20Final%20Mitigation%20Guidelines_OLD.pdf ☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No If no, a mitigation plan must be prepared and submitted, if applicable. SCE in the process of evaluating the method of compensation, including restoration, establishment, enhancement, and/or preservation.	
Mitigation site(s) Latitude & Longitude (D/M/S, DD, or UTM with Zone): TBD	USGS Quadrangle map name(s): TBD
Assessor Parcel Number(s): TBD	Section(s), Township(s), Range(s): TBD
Other location descriptions, if known: TBD	
Directions to the mitigation location(s): TBD	

Box 11 Threatened or Endangered Species and Essential Fish Habitat

Please list any federally-listed (or proposed) threatened or endangered species or critical habitat (or proposed critical habitat) within the project area (include scientific names (e.g., Genus species), if known):

A discussion of federally threatened and endangered species within the Project area is provided in Attachment A: Supplemental Information.

Have surveys, using U.S. Fish and Wildlife Service/NOAA Fisheries protocols, been conducted? See Attachment D: USFWS Protocol-Level Surveys for California Coastal Gnatcatcher.

☒ Yes, Report attached (or mail copy separately if applying electronically) ☐ No

Has a biological assessment or evaluation been completed for the proposed project? See Attachment E: Biological Assessment

☒ Yes, Report attached (or mail copy separately if applying electronically) ☐ Not attached

Has Section 7 consultation been initiated by another federal agency?

☐ Yes, Initiation letter attached (or mail copy separately if applying electronically) ☒ No

Has Section 10 consultation been initiated for the proposed project?

☐ Yes, Initiation letter attached (or mail copy separately if applying electronically) ☒ No

Has the USFWS/NOAA Fisheries issued a Biological Opinion?

☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No

If yes, list date Opinion was issued (m/d/yyyy): N/A

Is the project located within Essential Fish Habitat[1] (EFH)? ☐ Yes ☒ No

[1]http://swr.nmfs.noaa.gov/hcd/HCD_webContent/EFH/index_EFH.htm

Box 12 Historic Properties and Cultural Resources:

Are any cultural resources of any type known to exist on-site? ☐ Yes ☒ No

Please list any known historic properties listed, or eligible for listing, on the National Register of Historic Places:

A discussion of historic properties and cultural resources within the Project area is provided in Attachment F: Historic Properties and Cultural Resources Summary.

Has a cultural resource records search been conducted? See Attachment F: Historic Properties and Cultural Resources.
☒ Yes, Report attached (or mail copy separately if applying electronically) ☐ No

Has a cultural resource pedestrian survey been conducted for the site?
☒ Yes, Report attached (or mail copy separately if applying electronically) ☐ No

Has another federal agency been designated the lead federal agency for Section 106 consultation?
☐ Yes, Designation letter/email attached (or mail copy separately if applying electronically) ☒ No

Has Section 106 consultation been initiated by another federal agency?
☐ Yes, Initiation letter attached (or mail copy separately if applying electronically) ☒ No

Has a Section 106 MOA or PA been signed by another federal agency and the SHPO?
☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No
If yes, list date MOA or PA was signed (m/d/yyyy): N/A

Box 13 Section 401 Water Quality Certification:
Applying for certification? ☒ Yes, Attached (or mail copy separately if applying electronically) ☐ No
☐ Not applicable (projects proposed for authorization under RHA Section 10 only)
SCE will be required to obtain a Water Quality Certification pursuant to Section 401 of the Clean Water Act from the Los Angeles Regional Water Quality Control Board (RWQCB). At this time, SCE has not submitted an application to the Los Angeles RWQCB. SCE anticipates the 401 Water Quality Certification application to be submitted in August 2015.
Certification issued (including Programmatically)?
☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No
Certification waived? ☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No
Certification denied? ☐ Yes, Attached (or mail copy separately if applying electronically) ☒ No

Exempted activity? ☐ Yes ☒ No
Agency concurrence? ☐ Yes, Attached ☒ No
If exempt, state why: N/A

Box 14 Coastal Zone Management Act:
Is the project located within the Coastal Zone? ☐ Yes ☒ No (If no, proceed to Box 15)

If yes, applying for a coastal commission-approved Coastal Development Permit?
☐ Yes, Attached (or mail copy separately if applying electronically) ☐ No
If no, applying for separate CZMA-consistency certification?
☐ Yes, Attached (or mail copy separately if applying electronically) ☐ No

Permit/Consistency issued? ☐ Yes, Attached (or mail copy separately if applying electronically) ☐ No

Exempt? ☐ Yes ☐ No
Agency concurrence? ☐ Yes, Attached ☐ No
If exempt, state why: N/A

Box 15 List of other certifications or approvals/denials received from other federal, state, or local agencies for work described in this application:

Attachment A: Supplemental Information provides a list of the other certifications and approvals.

Agency	Type of Approval[4]	Identification Number	Date Applied	Date Approved	Date Denied

[4] Would include but is not restricted to zoning, building, and flood plain permits

Nationwide Permit General Conditions (GC) checklist:

(http://www.gpo.gov/fdsys/pkg/FR-2012-02-21/pdf/2012-3687.pdf)

Check	General Condition	Rationale for compliance with General Condition
☒	1. Navigation	The Project will have no effects on navigation.
☒	2. Aquatic Life Movements	The Project will not disrupt aquatic life movement or migration.
☒	3. Spawning Areas	The Project will not impact spawning areas.
☒	4. Migratory Bird Breeding Areas	The Project has the potential to impact migratory bird breeding areas. SCE would reduce impacts to nesting bird species in these areas by conducting pre-construction clearance surveys no more than seven days prior to construction to determine the location of nesting birds and territories during the nesting bird season (typically February 1 to August 31, 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.
☒	5. Shellfish Beds	The project will not impact shellfish beds.
☒	6. Suitable Material	Fill will consist of either native soil or imported soil. No visual or olfactory indications of soil contamination have been identified at the Project site. SCE will prepare and implement a Project-specific Soil Management Plan that will include precautionary measures and methods for handling potentially contaminated soils at all sites that involve excavation activities. In the event that unanticipated, contaminated soil is encountered during excavation activities, the soil will be segregated and soil samples will be collected and analyzed to determine appropriate disposal or treatment options. Based on the results of the analysis, SCE will decide whether to remove the contaminated soil, or modify the design of the Project to avoid contaminated soil.
☒	7. Water Supply Intakes	The Project will not occur in the proximity of a public water supply intake.
☒	8. Adverse Effects from Impoundments	The Project will not create an impoundment of water.
☒	9. Management of Water Flows	SCE will prepare and implement a drainage plan to minimize surface water and erosion impacts. Existing drainage structures, facilities, and devices may need to be modified, removed, replaced, and/or relocated to meet post-development hydrology conditions. The substation pad area will be finish-graded from a high point elevation at the east end of the pad to the perimeter at a slope of approximately one percent. Drainage inlets and pipes will be constructed to collect and divert storm water runoff. The surrounding area will be regraded and the low points will be filled to provide positive surface drainage to the southwest. Currently, the property generally drains by sheet flow to ephemeral drainages that exit the site at the southwest corner. These ephemeral drainages connect to storm drains that connect to the Rio Hondo Channel, which flows into the Los Angeles River. A detention pond will be constructed in the southwest corner of the new substation site, and other site and source control best management practices (BMPs) will be included in the design to help mitigate surface runoff. Drainage systems will be constructed along the perimeter of the substation to direct interior surface runoff to the detention pond. The site will be designed to comply with the latest jurisdictional

		agency Low-Impact Development Standard Manual and a National Pollutant Discharge Elimination System permit. The permanent cut and fill slopes for the proposed Mesa Substation and the permanent cut and fill for the access roads and detention pond will be stabilized during construction by utilizing BMPs described in the Project's Storm Water Pollution Prevention Plan (SWPPP). Landscaping will also be installed around the perimeter of the substation site. Appropriate SWPPP BMPs will remain in place and will be maintained until the landscaping has been established.
☒	10. Fills Within 100-Year Floodplains	No fill will occur within the 100-year floodplain.
☒	11. Equipment	Heavy equipment will be utilized in a manner to minimize soil disturbance.
☒	12. Soil Erosion and Sediment Controls	SCE will develop a drainage plan to account for flows that are interrupted by the substation on the upslope side, as well as runoff from within the substation limits, and will ensure that drainage through and runoff from the substation does not result in the alteration of downstream drainage features outside the substation limits. Thus, runoff will not cause significant erosion when compared to pre-construction conditions. In addition, as discussed under General Condition 9, SCE will implement BMPs described in the Project's SWPPP. Commonly used BMPs are storm water runoff, sediment, and erosion control measures, dewatering procedures, and concrete waste management. Landscaping will also be installed around the perimeter of the substation site. Appropriate SWPPP BMPs will remain in place and will be maintained until the landscaping has been established.
☒	13. Removal of Temporary Fills	All temporary impacts will be restored to pre-Project conditions.
☒	14. Proper Maintenance	All constructed facilities will be maintained to ensure reliable service, as well as the safety of the utility workers and the general public, as mandated by the California Public Utilities Commission.
☒	15. Single and Complete Project	The Project is a single and complete project.
☒	16. Wild and Scenic Rivers	The Project is not located in a component of the National Wild and Scenic River System, or designated "study river."
☒	17. Tribal Rights	The Project will not impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
☒	18. Endangered Species	A Biological Assessment has been submitted as part of this Pre-Construction Notification package in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA; 16 United States Code 1536[c]) to address the potential effects of the Project on federally listed threatened and endangered species that are present on site, their designated critical habitat, and proposed/candidate species for ESA protection.
☒	19. Migratory Bird and Bald and Golden Eagle Permits	The Project will be completed in full compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.
☒	20. Historic Properties	The Project will not result in an adverse impact/effect to a historic property or cause a substantial adverse change in the significance of any historic resource.
☒	21. Discovery of Previously Unknown Remains and Artifacts	The Project will notify the District Engineer if any previously unknown historic, cultural, or archeological remains or artifacts are discovered during construction.
☒	22. Designated Critical Resource Waters	The Project will not occur within any critical water resources, including National Oceanic and Atmospheric Administration-managed marine sanctuaries and marine monuments, and National

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		Estuarine Research Reserves.
☒	23. Mitigation	SCE is in the process of developing a Compensatory Mitigation Plan to mitigate for permanent impacts resulting from construction of the Project. As described previously, permanent impacts to all jurisdictional water resources will be compensated at a 1-to-1 ratio, or as required by the permitting agencies.
☒	24. Safety of Impoundment Structures	The Project will not construct any impoundments.
☒	25. Water Quality	SCE will obtain a Water Quality Certification pursuant to Section 401 of the Clean Water Act from the Los Angeles RWQCB.
☒	26. Coastal Zone Management	The Project is not located within the coastal zone.
☒	27. Regional and Case-by-Case Conditions	The Project will be compliant with the Los Angeles District Final Regional Conditions for the 2012 Nationwide Permits.
☒	28. Use of Multiple Nationwide Permits	The Project will not require coverage under multiple Nationwide Permits.
☒	29. Transfer of Nationwide Permit Verifications	N/A
☒	30. Compliance Certification	Following completion of construction, SCE will provide the District Engineer a signed certification documenting completion of the authorized activity and any required compensatory mitigation.
☒	31. Pre-Construction Notification	A Pre-Construction Notification is being submitted for the Project.

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NWP Regional Conditions (RC) checklist:

Los Angeles District (SPL) in Arizona and California:

1. Is the project located within a waterbody supporting any federally-listed threatened or endangered fish species?
   ☐ Yes ☒ No

   If yes, unless determined to be impracticable by the U.S. Army Corps of Engineers (Corps), the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural streambed.

2. Is the project located within the State of Arizona or the Mojave and Sonoran (Colorado) desert regions of California in the Los Angeles District[1]?
   ☐ Yes ☒ No

   [1]The desert regions in California are limited to four USGS Hydrologic Unit Code (HUC) accounting units (Lower Colorado – 150301, Northern Mojave – 180902, Southern Mojave-181001, and Salton Sea – 181002.

   If yes, is the applicant aware of the restriction described below?
   ☐ Yes ☐ No ☒ Not Applicable

   Nationwide Permits (NWP) 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, 39-46, and 48-52 cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands, mudflats, vegetated shallows, or riffle and pool complexes, as defined at 40 CFR Part 230.40-45. The definition of "loss" for this regional condition is the same as the definition of "loss of waters of the United States" used for the Nationwide Permit Program.

3. Is pre-construction notification (PCN) required?
   ☒ Yes ☐ No

   If yes, then in accordance with General Condition 31, the appropriate Corps District shall be notified using either the South Pacific Division PCN Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. The PCN Checklist and application form are available at: http://www.spl.usace.army.mil/Missions/Regulatory.aspx. In addition, the PCN shall include:

   a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States; and
   b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for projects located within the boundaries of the Los Angeles District shall comply with the most current version of the *Map and Drawing Standards for the Los Angeles District Regulatory Division* (available on the Los Angeles District Regulatory Division website at: http://www.spl.usace.army.mil/Missions/Regulatory.aspx); and
   c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the project site, and all waters proposed to be avoided on and immediately adjacent to the project site. The compass angle and position of each photograph shall be documented on the plan-view drawing required in subpart b of this regional condition.

If yes, is the PCN attached?
☒ Yes ☐ No ☐ Not Applicable

4. Are any of the regulated activities located in the following areas:

   a. All perennial waterbodies and special aquatic sites within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California, excluding the Colorado River in Arizona from Davis Dam to River Mile 261 (northern boundary of the Fort Mojave Indian Tribe Reservation). The desert region in California is limited to four USGS HUC accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).
   ☐ Yes ☒ No
   b. All areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007 (72 FR 11092)), in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: http://www.swr.noaa.gov/efh.htm.
   ☐ Yes ☒ No
   c. All watersheds in the Santa Monica Mountains in Los Angeles and Ventura counties bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south.
   ☐ Yes ☒ No
   d. The Santa Clara River watershed in Los Angeles and Ventura counties, including but not limited to Aliso Canyon, Agua Dulce Canyon, Sand Canyon, Bouquet Canyon, Mint Canyon, South Fork of the Santa Clara River, San Francisquito Canyon, Castaic Creek, Piru Creek, Sespe Creek and the main-stem of the Santa Clara River.
   ☐ Yes ☒ No

   If yes to a, b, c, or d, notification to the Corps pursuant to General Condition 31 and Regional Condition 3 is required.

5. Will the proposed activity result in the discharge of fill material into jurisdictional vernal pools?
   ☐ Yes ☒ No

   If yes, an Individual Permit is required unless the discharges are for the purpose of restoration, enhancement, management, or scientific study of vernal pools, which may be authorized under NWPs 5, 6, and/or 27 with the submission of a PCN in accordance with General Condition 31 and Regional Condition 3.

6. a) Is project within the Murrieta Creek or Temecula Creek watersheds in Riverside County?
   ☐ Yes ☒ No
   b) Will the project require new permanent fill in perennial or intermittent watercourses?
   ☐ Yes ☒ No

   If yes to a and b, then projects which would otherwise be authorized under NWPs 29, 39, 42, or 43 (including cases where NWP 14 would be used in conjunction with above NWPs), will require an Individual Permit.

   c) Is the project located in an ephemeral watercourse?
   ☒ Yes ☐ No
   d) Will the project impact greater than 0.1 acre of waters of the U.S.?
   ☒ Yes ☐ No

   If yes to a, c, and d, then projects which would otherwise be authorized under NWPs 29, 39, 42, or 43 (including cases where NWP 14 would be used in conjunction with above NWPs), will require an Individual Permit.

7. a) Is the project a bank stabilization project in San Luis Obispo Creek or Santa Rosa Creek in San Luis Obispo County?
   ☐ Yes ☒ No

   b) Is the project a bank stabilization or grade control structure in Gaviota Creek, Mission Creek, or Carpinteria Creek in Santa Barbara County?
   ☐ Yes ☒ No
   If yes to a or b, then an Individual Permit (Standard Individual Permit or 404 Letter of Permission) is required.

8. Is the project located within the Los Angeles District's Special Area Management Plan (SAMP) areas for the San Diego Creek Watershed and San Juan Creek/Western San Mateo Creek Watersheds in Orange County, California?
☐ Yes ☒ No

   If yes, then the Corps' Division Engineer, through his discretionary authority, has revoked the use of the following 26 selected NWPs within these SAMP watersheds: 3, 7, 12, 13, 14, 16, 17, 18, 19, 21, 25, 27, 29, 31, 33, 39, 40, 41, 42, 43, 44, 46, 49, and 50. Consequently, these NWPs are no longer available in the above watersheds to authorize impacts to waters of the United States from discharges of dredged or fill material under the Corps' Clean Water Act section 404 authority.

9. Will the activity result in the loss of greater than 300 linear feet of intermittent and/or ephemeral streams for NWPs 29, 39, 40, 42, 43, 44, 51, and 52 or result in the loss of greater than 500 linear feet along the bank for NWP 13?
☐ Yes ☒ No

   If yes, is the applicant requesting a waiver of the linear foot limit?
☐ Yes ☐ No ☒ Not Applicable

   If yes, then the request shall include the following:

   a. A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the water body and characters observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line, or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the associated vegetation community (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information; and
   b. An analysis of the proposed impacts to the waterbody in accordance with General Condition 31 and Regional Condition 3; and
   c. Measures taken to avoid and minimize losses, including other methods of constructing the proposed project; and
   d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be compensated, in accordance with 33 CFR Part 332.

10. Will the permittee complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity?
☒ Yes ☐ No

   If no, then the proposed activity may not be in compliance with Regional Condition 10, unless construction of compensatory mitigation prior to or concurrent with commencement of construction of the authorized activity is specifically determined impracticable by the Corps.

   Will the mitigation involve use of a mitigation bank or in-lieu fee program?
☒ Yes ☐ No
   If yes, then the permittee shall submit proof to the Corps of payment prior to commencement of construction of the authorized activity.

ATTACHMENT A: SUPPLEMENTAL INFORMATION

ATTACHMENT A: SUPPLEMENTAL INFORMATION

BOX 5: PROJECT LOCATION(S)

Table 1: Project Location Information summarizes the Mesa 500 kilovolt (kV) Substation Project (Project) location information for the eight United States (U.S.) Army Corps of Engineers- (USACE-) jurisdictional waters, including the approximate latitude and longitude, County Assessor Parcel Numbers (APNs), and U.S. Geologic Survey (USGS) Quadrangle map name.

Table 1: Project Location Information

Feature Number[1]	Approximate Latitude	Approximate Longitude	County APN	USGS Quadrangle Map Name
7-39-S-5	34.032086	-118.119423	5295-001-021 5295-002-801 5295-002-802	El Monte
11-94-S-5	34.035027	-118.115016	5275-001-018 5275-002-803 5275-002-810 5275-002-812 5275-002-814	
7-38-S-1 7-39-S-1 11-138-S-100	34.038079	-118.106642	5275-003-805	
	34.035527	-118.109537	5275-002-810 5275-003-805	
	34.034018	-118.112794	5275-002-810	
7-39-S-6	34.033822	-118.112699	5275-002-810	
7-39-S-2	34.034371	-118.10948	5275-002-808 5275-002-809 5275-002-810	
7-39-S-3	34.036507	-118.106503	5275-003-002 5275-003-800 5275-003-805	
11-136-S-100	34.040556	-118.109133	5265-001-809 5265-001-810	

[1] For the sake of consistency, nomenclature from the Tehachapi Renewable Transmission Project delineation reports was used to identify the mapped features.

Feature Number[1]	Approximate Latitude	Approximate Longitude	County APN	USGS Quadrangle Map Name
11-136-S-101			5265-001-813 5276-013-008	
	34.039782	-118.108817	5265-001-803 5265-001-810 5265-001-812	
7-39-S-11 (Rio Hondo)	34.029353	-118.070839	5271-009-902 5271-010-904	

BOX 6: NATURE OF ACTIVITY

The main activity associated with the Project involves the construction of an approximately 69.4-acre, 500/220/66/16 kV substation (Mesa Substation) in place of the existing, approximately 21.6-acre, 220/66/16 kV Mesa Substation. The Project is located primarily on approximately 86.2 acres of Southern California Edison Company (SCE) fee-owned property. Construction of the proposed Mesa Substation will be conducted in phases, and the power lines from the existing Mesa Substation will be relocated to the new switchracks as they are constructed. All of the existing Mesa Substation structures and equipment will be removed.

SCE currently operates various 220 kV transmission lines, 66 kV subtransmission lines, 16 kV distribution lines, and telecommunications lines that connect to the existing Mesa Substation. As part of the Project, SCE will replace existing structures and lines, as necessary, to allow these existing circuits to connect to the proposed Mesa Substation configuration. In addition, the Project involves the loop-in of one existing 500 kV circuit and two existing 220 kV circuits that currently pass through the existing Mesa Substation property. The Project includes the following elements:

- Construct the 500/220/66/16 kV Mesa Substation. This substation will be constructed on the existing 220/66/16 kV Mesa Substation site. Mesa Substation will be a staffed, 3,360 megavolt-ampere (MVA) at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV, substation with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV at ultimate build-out

- Remove, relocate, and construct new transmission, subtransmission, and distribution structures within existing SCE transmission and substation fee-owned properties, rights-of-way (ROWs), and franchise areas to accommodate the new Mesa Substation configuration

- Install new telecommunications lines and remove old telecommunications lines on existing subtransmission and distribution structures

- Install temporary steel pole structures and conductor to temporarily connect the Eagle Rock-Mesa 220 kV Transmission Line to Goodrich Substation and provide a second line of service to the City of Pasadena during the line outage required to loop-in the existing Goodrich-Laguna Bell 220 kV Transmission Line into Mesa Substation

- Minor internal modifications within the existing fenced perimeter of multiple existing substations

- Convert three spans of existing streetlight source lines from overhead to underground below one span of the Lighthipe-Mesa 220 kV Transmission Line

The components of the Project are described in more detail in the following subsections, and are shown in Figure 1: Project Components Overview Map in Attachment B: Figures.

Mesa Substation will be a 500/220/66/16 kV staffed, automated substation, operating at 3,360 MVA at 500/220 kV, 840 MVA at 220/66 kV, and 56 MVA at 66/16 kV. The substation capacity will have the potential to expand to 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV, as necessary. The proposed Mesa Substation will be constructed on approximately 69.4 acres within approximately 86.2 acres of SCE fee-owned property located in the City of Monterey Park, in Los Angeles County. The existing Mesa Substation occupies approximately 21.6 acres—within the same approximately 69.4-acre area that the proposed Mesa Substation will be constructed. Figure 2: Proposed Substation Layout in Attachment B: Figures shows the dimensions of the substation parcel and the placement and orientation of the major components that will be included in the construction of Mesa Substation. Construction of Mesa Substation includes the following main components:

- Construct a new 500 kV switchrack with three 500/220 kV transformer banks

- Loop-in the existing Mira Loma-Vincent 500 kV Transmission Line (which currently passes through the substation without landing on a rack position) into the new 500 kV switchrack with new overhead getaways

- Replace existing 220/66/16 kV switchracks, three 220/66 kV transformer banks, and two 66/16 kV transformer banks

- Relocate eight existing 220 kV transmission lines to the new 220 kV switchrack with new overhead getaways

- Loop-in the existing Goodrich-Laguna Bell 220 kV and Laguna Bell-Rio Hondo 220 kV transmission lines (which both currently pass through the substation without landing on a rack position) into the new 220 kV switchrack with new overhead getaways

- Relocate 16 existing 66 kV subtransmission lines to the new 66 kV switchrack with new underground getaways

- Relocate five existing 16 kV distribution lines to the new 16 kV switchrack with new underground getaways

- Construct two new Mechanical Electrical Equipment Rooms (MEERs), a Test and Maintenance Building, and an Operations Building
- Relocate various telecommunications cables
- Remove a Metropolitan Water District 72-inch-diameter waterline that currently runs through the middle of the proposed Mesa Substation property and replace it with an 84-inch-diameter waterline to a westerly location on the substation site
- Relocate two sets of third-party cellular telephone buildings, towers, and antennas to the northeast corner of the property
- Install new 16 kV distribution Station Light and Power supplies from the existing franchise areas adjacent to Mesa Substation to replace the existing supplies

Development of the substation site includes a storm water system. A detention pond will be developed in the southwest corner of the substation site as depicted in Figure 2: Proposed Substation Layout in Attachment B: Figures. The detention pond will be approximately 1 acre with a capacity of approximately 455,000 gallons and will be constructed from mulch, gravel, soil, and geotextile membrane layers. Water runoff around the transformer banks will flow into a catch basin system installed around each transformer, which connects to a drainage pipe that flows into a concrete lined detention basin, approximately 100 feet long, 50 feet wide, and 20 feet deep. Drainage systems will be constructed along the perimeter of the substation to direct interior surface runoff to the detention pond.

Primary access to the proposed Mesa Substation will be provided from Potrero Grande Drive via a new asphalt and/or concrete access driveway. Secondary access will be provided via a new access driveway off of East Markland Drive. The entrance at Potrero Grande Drive will be approximately 150 feet wide, and the entrance at East Markland Drive will be approximately 25 feet wide. Gates will be installed at both driveway entrances. SCE will construct a sidewalk along Potrero Grande Drive outside of the substation and will provide landscaping around the entire perimeter.

The proposed substation will be enclosed on all sides by a perimeter wall measuring at least 10 feet high, which will satisfy City of Monterey Park requirements for materials and aesthetics. Barbed wire and/or razor wire will be affixed near the top of the perimeter enclosure inside of the substation and will not be visible from the outside.

Construction

Staging Areas

Construction of the Project will require the establishment of temporary staging yards. Two types of staging yards will be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards will be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yards may have construction trailers for supervisory and clerical personnel to serve as office and meeting locations. Staging yards may be lit for security

purposes. Normal maintenance and refueling of construction equipment will also be conducted at these yards. All refueling and storage of fuels will be in accordance with the Project's Storm Water Pollution Prevention Plan (SWPPP).

All proposed staging yards will be located within SCE fee-owned property. The preferred acreage for each yard will be 5 to 25 acres in size, depending on land availability and intended use. Preparation of the staging yards will include temporary perimeter fencing and, depending on existing ground conditions at the site, clearing and grubbing and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock in some locations. Land disturbed at the staging yards will either be returned to pre-construction conditions or left in its modified condition.

Work Areas

Transmission and subtransmission construction work areas serve as working areas for crews and where Project-related equipment and/or materials are placed at or near each structure location, within SCE property, existing public ROWs, or franchise areas.

The new structure pad locations and laydown/work areas will first be cleared of vegetation and/or graded as required to provide a reasonably vegetation-free and level surface for structure installation. Sites requiring grading will be graded such that water will run toward the direction of the natural drainage. In addition, drainage will be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area will be compacted to at least 90-percent relative density, and will be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a temporary crane pad. Crane pads will occupy an area of approximately 50 feet by 50 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pads may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad will be determined during final engineering for the Project and the selection of the appropriate construction methods to be used by SCE or its Contractor.

Access Roads and/or Spur Roads

Where required, a network of existing access roads could be improved and new roads will be constructed to current SCE road specifications to support the construction and Operation and Maintenance (O&M) of the Project.

Typical transmission access consists of a network of unpaved and paved roads accessed from public and private roads. These access roads include a network of through roads and spur roads that are used to access transmission facilities. Access to the transmission line ROW for construction activities and future O&M activities associated with the Project will be accomplished by utilizing this network of roads.

During construction of the Project, crews will utilize existing public roads and existing transmission access roads to the maximum extent feasible. New access roads will be constructed in accordance with current SCE practices for safety during construction and O&M.

Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities. Typical construction activities associated with rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities in order to provide a riding surface that is capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Typical construction activities associated with new roads generally include similar activities as described for the rehabilitation of existing unpaved roads, but may also include the following additional construction requirements that depend upon the existing land terrain:

- **Existing relatively flat terrain with grades up to four percent:** Construction activities are generally similar to rehabilitation activities on existing unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, water bars, and culverts). Detailed information on locations requiring drainage improvements will be provided during final engineering.
- **Existing rolling terrain with grades of five to 12 percent:** Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements (e.g., geogrid reinforcement). The extent of retaining walls and slope stability improvements will be determined during final engineering, as will detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.
- **Existing mountainous terrain with grades over 12 percent:** Construction activities will include rolling terrain construction activities and will also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements will be provided during final engineering.

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements and earth-retaining structures will be determined during final engineering.

Generally, access roads will have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width will be widened and will generally range up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients will be leveled so that sustained grades generally do not exceed 14 percent. Curves will typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where 50-foot minimum radii cannot be achieved.

Access roads will typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration will be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as a construction pad for construction activities. If a construction pad is built, it will remain a permanent feature for O&M.

The Project access roads generally follow the proposed transmission line route. Transmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites due to terrain considerations and topographic constraints.

Approximately 5.6 miles of existing dirt access roads on SCE property and existing ROWs will be used to access the Project work areas. If improvements are required, they will be conducted in accordance with existing O&M practices.

Transmission Line Construction

Trenching

Construction activities will begin with the survey of existing underground utilities along the proposed underground subtransmission source line route.

The Project includes a total of approximately 5.5 miles of new underground 66 kV subtransmission lines and associated transition and support structures. A trench measuring approximately 2 feet wide and 2.5 feet deep will be required to place the 66 kV subtransmission line underground. Trenching may 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 appropriate depth with a backhoe or similar equipment, and install the new duct bank. Once the duct bank has been installed, the trench will typically be backfilled with a sand slurry mix. Excavated materials will be reused as fill for the Project and/or be disposed of at an off-site disposal facility in accordance with applicable laws if necessary. Should groundwater be encountered, it will be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

The trench for underground construction will be widened and/or shored where appropriate to meet California's Division of Occupational Safety and Health requirements. Trenching will be staged so that open trench lengths will not exceed that which is required to install the duct banks. Where needed, open trench sections will have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access will be arranged with local agencies in advance of construction activities.

Subtransmission Vault Installation

Installation of each vault will typically take place over a one-week period depending on soil conditions. First, the vault pit will be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base will 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 will be added and set to match the existing grade. The excavated area will be backfilled

with a sand slurry mix to a point just below the top of the vault roof. Excavated materials, if suitable, will be used to backfill the remainder of the excavation and any excess spoils will be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area will be restored as required.

Fiber Optic Installation

New underground conduit and structures will typically be installed with a backhoe. The trench will be excavated to approximately 24 inches wide and a minimum of 36 inches deep. PVC conduit will be placed in the trench and covered with approximately 30 inches of concrete slurry then backfilled and compacted. For manholes and pull boxes, a hole will be excavated between 6 and 9 feet deep, 7 and 8 feet long, and 6 and 7 feet wide. The manhole or pull box will be lowered into place, connected to the conduits, and the hole backfilled with concrete slurry.

Jack-and-Bore

SCE will use the horizontal jack-and-bore construction technique to install the conduit at locations along the underground route where open-cut trenching may not be permitted or may not be otherwise feasible or preferred, such as at railroad and trolley tracks, roads, and drainage channel crossings.

Jack-and-bore is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations will begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits will typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits will be between 10 and 20 feet, depending on the facilities that will be crossed. It is anticipated that between 590 and 1,180 cubic yards (CY) of material will be excavated to facilitate each jack-and-bore installation required for the Project. Following the duct bank installation, the bore pits will be backfilled using native material, and the duct bank will be covered with at least 36 inches of engineered or native fill, as appropriate. Soil not used for backfill will be hauled off site and disposed of at an approved facility.

After establishing the bore pits, boring equipment will be delivered to the site and then installed into the bore pit at the sending end. Jack-and-bore crossings involve pushing or boring a 36- to 42-inch steel casing through the earth and under the obstacle being crossed. Depending on soil conditions, water is often used to lubricate the auger during the boring process. The casings will typically be installed at least 3 to 4 feet below the obstacle, or as required by the relevant permitting agency. Once the casing is in place, the conduit will be installed within the casing by using spacers to hold them in place, and then the remaining space will be backfilled with a slurry mix. The casings will be left in place to protect the conduit once it has been installed. An approximately 150-foot by 150-foot temporary construction area will be required at each bore pit location.

Mesa Substation Construction

Prior to construction, the Mesa Substation site will be cleared and graded to prepare the site for construction. Approximately 83.3 acres of the site will be graded. Approximately 20 acres of on-site vegetation will be removed during the clearing, grubbing, and grading for the construction of the proposed Mesa Substation, including trees along the frontage and within the fence line of the

existing Mesa Substation site. Mowers, excavators, front-end loaders, and/or D-9 bulldozers will be utilized to conduct the clearing and vegetation removal activities.

Construction of the proposed Mesa Substation will occur in phases, as shown in the attached Figure 3: Grading Phase Areas in Attachment B: Figures. Phase 1 involves preliminary activities, such as relocation of the Metropolitan Water District of Southern California water pipeline, vegetation removal, removal of some equipment stored on site, and installation of temporary fencing. This phase includes all construction associated with the following:

- the first eight 220 kV switchrack positions,
- the entire 66 kV and 16 kV switchracks,
- two 220/66 kV transformer banks,
- two 66/16 kV transformer banks,
- two 66 kV capacitor banks,
- two 16 kV capacitor banks, and
- the necessary underground and overhead facilities to connect the relocated circuits (of all three voltage levels).

This phase also includes, but is not limited to, activities such as mass grading; access road construction, including retaining walls; construction of the senior and junior Mechanical and Electrical Equipment Rooms; assembly and erection of various transmission and subtransmission overhead structures; and possibly the construction of the Operations Building and the Test and Maintenance Building. This phase involves the import of approximately 100,000 CY of fill to develop the western portion of the proposed Mesa Substation site. Phase 1 will generally occur between the second quarter of 2016 and the fourth quarter of 2018.

Phase 2 involves the extension of the new 220 kV switchrack, one 220/66 kV transformer bank, one 66 kV capacitor bank, and the necessary underground and overhead facilities to connect the relocated circuits (of both voltage levels). This will include, but is not limited to, activities such as decommissioning and removal of the western portion of the existing 220 kV switchrack; grading and civil improvements, including the detention basin and other drainage improvements; construction of the southern portion of the new 220 kV switchrack; and assembly and erection of various transmission and subtransmission overhead structures. This phase will generally occur between the second quarter of 2018 and the first quarter of 2019.

Phase 3 includes decommissioning and demolition of the balance of the existing substation, construction of the new 500 kV switchrack on the eastern portion of the site, and connecting the transmission lines. This phase will include, but is not limited to, activities such as structural and civil demolition and access road construction, including retaining walls; installation of foundations and piping for three 500/220 kV transformer banks, including Spill Prevention, Control and Countermeasure Plan facilities; and assembly and erection of various transmission overhead switchracks and transmission towers. This phase will generally take place between the first quarter of 2019 and the fourth quarter of 2020. However, post-construction testing after the substation is operational will occur through the second quarter of 2021.

Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. A

summary of the anticipated grading quantities for Mesa Substation is provided in Table 2: Grading Quantities Summary. Phase 1 construction of Mesa Substation will require approximately 100,000 CY—or approximately 10,000 haul truckloads—of imported fill to develop the substation site. Phase 3 will require approximately 50,000 CY—or approximately 5,000 haul truckloads—of import material to be hauled to the substation site. Haul trucks will operate periodically and as needed during the grading phase of construction. In general, no more than 100 haul truck trips per day will be required for the import/export activities.

Table 2: Grading Quantities Summary

Phase	Fill Quantity (CY)	Cut Quantity (CY)	Import/Export Quantity (CY)	Source/ Destination
1	250,000	150,000	100,000	Quarry within 45 miles of the site
2	5,000	70,000	(65,000)	Stockpile for Phase 3
3	325,000	375,000	(50,000)	Landfill within 45 miles of the site
Total	**580,000**	**595,000**	**--**	**--**

Notes: Export values in Phase 2 are included in the cut values in Phase 3. Phase 3 raw cut volume is 310,000 CY. "--" indicates "not applicable."

Vegetation Clearance

The proposed Mesa Substation site will require vegetation clearing (i.e., tree and brush removal) within its boundaries to prepare the approximately 69.4-acre site for installation of the substation equipment.

Vegetation clearing (i.e., tree and brush removal and tree trimming) may also be required in the proposed transmission ROWs to accommodate construction work areas, and to reduce the potential for fire during construction activities.

Cleanup and Post-Construction Restoration

SCE will clean up all areas that will be temporarily disturbed by construction of the Project (which may include the material staging yards, stringing sites, and splicing sites) 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 of the Project.

If restoration and/or revegetation occurs within sensitive habitats, a Habitat Conservation and Restoration Plan, or "Revegetation Plan," will be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

Construction Workforce and Equipment

Construction will be performed by either SCE construction crews, contractors, or a combination of both. If SCE construction crews are used, they typically will be based at SCE's local facilities (e.g., service centers, substations, etc.) or a temporary material staging yard set up for the

Project. Contractor construction personnel will be managed by SCE construction management personnel and based out of the Contractor's existing yard (if they have one in the area) or a temporary material staging yard set up for the Project. SCE anticipates a total of 84 to 242 construction personnel will be working on any given day. SCE anticipates that crews will work concurrently whenever possible; however, the estimated deployment and number of crew members will vary depending on factors such as material availability, resource availability, and construction scheduling.

In general, construction efforts will occur in accordance with accepted construction industry standards. If feasible, SCE will comply with local ordinances for construction activities.

Construction Schedule

SCE anticipates that construction of the Project will take approximately 57 months. Construction of the Project is anticipated to begin in April 2016, and will end in December 2020 with energization of the substation. Construction will commence following California Public Utilities Commission (CPUC) approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

BOX 6: PROJECT PURPOSE

SCE is a public utility that provides electric service to a population of approximately 14 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California. The Project will address reliability concerns resulting from the pending shutdown of certain generation facilities which rely on Once Through Cooling Technology as well as the recent retirement of the San Onofre Nuclear Generating Station. The Project will address these concerns by providing additional transmission import capability, allowing greater flexibility in the siting of new generation, and reducing the total amount of new generation required to meet local reliability needs in the Western Los Angeles Basin area.

BOX 6: PROPOSED DISCHARGE OF DREDGE AND/OR FILL MATERIAL

Information for each of the water features located on the Project site—including the area of each USACE-jurisdictional feature, the amount of permanent and temporary impacts, and the Project activities resulting in impacts to these features—is provided in Table 3: USACE-Jurisdictional Resources and Impacts within the Project Site. As shown in Table 3: USACE-Jurisdictional Resources and Impacts within the Project Site, a total of approximately 0.37 acre of waters of the U.S. will be permanently impacted, and approximately 0.09 acre of waters of the U.S. will be temporarily impacted by construction of the Project. Figure 4: Impacts to Waters of the U.S. in Attachment B**:** Figures depicts the location of the Project components in relation to each of the USACE-jurisdictional features and identifies which of the features are anticipated to be impacted. Attachment C: Photographs of Impacted Water provides photographs of the USACE-jurisdictional features located on site that will be impacted by construction of the Project.

Table 3: USACE-Jurisdictional Resources and Impacts within the Project Site

Feature Number	Feature Type	Approximate USACE-Jurisdictional Area (acres/ linear feet)	Approximate Impact to USACE-Jurisdictional Feature (acres/linear feet)[3]		Approximate Fill Volume to be Discharged (CY)	Impact Description
			Permanent	Temporary		
7-39-S-5	Ephemeral drainage	0.04/ 715.81	--	0.04/ 715.81	--	This feature will be temporarily impacted by a transmission tower disturbance area.
11-94-S-5	Ephemeral drainage	0.11/ 1,987.41	0.11/ 1,987.41	--	28.91	This feature will be permanently impacted by the construction of the Mesa Substation.
7-38-S-1 7-39-S-1 11-138-S-100	Ephemeral drainage	0.01/ 363.85	0.01/ 363.85	--	1.62	This feature will be permanently impacted by the construction of Mesa Substation.
		0.08/ 2,179.78	0.08/ 2,179.78	--	68.78	This feature will be permanently impacted by construction of Mesa Substation.
		0.07/ 458.41	0.07/ 458.41	--	8.06	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-6	Ephemeral drainage	0.03/ 441.81	0.03/ 441.81	--	3.27	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-2	Ephemeral drainage	0.03/ 423.04	0.03/ 423.04	--	7.61	This feature will be permanently impacted by construction of Mesa Substation.
7-39-S-3	Ephemeral drainage	0.04/ 440.19	0.04/ 440.19	--	1.45	This feature will be permanently impacted by construction of Mesa Substation.
11-136-S-100 11-136-S-101	Ephemeral drainage	0.03/ 376.54	--	0.03/ 376.54	--	This feature will be temporarily impacted as a result of a subtransmission tower disturbance area.

Feature Number	Feature Type	Approximate USACE-Jurisdictional Area (acres/ linear feet)	Approximate Impact to USACE-Jurisdictional Feature (acres/linear feet)[3]		Approximate Fill Volume to be Discharged (CY)	Impact Description
			Permanent	Temporary		
		0.02/ 260.17	--	0.02/ 260.17	--	This feature will be temporarily impacted as a result of a subtransmission tower disturbance area.
7-39-S-11 (Rio Hondo)	Intermittent Drainage	0.15/ 200.00	--	--	--	There will be no impacts to this feature.
TOTAL	--	**0.61/ 7,847.01**	**0.37/ 6,294.49**	**0.09/ 1,352.52**	**122.49**	--

Figure 5: Impacts to Waters of the U.S.: Typical Plan and Cross-Section Drawing in Attachment B: Figures depicts how drainages will be permanently filled to allow for construction of the substation.

BOX 6: TYPES(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS

As provided in Table 2: Grading Quantities Summary, on page A-10, above, approximately 100,000 CY of imported fill will be required during Phase 1. An additional 50,000 CY of imported fill will be required during Phase 3. Approximately 122.49 CY of fill—consisting of native and imported soil—will be discharged into waters of the U.S. The fill and base materials are anticipated to be obtained from a quarry within 45 miles of the site. On-site material will be reused to the extent possible, as recommended by the Geotechnical Engineer. Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations.

BOX 6: DESCRIBE DIRECT AND INDIRECT EFFECTS CAUSED BY THE ACTIVITY

Construction of the Project will result in direct temporary impacts of approximately 0.09 acre, and direct permanent impacts of 0.37 acre to waters under the jurisdiction of the USACE. SCE will mitigate for permanent impacts to all jurisdictional water resources at a 1-to-1 ratio, or as required by the USACE. Indirect impacts to non-jurisdictional wetlands could also result from spillage of construction materials, as well as from erosion and sedimentation. SCE will prepare and implement a drainage plan to minimize surface water and erosion impacts. Existing drainage structures, facilities, and devices may need to be modified, removed, replaced, and/or relocated to meet post-development hydrology conditions. The substation pad area will be finish-graded from a high point elevation at the east end of the pad to the perimeter at a slope of approximately one percent. Drainage inlets and pipes will be constructed to collect and divert storm water runoff. The surrounding area will be regraded and the low points will be filled to provide positive surface drainage to the southwest.

Currently, the Mesa substation site generally drains by sheet flow into ephemeral drainages, which exit the site at the southwest corner. These ephemeral drainages connect to storm drains that connect to the Rio Hondo Channel, which flows into the Los Angeles River. A detention pond will be constructed in the southwest corner of the new substation site, and other site and source control best management practices (BMPs) will be included in the design to help mitigate surface runoff. Drainage systems will be constructed along the perimeter of the substation to direct interior surface runoff to the retention basin. The site will be designed to comply with the latest jurisdictional agency Low-Impact Development Standard Manual and a National Pollutant Discharge Elimination System permit.

The permanent cut and fill slopes for the proposed Mesa Substation and the permanent cut and fill for the access roads and retention basin will be stabilized during construction by utilizing BMPs described in the Project's SWPPP. Landscaping will also be installed around the perimeter of the substation site. Appropriate SWPPP BMPs will remain in place and will be maintained until the landscaping has been established.

BOX 6: POTENTIAL CUMULATIVE IMPACTS OF PROPOSED ACTIVITY

Table 4: Cumulative Projects Within 1 Mile of the Project Area summarizes cumulative projects within 1 mile of the Project. The construction of the Project will result in direct temporary impacts of approximately 0.09 acre, and direct permanent impacts of 0.37 acre to waters of the U.S. Two cumulative projects—the Montebello Hills Master Planned Community and the Monterey Park Market Place—have the potential to result in impacts to waters of the U.S. Any projects impacting waters within the cumulative scenario will be subject to the same federal and State permitting requirements for impacts to waters of the U.S., which are intended to minimize and mitigate for impacts to these resources, both at the project level and in a regional context. As a result, cumulative impacts to USACE- jurisdictional waters are expected to be minimized with the implementation of permit conditions.

BOX 9: MEASURES TAKEN TO AVOID AND MINIMIZE IMPACTS TO WATERS OF THE UNITED STATES

No impacts to the Rio Hondo would occur as a result of the Project. SCE will mitigate for permanent impacts to all USACE-jurisdictional water resources at a 1-to-1 ratio, or as required, in accordance with applicant-proposed measure (APM-) BIO-08 from the Final Proponent's Environmental Assessment prepared for the Project. SCE will implement the following measures to minimize impacts to jurisdictional resources:

- **APM-BIO-02: Revegetation Plan.** To the extent feasible, SCE will minimize impacts and permanent loss to riparian habitat, native trees, and other vegetation that is regulated by federal, State, or local agencies, and/or that provides suitable habitat for special-status species. Impacts will be minimized at construction sites by flagging native vegetation to be avoided. If unable to avoid impacts to protected vegetation, a Revegetation Plan would be prepared in coordination with the appropriate agencies for areas of native habitat temporarily and/or permanently impacted during construction. The Revegetation Plan will describe, at a minimum, which vegetation restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Project's SWPPP) will be implemented in the Project area. The Revegetation Plan will also include the species or habitats that could be impacted, the replacement or restoration ratios (as appropriate), the restoration methods and techniques, and the monitoring periods and success criteria, as identified in each measure.

- **APM-BIO-08**: **Compensation for Permanent Impacts.** Permanent impacts to all jurisdictional water resources will be compensated at a 1-to-1 ratio, or as required by the USACE, California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB).

Table 4: Cumulative Projects Within 1 Mile of the Project Area

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	2015 Mesa Substation 66 kV capacitor	Mesa Substation	Mesa Substation	Within	Approved	2018
N/A	New Mesa Substation Distribution Substation Plan (DSP) circuit	Mesa Substation	Mesa Substation	Within	Pending	2021
State Clearinghouse Number (SCN) 1999051058	Monterey Park Market Place: Approximately 600,000-square-foot commercial retail center, gas station, and 2,333 parking spaces at Greenwood Avenue and Potrero Grande Avenue	City of Monterey Park	New telecommunications line from transmission tower M40-T3 to Mesa Substation	Adjacent	Approved	2015 (Estimated Start)-2016[2]
General Plan Amendment (GPA-) 13-02 Specific Plan (SP-) 13-02	2015 Potrero Grande Drive Specific Plan: 80 residential units on an approximately 9.15-acre parcel at 2015 Potrero Grande Drive	City of Monterey Park	New telecommunications line from transmission tower M40-T3 to Mesa Substation	Adjacent	Approved	2014-2016[3]
SP-13-01	500 East Markland Drive Specific Plan: An approximately 127,492-square-foot, four-story, public self-storage facility on	City of Monterey Park	Telecommunications line reroute between Mesa and Harding substations	Adjacent	Approved	2014-2015[4]

[2] The construction schedule was obtained from the Monterey Park Market Place developer.
[3] The construction schedule was obtained from the Mitigated Negative Declaration, adopted by the City of Monterey Park on February 5, 2014.
[4] The construction schedule was obtained from City of Monterey Park staff.

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
	approximately 1.12 acres at the southwest corner of Potrero Grande Drive and Markland Drive					
N/A	Jay Imperial Park: Currently vacant SCE transmission corridor properties along San Gabriel Boulevard will be redeveloped as open space, complete with walking trails, grass, native landscaping, and related amenities	City of Rosemead	New telecommunications line from transmission tower M40-T3 to Mesa Substation	Adjacent	Capital Improvement Project for the 2014-2015 fiscal year	--
N/A	Thienes Avenue (East): Cold milling existing asphalt concrete and asphalt concrete overlay; removal and replacement of damaged sidewalk, driveways, curbs and gutters; and other items, such as traffic striping, manhole, water, and gas valve adjustments on Durfee Avenue to County Park Entry and to San Gabriel River	City of South El Monte	New telecommunications line from transmission tower M38-T5 to Mesa Substation	Adjacent	Engineering Project for 2015	2015

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	South San Gabriel Bikeway Access Improvements: Installation of 2.43 miles of Class II Bike Lane and 1 mile of four- to three-lane road diet. Located on North San Gabriel Boulevard	Unincorporated Los Angeles County	New telecommunications line from transmission tower M40-T3 to Mesa Substation	Adjacent	Design	Construction estimated to begin in Spring 2017
SCN 2007081156	Tehachapi Renewable Transmission Project: Construction of Segments 7, 8, and 11 of approximately 173 miles of transmission line with upgrades to several substations	Various cities, including the cities of Monterey Park, Montebello, and Pasadena	--	Adjacent	Under construction	2010-2015
N/A	Harding Substation Elimination: Cutover 178 transformers from 4 kV to 16 kV and elimination of substation equipment at the Corner of Montebello Boulevard and Lincoln Avenue	City of Montebello	Telecommunications line reroute between Mesa and Harding substations	Adjacent	--	2015
N/A	Montebello Boulevard/Towne Center Drive Resurfacing Median and Landscape Enhancements:	City of Rosemead	New telecommunications line from transmission tower M40-T3 to Mesa Substation	0.9, 0.42, and adjacent	Capital Improvement Project for the 2014-2015 fiscal year	--

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
	Resurfacing Montebello Boulevard and Towne Center Drive, landscaping medians on Montebello Boulevard and San Gabriel Boulevard and in public ROW areas adjacent to the California Department of Transportation maintenance yard					
SCN 2008011122	Montebello Hills Master Planned Community: An approximately 488-acre master planned community at Montebello Boulevard and Paramount Boulevard, including approximately 1,200 single-family residential units; approximately 315 acres of open space (including approximately 260 acres of federally protected habitat preserve, an approximately 5.5-acre public park, and approximately 13.5 acres of dedicated	City of Montebello	New telecommunications line from transmission tower M38-T5 to Mesa Substation	0.3	Draft Environmental Impact Report (EIR) released in March 2009; Final EIR is being prepared	--

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
	accessible trails and greenbelts); and an approximately 1.5-acre community center					
N/A	Durfee Avenue Construction Activity: 116-town home residential development; 6.02-acre gated community at 1181 Durfee Avenue	City of South El Monte	New telecommunications line from transmission tower M38-T5 to Mesa Substation	0.32	In construction	April 2014-Spring 2016
N/A	New distribution circuit required at the corner of Walnut Grove Avenue and Landis View Lane	City of Rosemead	New telecommunications line from transmission tower M40-T3 to Mesa Substation	0.4	--	2015
N/A	6039 Florence Avenue: 27,000-square-foot new store	City of Bell Gardens	Street light source line conversion from overhead to underground within Loveland Street	0.44	Preliminary Review	--
N/A	Cal Royal Products: 39,000-square-foot addition to existing 106,748-square-foot building at 6605 Flotilla Street	City of Commerce	Replacement of an existing lattice steel tower (LST) on the Goodrich-Laguna Bell 220 kV Transmission Line	0.56	Plan Check as of January 2, 2015	--
Project ID: RDC0015693	Allston Street Neighborhood: Preventative Maintenance to Allston Street Neighborhood	East Los Angeles	Replacement of an existing LST on the Goodrich-Laguna Bell 220 kV Transmission Line	0.64	Design	Estimated start: July 2017

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	Pace Apartments: 29 apartment units at 8540-8642 Beverly Boulevard	City of Pico Rivera	New telecommunications line from transmission tower M38-T5 to Mesa Substation	0.66	Project appeal denied for appeal by City Council on September 23, 2014. Conditional Use Permit denied by Planning Commission on September 3, 2014	--
SCN 2007071094	Las Encinas Hospital Master Development Plan: Construction of a new psychiatric hospital and expansion of senior living services on an approximately 24.7-acre site, including the removal of approximately 44,398 square feet of existing structures and the construction of approximately 309,012 square feet of new structures, resulting in a total building square footage of	City of Pasadena	Temporary 220 kV line loop-in at Goodrich Substation	0.7	Approved	Phase 1: October 2014-April 2016 Phase 2: April 2016-April 2017 Phase 3: July 2016-February 2017 Phase 4: May 2017-October 2017

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
	approximately 528,505 square feet					
N/A	Residential Development: 14-unit condominium at 3928 Rosemead Boulevard	City of Pico Rivera	New telecommunications line from transmission tower M38-T5 to Mesa Substation	0.71	Final Tract Map submitted to Public Works in October 2014	--
N/A	Florence Avenue Bridge Rehabilitation at Rio Hondo River: Rehabilitation of the Florence Avenue Bridge over the Rio Hondo River	City of Downey	Street light source line conversion from overhead to underground within Loveland Street	0.86	--	August 2016-March 2017
N/A	Garvey Avenue Specific Plan: Planned commercial, industrial, and residential development along Garvey Avenue, from New Avenue to San Gabriel Boulevard	City of Rosemead	New telecommunications line from transmission tower M40-T3 to Mesa Substation	0.97	Draft EIR expected in May 2015	--
SCN 2008081042	MTA-Interstate (I-) 710 Traffic/Freeway Project: Improvements to I-710	City of Bell Gardens	Street light source line conversion from overhead to underground within Loveland Street	0.98	Release Final I-710 Corridor Project EIR/EIS for public review and comment: Winter 2015/2016	--

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
IGR/CEQA No. 140538AL-MND Case no.: GPA 12-02, Zone Change (ZC) 12-02, Tentative Tract Map (TTM) 72529, Design Review (DR) 12-05, and Alley Vacation	Garvey Del Mar Mixed Use Project: Mixed use development located on 1.14 acres, including the demolition of all existing structures to construct a five-story, mixed use development with 15,553 square feet of retail/restaurant space on the basement/first and second floors and 60 residential units on the third through fifth floors, comprising 54,609 square feet, for a total built area of 70,162 square feet; located at 7801-7825 Garvey Avenue, 3012 Del Mar Avenue, and 3017 Brighton Street	City of Rosemead	New telecommunications line from transmission tower M40-T3 to Mesa Substation	0.99	Mitigated Negative Declaration approved by the Planning Commission in December 2014	--
N/A	Suva Street Bridge Rehabilitation at the Rio Hondo River: Rehabilitation of the Suva Street Bridge over the Rio Honda River (Los Angeles County Project)	City of Downey	Street light source line conversion from overhead to underground within Loveland Street	1.0	--	January 2016-June 2016

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	New distribution circuit required at the corner of Paramount Boulevard and Elba Street	City of Pico Rivera	New telecommunications line from transmission tower M38-T5 to Mesa Substation	1.0	--	2015
N/A	Pavement Rehabilitation Project: Resurfacing or reconstructing street sections (8.7 land miles) throughout the city and repair of damaged curb and gutter, driveway approaches, and sidewalks	City of Bell	--	--	Capital Improvement Project for 2014-2015 Fiscal Year	--
N/A	Slurry Seal Project: Apply asphaltic emulsion to various city streets in order to rejuvenate the existing pavement surface and extend the life of the existing asphalt concrete	City of Bell	--	--	Capital Improvement Project for the 2014-2015 Fiscal Year	--
N/A	Sidewalk Replacement: Part of the city's routine maintenance program to repair or replace damaged sidewalks throughout the city	City of Bell	--	--	Capital Improvement Project for the 2014-2015 Fiscal Year	--

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
Project number 3758	Project 2: Gallant/Lanto/Ajax/Ed Selinda/Gotham	City of Bell Gardens	Street light source line conversion from overhead to underground within Loveland Street	--	Design Complete	--
Project number 3768	Street Improvement Project: Lubec Street, El Selinda Avenue, and Adamson Avenue	City of Bell Gardens	Street light source line conversion from overhead to underground within Loveland Street	--	--	--
Project number 3763	Residential Street Rehabilitation Project: Suva/Live Oak/Loveland Street	City of Bell Gardens	Street light source line conversion from overhead to underground within Loveland Street	--	Design	--
N/A	Residential Street Resurfacing: Pavement rehabilitation of residential streets citywide	City of Downey	--	--	--	2014-2015

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	High Speed Rail: The California High-Speed Rail Authority is responsible for planning designing, building, and operation of the first high-speed rail system in the nation, and is currently refining alignment alternatives appropriate for the urban rail corridor from Los Angeles to Anaheim, and Los Angeles to San Diego	--	New telecommunications line from transmission tower M38-T5 to Mesa Substation	--	Design	--
SCN 2010011062	Metro Gold Line Extension: The Los Angeles County Metropolitan Transit Authority (Metro) is studying two light rail alternatives to extend the current Gold Line Eastside light rail beyond the Atlantic Station in East Los Angeles	To be determined	New telecommunications line from transmission tower M38-T5 to Mesa Substation	--	A draft EIR has been completed, and further analysis is required for both of the alternatives	--
N/A	Subtransmission Reconductor: 2.83 miles of reconductor on the Mesa-Laguna Bell – Narrows 66 kV line	City of Montebello	Telecommunications line reroute between Mesa and Harding substations	--	--	2015

Project Identification Number	Project Description	Location	Nearest Project Component	Approximate Distance to Project (Miles)	Status	Anticipated Construction Schedule
N/A	Subtransmission Reconductor: 0.58 mile of reconductoring on the Mesa-Rush No. 3 line. New line will tap off of Mesa-Rosemead No. 2 Line 1.5 miles to Rush Substation, located on the southeast corner of Walnut Grove Avenue and Rush Street	Between Mesa and Rush substations (within the cities of Monterey Park and Rosemead)	Telecommunications line reroute between Mesa and Harding substations	--	--	2015

Notes: "N/A" = Not Applicable; "--" = information not available.

Sources: California High Speed Rail Authority (2014), City of Bell (2014), City of Commerce (2014), City of Downey (2014), City of Monterey Park (2014a), City of Monterey Park (2014b), City of Monterey Park (2014c), City of Montebello (2009), City of Rosemead (2014a), City of Rosemead (2014b), City of Rosemead (2014c), City of Rosemead (2014d), City of Pasadena (2014), City of Pico Rivera (2014), City of South El Monte (2014), CPUC (2014b), County of Los Angeles (2014), Gonzalez (2014), Gutierrez (2015), Hernandez (2014), Lopez (2014), Lopez (2015), Los Angeles County (2014a), Los Angeles County (2014b), Metro (2014a), Metro (2014b), Metro (2014c), Platero (2014), Williams (2015)

As previously discussed, indirect impacts to other wetlands and waters could also result from spillage of construction materials, as well as from erosion and sedimentation. These potential impacts will be avoided and minimized through implementation of the Project's SWPPP, which is required by law. The Project SWPPP will require that vehicles be checked daily and maintained in accordance with manufacturer's specifications to minimize the potential for leaks, and refueling and maintenance of vehicles will occur at least 50 feet from the edge of any aquatic feature. With the implementation of these APMs and with adherence to applicable regulations, impacts to jurisdictional water features will be minimized.

BOX 11: THREATENED OR ENDANGERED SPECIES AND ESSENTIAL FISH HABITAT

As shown in Figure 1: Project Components Overview Map in Attachment B: Figures, natural areas are concentrated within four sections of the Proposed Project—the Mesa Substation site and adjacent ROWs; the Montebello Hills; the Rio Hondo corridor; and the San Gabriel River corridor. Table 5: Federally Listed Plant Species summarizes the federally listed plant species that have the potential to occur in the region of the Project. Of the five federally listed plant species, the following determinations were made:

- One federally-listed plant species—Nevin's barberry (*Berberis nevinii*)—is present within the Project area
- No species have a high potential to occur within the Project area
- No species have a moderate potential to occur within the Project area
- Three species—Braunton's milk-vetch (*Astragalus brauntonii*), slender-horned spineflower (*Dodecahema leptoceras*), and thread-leaved brodiaea (*Brodiaea filifolia*)—have a low potential to occur within the Project area
- One species—California orcutt grass (*Orcuttia californica*)—has no potential to occur

Table 6: Federally Listed Wildlife Species summarizes the federally listed wildlife species that have the potential to occur in the region of the Project. Of the five federally listed wildlife species, the following determinations were made:

- Two federally listed wildlife species—coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusilus*)—were identified as being present within or near the Project area
- No wildlife species have a moderate potential to occur in the construction areas
- One species—southwestern willow flycatcher (*Empidonax traillii extimus*)—has a low potential to occur
- Two species—southern mountain yellow-legged frog (*Rana muscosa*) and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)—have no potential to occur

U.S. Fish and Wildlife Service (USFWS)-designated critical habitat for coastal California gnatcatcher is also located within the Project area. Project activity within critical habitat for this species will not involve any ground-disturbing activities, will be limited to the existing roads, and will not result in vegetation removal. Therefore, the Project will not impact critical habitat for coastal California gnatcatcher. SCE conducted protocol-level surveys for coastal California

Table 5: Federally Listed Plant Species

Species Name	Federal, State, and CNPS[5] Status[6]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Berberidaceae – Barberry Family					
Nevin's barberry (*Berberis nevinii*)	FE	Nevin's barberry is a perennial evergreen shrub that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian habitats. It is typically found at elevations from approximately 900 to 2,700 feet.	March through June	One California Natural Diversity Database (CNDDB) occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Three CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All three records are presumed extant.	This species was observed in the San Gabriel River corridor during field surveys conducted by Insignia biologists in December 2014. **Present**
Fabaceae (Leguminosae) – Legume Family					
Braunton's milk-vetch (*Astragalus brauntonii*)	FE	Braunton's milk-vetch is a perennial herb that occurs in sandstone or carbonite layers in chaparral, coastal scrub, and valley and foothill grassland habitats. It usually occurs in areas that have been recently burned or disturbed. It is typically found at elevations from near sea level to approximately 2,100 feet.	March through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Project area south of Mesa Substation and in the Montebello Hills area. However, no occurrences have been documented within 5 miles of the site. Two extant occurrences are near the Goodrich Substation site however, there is no suitable habitat in this location. **Low Potential**
Poaceae (Gramineae) – Grass Family					
California orcutt grass (*Orcuttia californica*)	FE	California orcutt grass is an annual herb that occurs in vernal pool habitats. It is typically found at elevations from approximately 50 to 2,150 feet.	April through August	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. **No Potential**
Polygonaceae – Buckwheat Family					
Slender-horned spineflower (*Dodecahema leptoceras*)	FE	Slender-horned spineflower is an annual herb that occurs in sandy substrates in chaparral, cismontane woodland, and alluvial fan coastal scrub habitats. It is typically found at elevations from approximately 650 to 2,500 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded in 1920 and are extirpated.	Suitable habitat for this species occurs in the Project area in the Rio Hondo and San Gabriel River corridors. No documented occurrences are within 5 miles of this portion of the Project area. **Low Potential**

[5] California Native Plant Society
[6] Explanation of federal and state listing codes:

Federal listing codes:
-FE: Federally listed as Endangered
-FT: Federally listed as Threatened

Species Name	Federal, State, and CNPS[5] Status[6]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Themidaceae – Brodiaea Family					
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT	Thread-leaved brodiaea is a perennial bulbiferous herb that occurs in herbaceous plant communities, such as valley needlegrass grassland, valley sacaton grassland, non-native grassland, alkali playa, and vernal pool habitats. These herbaceous communities occur in open areas on clay soils at elevations from 100 to 2,500 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Project area. **Low Potential**

Sources: CNDDB 2014, USFWS 2014, CNPS 2014

Table 6: Federally Listed Wildlife Species

Species Name	Listing Status[7]	Life History	Known Locations	Potential to Occur
Amphibians				
Southern mountain yellow-legged frog (*Rana muscosa*)	FE	This species is endemic to the southern Sierra Nevada and Transverse Ranges. It inhabits high mountain lake, stream, pond, and isolated pool habitat. Alpine lakes where this species occurs usually have water depths greater than 8.2 feet and have open shorelines with margins that are grassy or muddy. Breeding habitat consists of ponds, lakes, and streams that do not dry out in the summer, are deep enough that they don't freeze in the winter, and do not contain predatory fish. Breeding activity for southern mountain yellow-legged frog begins early in the spring and can range from April at lower elevations to June and July in higher elevations. Adults tend to move between breeding, feeding, and overwintering habitats throughout the course of the year. This species is typically found at elevations from approximately 1,000 to 12,000 feet.	Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site; however, these occurrences are extirpated.	No suitable habitat for this species occurs within the Project area. In addition, the Project area is located below the typical elevation range associated with this species. **No Potential**
Birds				
Coastal California gnatcatcher (*Polioptila californica californica*)	FT	Coastal California gnatcatcher is an obligate, permanent resident of coastal sage scrub vegetation. It makes limited use of adjacent habitats outside of the breeding season. The species typically occurs in areas dominated by California sagebrush and California buckwheat. Other shrubs in the coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include brittlebrush (*Encelia californica*), deerweed (*Lotus scoparius*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*).. The species is restricted to elevations from sea level to approximately 2,000 feet. Coastal California gnatcatcher breeds from February to late August, but most of the breeding occurs between mid-March and mid-May.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, and three CNDDB occurrences are documented within 5 miles of the Mesa Substation site. All five records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1928 and is extirpated.	Critical habitat for this species occurs in the Montebello Hills and San Gabriel River corridor within the Project area. Coastal California gnatcatchers were observed nesting within the Mesa Substation site and in the Montebello Hills north of Lincoln Avenue during protocol-level surveys conducted in the spring of 2015. **Nesting: Present** **Foraging: Present**

[7] Explanation of federal listing codes:

Federal listing codes:
-FE: Federally Endangered Species
-FT: Federally Threatened Species
-FC: Candidate for Federal Listing

Species Name	Listing Status[7]	Life History	Known Locations	Potential to Occur
Least Bell's vireo (*Vireo bellii pusillus*)	FE	Least Bell's vireo is a rare and local summer visitor from mid-March to the end of August and ranges from sea level in coastal areas to approximately 1,500 feet in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mulefat scrub, and cottonwood-willow forests. During the breeding season, this species may forage in adjacent upland habitats. Little is known about this species' winter habitat, but it is not exclusively dependent on riparian woodland during winter. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palm groves and hedgerows associated with agricultural fields and rural residential areas. Breeding typically occurs from late March to late September.	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Five CNDDB occurrences are documented within 5 miles of the Mesa Substation site, three of which are possibly extirpated and two of which are presumed extant. Observations of this species including one pair were recorded by Whittier Narrows Nature Center staff at three locations within the Whittier Narrows Recreation Area between April and July 2014. Three CNDDB occurrences are documented within 5 miles of the Goodrich Substation site. However, two occurrences were recorded in 1923 and 1895 and are possibly extirpated. The third was recorded in 1924 and is presumed extant.	Suitable habitat for least Bell's vireo nesting and foraging occurs in the Montebello Hills, and along the San Gabriel River corridor within the Project area, where this species is known to occur. This species was not identified as nesting on the Mesa Substation site during four years of monitoring for the Techapi Renewable Transmission Project (TRTP). Least Bell's vireo was observed nesting and foraging in the Montebello Hills, the Rio Hondo corridor and the San Gabriel River corridor during surveys conducted for the TRTP. **Nesting: Present** **Foraging: Present**
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat includes willows, mulefat, box elder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arroweed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet, but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One of these occurrences is also documented within 0.25 mile of the Goodrich Substation site.	Suitable breeding or foraging habitat for this species occurs in the Project area; however, the occurrences near these areas were recorded in 1894 and 1906 when more riparian habitat will have been present. **Low Potential**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC	Western yellow-billed cuckoo arrives in California as early as May and departs by mid-September. This species prefers to nest in open woodlands with clearings and dense scrubby vegetation, often along water. Breeding habitat generally consists of mixed old growth riparian forests consisting of willow and cottonwood. Breeding generally occurs in the summer between May and August at elevations below 2,500 feet.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Project area. **No Potential**

Sources: CNDDB 2014, CDFW 2011, USFWS 2014

gnatcatcher during the spring of 2015. Two nesting pairs were identified within the Mesa substation site; one pair has three fledglings that are present and the other has three fledglings. Four pairs of coastal California gnatcatchers were observed in the Montebello Hills, north of Lincoln Avenue. Surveys results are provided in Attachment D: Protocol-Level Coastal Gnatcatcher Surveys.

Least Bell's vireo was observed nesting and foraging in riparian areas within the Montebello Hills, the Rio Hondo corridor and the San Gabriel River corridor during surveys previously conducted for the TRTP. This species was not identified on the Mesa Substation site during four years of monitoring for the TRTP. Southwestern willow flycatcher may also nest in riparian areas within the Project site. Project activity within riparian areas will be limited to the existing roads, will not result in vegetation removal in riparian habitat, and will take place outside of the nesting season. Therefore, the Project will not impact least Bell's Vireo or southwestern willow flycatcher.

Special-status plant surveys conducted in 2015 did not identify Braunton's milk-vetch, slender-horned spineflower, thread-leaved brodiaea, or California orcutt grass on the Project site. One individual Nevin's barberry shrub is present on site, and appears to have been planted as part of a demonstration garden. Work within the area of this shrub will be limited to walking new overhead cables between poles and climbing poles to install the cables. This individual shrub will be flagged and avoided during work within this area. As such, special-status plant species will not be impacted by the Project.

A Biological Assessment (BA) has been prepared in accordance with legal requirements set forth under Section 7 of the federal Endangered Species Act (ESA; 16 U.S. Code 1536[c]) to address the potential effects of the Project on federally listed threatened and endangered species that were found to be present on the site. The BA is provided in Attachment E: Biological Assessment.

BOX 15: OTHER CERTIFICATIONS OR APPROVALS/DENIALS RECEIVED FROM OTHER FEDERAL, STATE, OR LOCAL AGENCIES

Table 7: Other Agency Certifications or Approvals summarizes other certifications or approvals that will be required by federal, state, or local agencies for the Project.

Table 7: Other Agency Certifications or Approvals

Permit/Approval/Consultation	Agency	Identification Number	Date Applied	Anticipated Submittal Date	Date Approved/Denied
Federal Agencies					
Section 408 Permit	USACE	--	--	February 2016	--
Section 7 Consultation	USFWS	--	--	June 2015	--
State Agencies					
Permit to Construct	CPUC	A. 15-03-003	March 13, 2015	--	--
Section 1602 Lake or Streambed Alteration Agreement	CDFW	--	--	August 2015	--
Section 401 Water Quality Certification	Los Angeles RWQCB	--	--	August 2015	--
National Pollutant Discharge Elimination System General Construction Permit	State Water Resources Control Board	--	--	August 2015	--
Encroachment Permit	California Department of Transportation	--	--	April 2016	--
Local Agencies					
Encroachment Permit	Cities of Monterey Park, Montebello, and Bell Gardens	--	--	July 2016	--
Grading Permit	City of Monterey Park	--	--	December 2015	--

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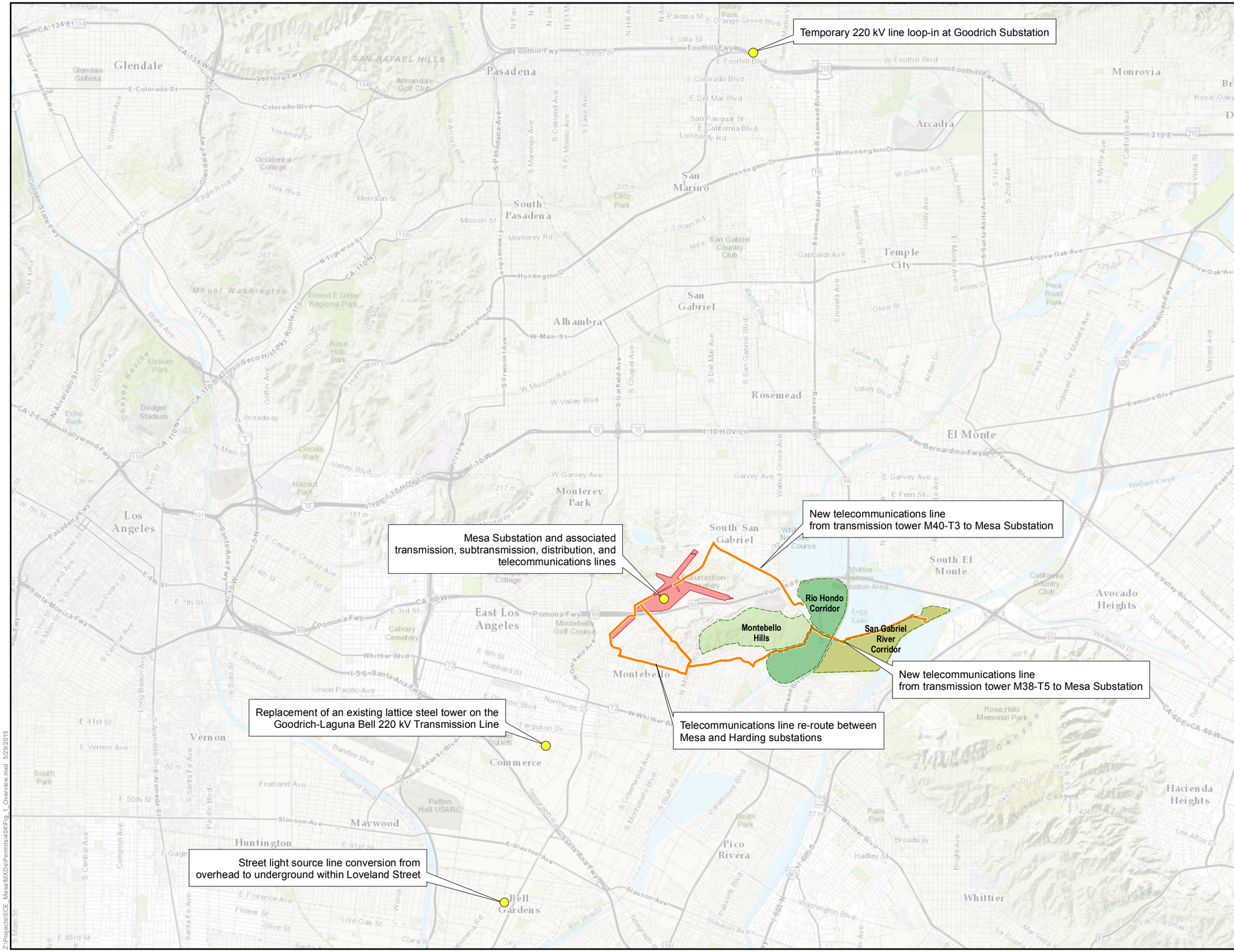
ATTACHMENT B: FIGURES

Figure 1: Project Components Overview Map

Mesa 500 kV Substation Project



Main Component Location

Mesa Substation Study Area

Proposed Telecommunications

Natural Areas

Montebello Hills

Rio Hondo Corridor

San Gabriel River Corridor

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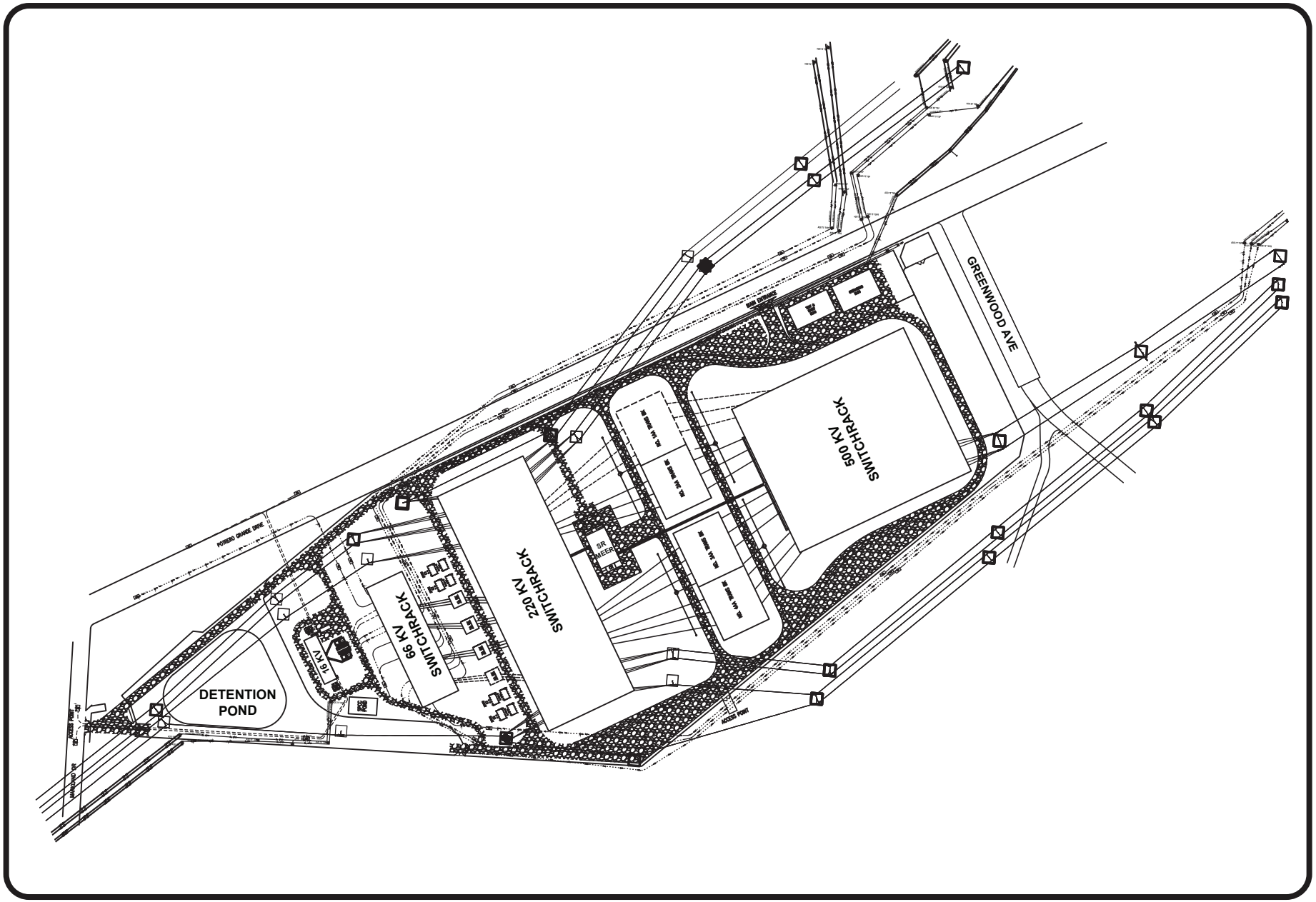

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Figure 2: Proposed Substation Layout

Figure 3:
Grading Phase Areas
Mesa 500 kV Substation Project

Phase Area

- Phase 1
- Phase 2
- Phase 3
- City Boundary

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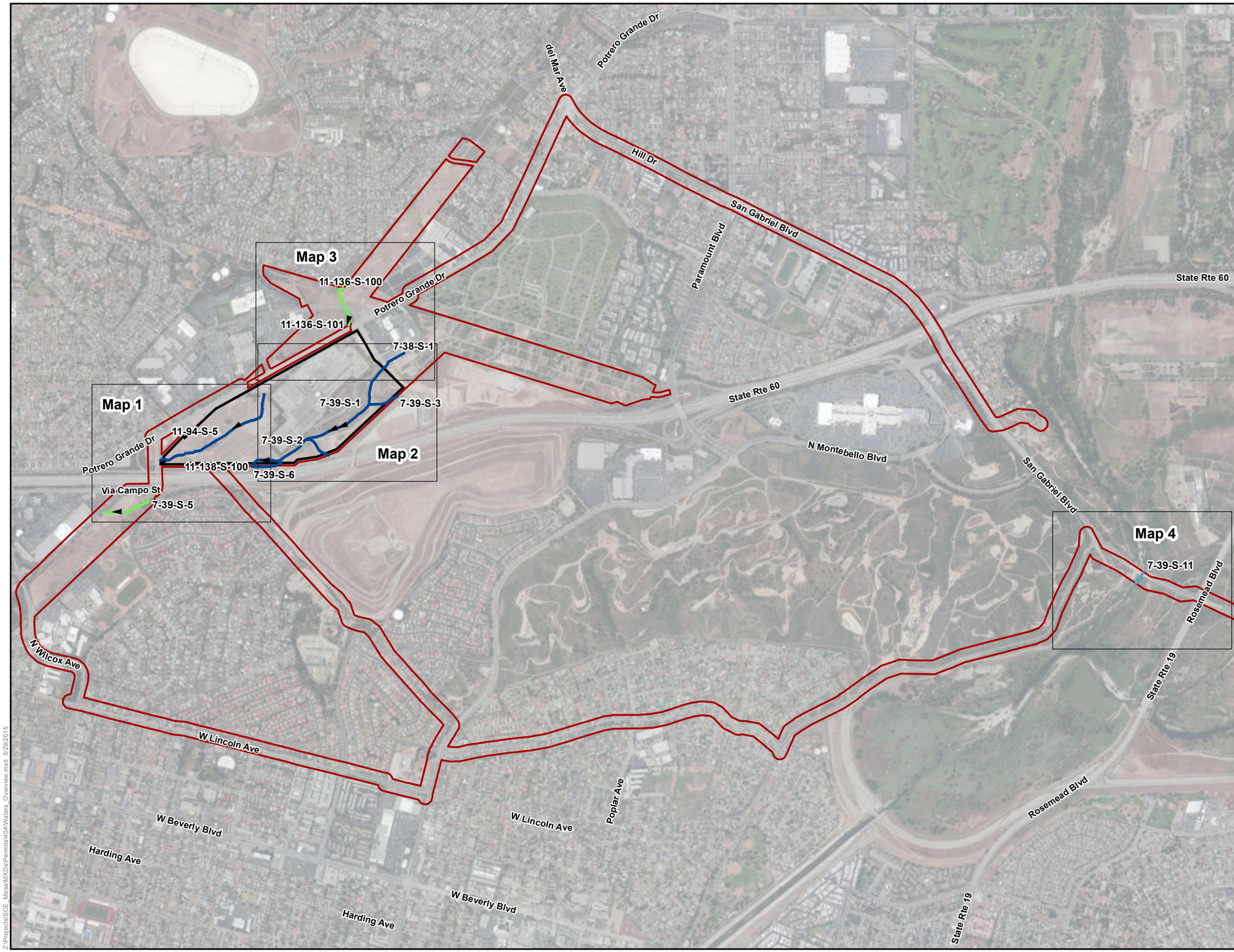
Figure 4:
Impacts to Waters of the U.S.
Overview

Mesa 500 kV Substation Project



Project Area
Mesa Substation Site
Map Extent

Jurisdictional Waters of the U.S.
Rio Hondo (No Impacts)
Water Permanently Impacted
Water Temporarily Impacted
Flow Direction

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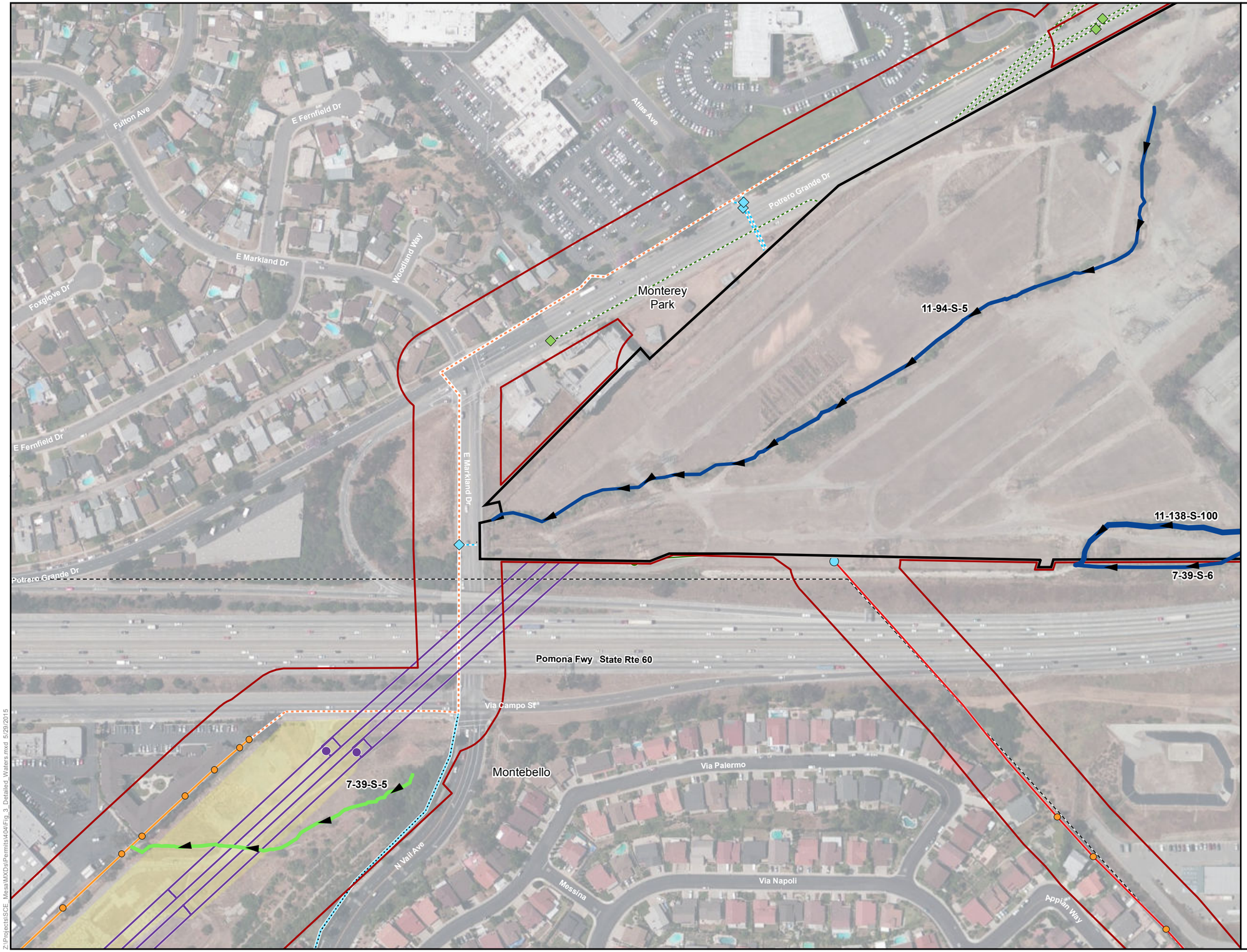


Figure 4:
Impacts to Waters of the U.S.
Map 1 of 4

Mesa 500 kV Substation Project

City Boundary

Jurisdictional Waters of the U.S.

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

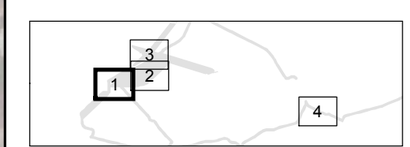
Telecommunications

- Proposed Vault/Manhole
- Existing Pole
- Proposed Overhead (On Existing Facilities)
- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.



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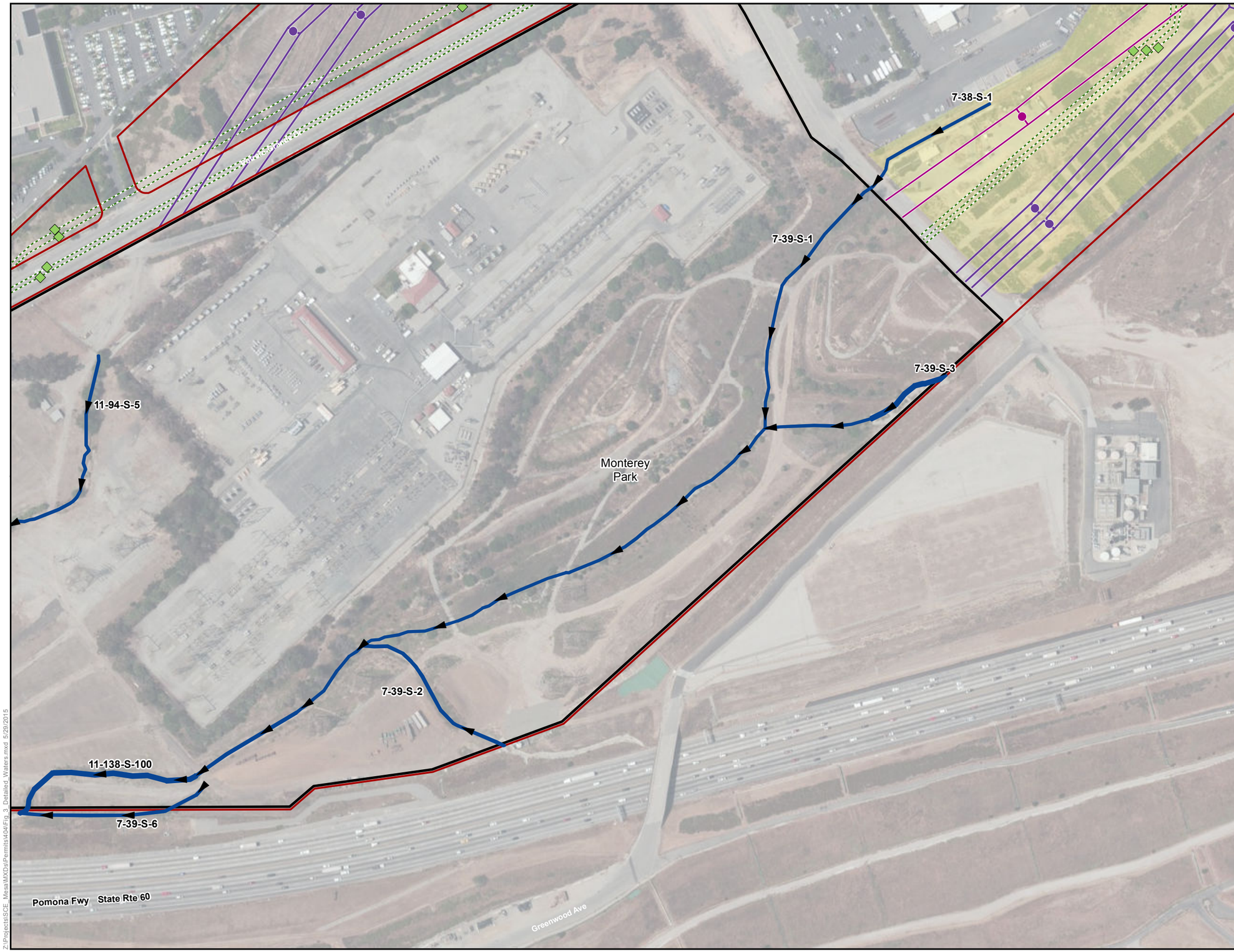

Figure 4: Impacts to Waters of the U.S. Map 2 of 4

Mesa 500 kV Substation Project

City Boundary

Jurisdictional Waters of the U.S.

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

Telecommunications

- Proposed Vault/Manhole
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- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

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Note: Location of proposed facilities are approximate.
Exact locations to be determined after final design is completed.

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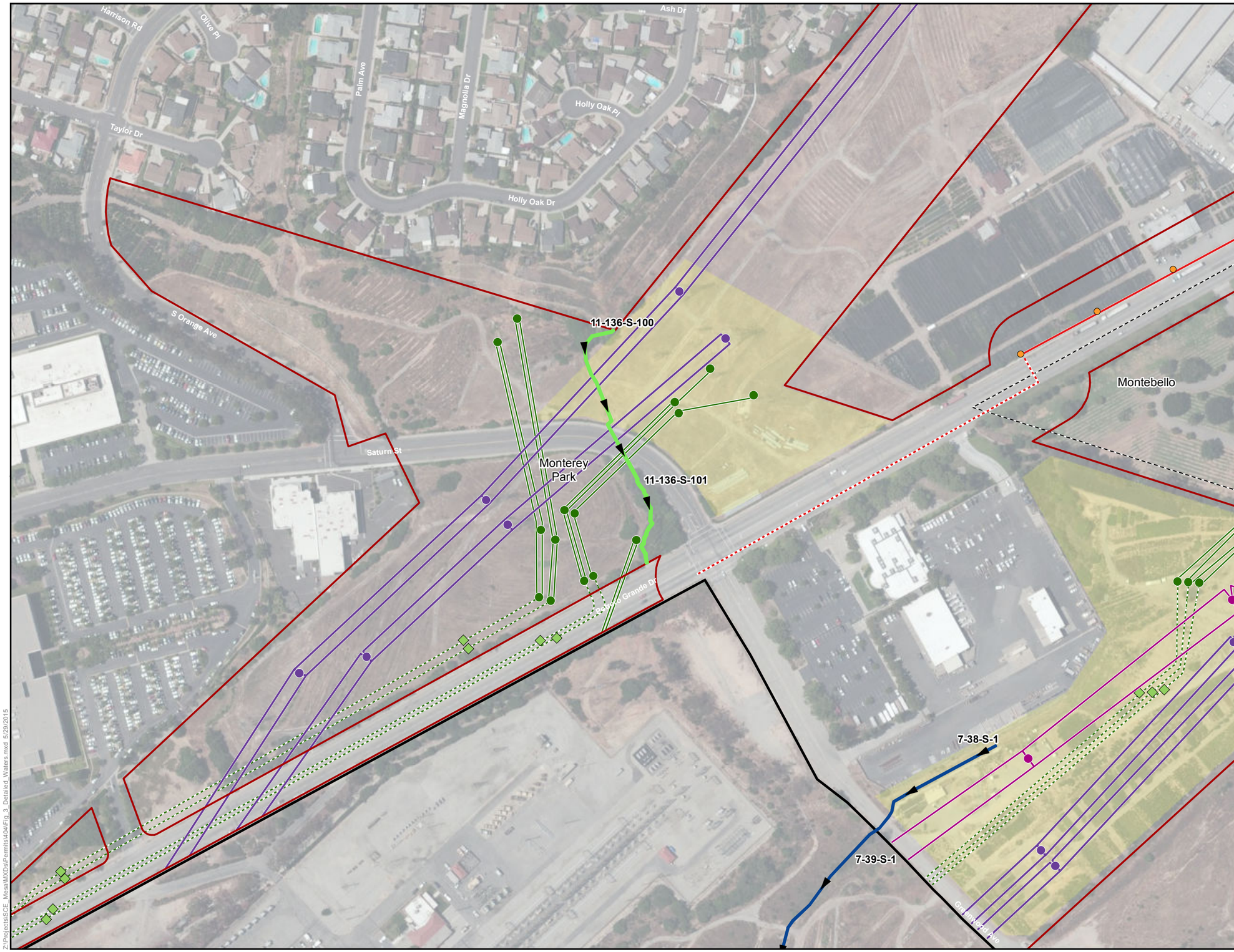

Figure 4: Impacts to Waters of the U.S. Map 3 of 4

Mesa 500 kV Substation Project

City Boundary

Jurisdictional Waters of the U.S.

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
- Proposed 220 kV Line

66 kV Subtransmission

- Proposed 66 kV Vault
- Proposed 66 kV Structure
- Proposed Underground 66 kV Line
- Proposed Overhead 66 kV Line

Telecommunications

- Proposed Vault/Manhole
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- Proposed Underground
- Re-Route Overhead
- Re-Route Underground

16 kV Distribution

- Proposed 16 kV Vault
- Proposed 16 kV Pole
- Proposed 16 kV Underground Line
- Re-Route 16 kV Underground Line (In Existing Facilities)

Note: Location of proposed facilities are approximate. Exact locations to be determined after final design is completed.

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Figure 4: Impacts to Waters of the U.S. Map 4 of 4

Mesa 500 kV Substation Project

City Boundary

Jurisdictional Waters of the U.S.

- Rio Hondo (No Impacts)
- Water Permanently Impacted
- Water Temporarily Impacted
- Flow Direction

Project Components

- Project Area
- Mesa Substation Site
- Staging Yard

500 kV Transmission

- Proposed 500 kV Structure
- Proposed 500 kV Line

220 kV Transmission

- Proposed Temporary 220 kV Structure
- Proposed 220 kV Structure
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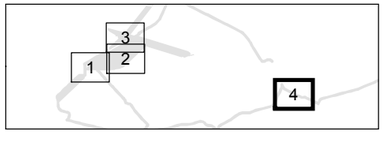

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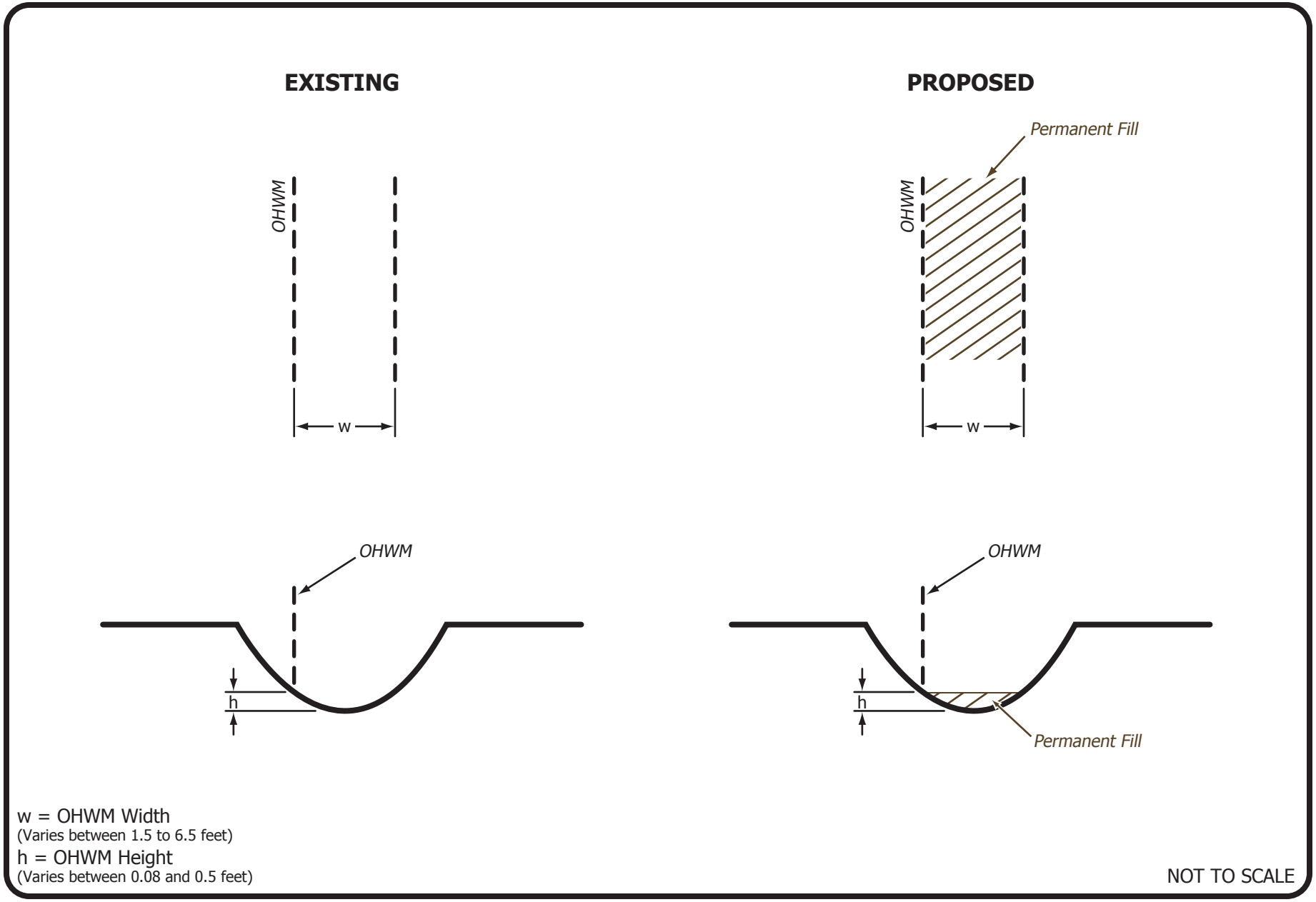

Figure 5: Impacts to Waters of the U.S.: Typical Plan and Cross-Section Drawing